



DR RUTH SEGOMOTSI MOMPATI DISTRICT MUNICIPALITY
KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 –
MOROKWENG
CONTRACT C

CONTRACT NUMBER : RDM2024-008C

VOLUME 1: CONTRACT DOCUMENT

May 2025

NAME OF BIDDER :

:

Closing Date: 20 June 2025

Prepared for:

Dr Ruth Segomotsi Mompoti District Municipality
34 Church Street
VRYBURG
8600
Tel: (053) 928 4700

Compiled by:

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Dr Ruth Segomotsi Mompoti District Municipality
CONTRACT RDM2024-008C
**KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 –
MOROKWENG**
(CONTRACT C)
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Dr Ruth Segomotsi Mompoti District Municipality

CONTRACT RDM2024-008C

**KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 –
MOROKWENG**

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TENDERING PROCEDURES

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END OF SECTION

Dr Ruth Segomotsi Mompoti District Municipality

CONTRACT RDM2024-008C

KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 –
MOROKWENG

TENDER NOTICE AND INVITATION TO TENDER



**Dr RUTH S MOMPATI DISTRICT MUNICIPALITY
INVITATION FOR PROSPECTIVE BIDDERS**
Prospective service providers with proven track records are invited to tender as follows:

Bid No.	Bid Description	Availability of Documents & Non-Refundable Fee	Compulsory Briefing /Site Inspection Venue	CIDB Grading	Closing date	Points System	Contact Person for Technical Enquiries
RDM2024-008C	Kagisano Molopo Regional Bulk Water Scheme: Cluster 6 – Morokweng (Contract C)	12 May 2025 R1500.00	19 May 2025 @ 10h00 (Dr Ruth S Mompoti District Municipality's Council Chambers)	8CE or Higher	20 June 2025 @ 12h00	90/10	Mr Evans Matope at 079 700 3522

Bid details containing the Minimum Specifications and other conditions are detailed in the bid documents. Bid documents with detailed bid specifications and detailed information are obtainable at the Finance department (office hours: Monday to Friday 07h30 to 13h00 and 13h45 to 16h15) of the Dr Ruth S Mompoti District Municipality, 34 Church Street, VRYBURG, 8601, from 08h00 on Monday, 19 May 2025.

Bids will be adjudicated according to the Dr Ruth S Mompoti District Municipality's Supply Chain Management Policy, the Preferential Procurement Policy Framework Act (Act 5 of 2000) and the Preferential Procurement Regulations, 2022, as well as the Broad Base Black Economic Empowerment Act (Act 53 of 2003). A validity period of **120** calendar days is applicable for this bid. Sealed Bids and supporting documents clearly marked with the above reference and description must be placed in the tender box situated at the offices of DR RUTH S MOMPATI DISTRICT MUNICIPALITY, 34 Church Street, VRYBURG, 8601.

In terms of MFMA Circular No 81, issued by National Treasury, it is compulsory as from 1 July 2016 for all prospective service providers to District Municipality's to be registered on the web based **Central Supplier Database (CSD)**. Bids received from service providers not registered on the **CSD** shall therefore be regarded as non-responsive and will not be further evaluated. Prospective service providers can utilise the following link to register on the **CSD**: www.csd.gov.za.

The Dr Ruth S Mompoti District Municipality does not bind itself to accept the lowest or any bid and the District Municipality reserves the right to accept the whole or part of any bid and further reserves the right to re-advertise if it so wishes to. No reasons for the acceptance or rejection of any bid will be given. All bidders must submit two (2) soft copies (i.e USB or DISK) of their bid proposed.

No late bids will be accepted.

MUNICIPAL MANAGER
DR RUTH S MOMPOTI DISTRICT MUNICIPALITY
34 Church Street
VRYBURG
8601

Dr Ruth Segomotsi Mompoti District Municipality

CONTRACT RDM2024-008C

KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 – MOROKWENG

(CONTRACT C)

TENDER DATA

The conditions of tender are the Standard Conditions of Tender as contained in Annex F of the Construction Industry Development Board's Board Notice 136 of 2015 (contained in Government Gazette No. 38960 of 10 July 2015), bound into section T1.3.

The Standard Conditions of Tender makes several references to the tender data. The tender data also contains project specific amendments to the Standard Conditions of Tender applicable to this document. The tender data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the standard conditions of tender.

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

Clause	Addition or Variation to Standard Conditions of Tender
1.1	The Employer is Dr Ruth Segomotsi Mompoti District Municipality.
1.2	The tender documents issued by the employer comprise two volumes. Volume 1: Contract Document contains the parts and sections (contained in each part) as listed in the Contents List of Volume 1 bound in the front of this document. Volume 2: Book of Drawings contains the drawings in the Drawing Register bound in the front of that volume.
1.3.2	Replace the sub-clause with the following: These Conditions of Tender, the Tender Data, List of Returnable Documents and Returnable Schedules which are required for tender evaluation purposes, shall form part of the Contract arising from the invitation to tender.
1.4	The Employer's agent is (also known as the Engineer): <ul style="list-style-type: none">- Tsela Tsweu Consulting Engineers1 Petrus Bosch StreetWelkom

Clause	Addition or Variation to Standard Conditions of Tender
	<p>9460</p> <p>Tel: 057 352 7992</p>
2.1	<p>Only those tenderers who are registered with the CIDB at the time of closing of tenders, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered for an 8CE class of construction work, are eligible to have their tenders evaluated.</p> <p>Joint ventures are eligible to submit tenders provided that:</p> <ol style="list-style-type: none"> every member of the joint venture is registered with the CIDB; the lead partner has a contractor grading designation in the construction works "Civil Engineering" (8CE) class of construction work with a grading designation 8; and 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 an 8CE class of construction work.
2.2.1	<p>Add the following to the sub-clause:</p> <p>Accept that the Employer will not compensate the tenderer for any costs incurred in attending interviews in the office of the employer or the employer's agent (if required).</p>
2.7	<p>An official compulsory tender briefing and clarification meeting will be held as follows:</p> <p>Location : Dr Ruth S Mompoti District Municipality Offices, 34 Church Street, VRYBURG</p> <p>Venue : Dr Ruth S Mompoti District Municipality's Council Chambers</p> <p>Date : Tuesday, 19th May 2025</p> <p>Time : 10:00</p> <p>Confirmation of attendance will be recorded, on site, in the Site Inspection Certificate included in Section T2.2 of the Document.</p> <p>Tender documents will not be made available at the site visit or clarification meeting. Detail relating to the collection of tender documents is indicated in the Tender Notice and Invitation to Tender (Section T1.1 of the document)</p>
2.11	<p>Replace the last sentence of the clause with the following:</p> <p>To correct errors made, draw a line through the incorrect entry and write the correct entry above in black ink and place the full signatures of the authorised signatories next to the correct entry.</p>
2.12.1	<p>Add the following to the clause:</p>

Clause	Addition or Variation to Standard Conditions of Tender
	All alternative tender offers shall be referred to in Section T2.2.1 – Alterations to Tender.
2.12.2	<p>Alternative offers will be considered, but only if the schedules are priced in full according to the project specifications and drawings.</p> <p>Should the Tenderer wish to offer alternative designs and/or construction materials, he shall include with this Tender full details thereof, including a complete bill of quantities, formal design calculations, and full details of all alternative components proposed to be included in the Works. Refer also to the Contract Data in this regard.</p> <p>Failure to properly comply with this clause, thereby preventing the Employer and/or the Employer's Agent to properly assess the full implications of the alternative tender, is likely to disqualify the alternative offered from further consideration.</p> <p>No submission by the Contractor after award for additional payment or time for completion of Works relating to the alternative offer will be considered, the tendered rates submitted shall be considered to reflect the full and final cost implications of the alternative offer.</p>
2.13	<p>Add the following to the clause:</p> <p>No claim will be entertained for faults in the tender price resulting from any discrepancies, omissions or indistinct figures.</p>
2.13.2	<p>Replace the contents of the clause with the following:</p> <p>Return all volumes of the tender document to the Employer after completion of the relevant sections of each volume in their entirety, either electronically (if they were issued in electronic format) or by writing in black ink.</p> <p>All volumes are to be left intact in its original format and no pages shall be removed or re-arranged.</p>
2.13.3	No copies of the tender offer are required.
2.13.4	<p>Add the following to the clause:</p> <p>Only authorised signatories may sign the original and all copies of the tender offer where required in terms of 2.13.3.</p>
2.13.5	<p>The Employer's address for delivery of tender offers and identification details to be shown on each tender offer package are:</p> <p>Tender box location : Dr Ruth Segomotsi Mompoti District Municipality</p> <p>Physical address : 34 Church Street, VRYBURG, 8601</p> <p>Identification details : Contract No. RDM2024-008C – Kagisano Molopo Regional Bulk Scheme: Cluster 6 - Morokweng (CONTRACT C)</p> <p>The name and address of the tender shall be entered on the back of the envelope.</p>

Clause	Addition or Variation to Standard Conditions of Tender
2.13.6	A two-envelope procedure will not be followed.
2.13.10	<p>Add the following to the clause:</p> <p>Accept that all conditions, which are printed or written upon any stationary used by the Tenderer for the purpose of or in connection with the submission of a tender offer for this Contract, which are in conflict with the conditions laid down in this document shall be waived, renounced and abandoned.</p>
2.14	<p>Add the following to the clause:</p> <p>The Tenderer is required to enter information in the following sections of the document:</p> <p>Section T2.2 : Returnable Schedules</p> <p>Section C1.1 : Form of Offer and Acceptance</p> <p>Section C1.2 : Contract Data (Part 2)</p> <p>Section C2.2 : Schedule of Rates</p> <p>The above sections shall be signed by the Tenderer (and witnesses where required). Individual pages should only be initialled by the successful Tenderer and by the witnesses after acceptance by the Employer of the Tender Offer.</p> <p>The Tenderer shall complete and sign the Form of Offer prior to the submission of a Tender Offer.</p> <p>The Schedule of Deviations (if applicable) shall be signed by the successful Tenderer after acceptance by the Employer of the Tender Offer.</p> <p>Accept that failure on the part of the Tenderer to submit any one of the Returnable Documents listed in clause 2.23 within the period stipulated, shall be just cause for the Employer to consider the tender offer as being regarded as non-responsive.</p> <p>Accept that the Employer shall in the evaluation of tender offers take due account of the Tenderer's past performance in the execution of similar engineering works of comparable magnitude, and the degree to which he possesses the necessary technical, financial and other resources to enable him to complete the Works successfully within the contract period. Satisfy the Employer and the Employer's Agent as to his ability to perform and complete the Works timeously, safely and with satisfactory quality, and furnish details in section T2.2.3 of contracts of a similar nature and magnitude which they have successfully executed in the past.</p> <p>Accept that submitting inferior and inadequate information relating to health and safety (as required in clause 2.23) shall be regarded as justifiable and compelling reasons not to accept the Tender Offer of the Tenderer scoring the highest number of tender evaluation points.</p>

Clause	Addition or Variation to Standard Conditions of Tender
2.15.1	<p>The closing time and location for the submission of tender offers are:</p> <p>Time : 12:00, on Friday, 20th June 2025</p> <p>Location : Tender Box of Dr Ruth Segomotsi Mompoti District Municipality 34 Church Street, VRYBURG, 8601</p>
2.16.1	The tender offer validity period is 120 days.
2.16.1	<p>Add the following to the clause:</p> <p>If the tender validity expires on a Saturday, Sunday or public holiday, the tender shall remain valid and open for acceptance until the closure of business on the following working day.</p>
2.16.5	<p>Add the following new clause:</p> <p>Accept that should the Tenderer unilaterally withdraw his tender during this period, the Employer shall, without prejudice to any other rights he may have, be entitled to accept any less favourable tender for the Works from those received, or to call for fresh tenders, or to otherwise arrange for execution of the Works, and the Tenderer shall pay on demand any additional expense incurred by the Employer on account of the adoption of the said courses, as well as either the difference in cost between the tender withdrawn (as corrected in terms of clause 3.9 of the Conditions of Tender) and any less favourable tender accepted by the Employer, or the difference between the tender withdrawn (as corrected) and the cost of execution of the Works by the Employer as well as any other amounts the Employer may have to pay to have the Works completed.</p>
2.18.1	<p>Add the following to the clause:</p> <p>Accept that if requested, the Tenderer shall within 7 days of the date upon which he is requested to do so, submit a full report from his banker as to his financial standing. The Employer may, in its discretion, and subject to the provisions of Section 4(1)(d) of the State Tender Board Act 86 of 1968, condone any failure to comply with the foregoing condition.</p> <p>Accept that the Employer or his agent, reserves the right to approach the Tenderer's banker or guarantor(s) as indicated in the tender document, or the bankers of each of the individual members of any joint venture that is constituted for purposes of this Contract, with a view to ascertaining whether the required guarantee will be furnished, and for purposes of ascertaining the financial strength of the Tenderer or of the individual member of such venture.</p>
2.22	Return all retained tender documents prior to the closing time for the submission of Tender Offers.

Clause	Addition or Variation to Standard Conditions of Tender
2.23	<p>The following certificates / information are to be provided with the tender offer or within three days of receipt of the Employer's or his Agent's written request to submit same:</p> <ul style="list-style-type: none"> a) Specific Goals will be considered for both Leading and JV partner. b) Certified copy of a Workmen's Compensation Certificate, Act 4 of 2002, c) Certified copy of Unemployment Insurance Certificate, Act 4 of 2002, d) Unincorporated or Joint Venture Agreement (if tenderer is a Joint Venture), e) Curriculum vitae of the Health and Safety Officer the successful tenderer intends appointing in accordance with the Occupational Health and Safety Act (Act 85 of 1993). f) Municipal Account or Lease of agreement for both Company and Directors. n) CIDB registration information (Contractor's CRS number) for CIDB grading in the grading designation stipulated in clause 2.1 above, o) Proof of CSD registration. (in case of Unincorporated JV, separate CSD's must be submitted.
3.1	<p>Replace the contents of the clause with the following:</p> <p>Respond, to a request for clarification received in accordance with clause 2.8, within 7 days prior to the closing time stated in clause 2.15 and notify all tenderers who drew procurement documents.</p>
3.4	<p>Tenders will be opened in public immediately after the closing time for tenders, at the same venue.</p>
3.5	<p>A two-envelope procedure will not be followed.</p>
3.8.1	<p>Add the following to the clause:</p> <p>Failure on the part of the Tenderer to submit a tender offer as stipulated in clause 2.13 prior to the closing time as stipulated in clause 2.15 shall be just cause for the Employer to consider the tender offer as being non-responsive.</p> <p>Failure on the part of the Tenderer to submit any one of the returnable documents or certificates listed in clause 2.23 within the period stipulated shall be just cause for the Employer to consider the tender offer as being non-responsive.</p>
3.9	<p>Replace the contents of the clause with the following:</p> <p>Check responsive tender offers for arithmetical errors, correcting them in the following manner:</p> <ul style="list-style-type: none"> a) If a bill of quantities (or schedule of quantities or schedule of rates) applies and there is an error in the line-item total resulting from the product of the unit rate

Clause	Addition or Variation to Standard Conditions of Tender
	<p>and the quantity, the unit rate shall govern and the line-item total shall be corrected.</p> <p>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 corrected total of the prices shall govern.</p> <p>c) Where there is a discrepancy between the amount indicated in the Tenderer's tender offer and the corrected amount obtained after completing the above steps, the corrected amount shall govern.</p> <p>Notify a tenderer upon written request received after the closing date of tenders of all arithmetical errors made that particular tenderer.</p>
3.11.1	<p>Scoring preference</p> <p>Up to $(100-W_1)$ tender evaluation points (W_p) will be awarded to tenderers who complete the preferencing schedule (bound into Section T2.2) and who are found to be eligible for the preference claimed.</p> <p>Method 2 (as described in Clause 3.11.3 of the Standard Conditions of Tender) will be used to evaluate all responsive tender offers, where the value for W_1 is:</p> <p>90 where the financial value inclusive of VAT of all responsive tenders received have a value in excess of R50 000 000,00 (50 Million); or</p> <p>80 where the financial value inclusive of VAT of one or more responsive tender offers equals or is less than R50 000 000,00 (50 Million).</p>
3.11.7	The financial offer will be scored in terms of formula 2 option.
3.12	<p>Replace the contents of the clause with the following:</p> <p>If requested by any Tenderer, submit for the Tenderers' information the policies or certificates of insurance (or both) which the conditions of contract identified in the Contract Data require the Employer to provide.</p>
3.13.1	A Tender offer will only be accepted on condition that such acceptance is not prohibited in terms of clause 44 of the Municipal Supply Chain Management Regulations published in terms of the Municipal Finance Management Act, 2003.
3.16.2	<p>Replace the contents of the clause with the following:</p> <p>Notice of non-acceptance of tender will not be sent to individual unsuccessful tenderers. Particulars of the accepted tender can be obtained from the Employer's Agent.</p>
3.17	The successful tenderer shall receive one copy of the signed contract.

END OF SECTION

Dr Ruth Segomotsi Mompoti District Municipality

CONTRACT NO. RDM2024-008C

KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 – MOROKWENG

STANDARD CONDITIONS OF TENDER

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These standard conditions of tender are identical to those published in Annex F of the Construction Industry Development Board's Standard for Uniformity for construction Procurement, Board Notice 136 Government Gazette No 38960 of 10 July 2015.

END OF SECTION

Dr Ruth Segomotsi Mompoti District Municipality

CONTRACT NO. RDM2024-008C

**KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 –
MOROKWENG**

STANDARD CONDITIONS OF TENDER

1. GENERAL

1.1 Actions

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

1.1.2 The employer and the tenderer and all their agents and employees involved in the tender process shall avoid conflicts of interest and where a conflict of interest is perceived or known, declare any such conflict of interest, indicating the nature of such conflict. Tenderers shall declare any potential conflict of 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 that 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 decisions taken.

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.

1.2 Tender Documents

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

1.3 Interpretation

- 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.
- 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.
- 1.3.3 For the purposes of these conditions of tender, 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 interests which make it difficult to fulfil his or her duties impartially;
 - ii) an individual or organisation is in a position to exploit a professional or official capacity in some way for their personal or corporate benefit; or
 - iii) incompatibility or contradictory interests exist between an employee and the organisation which employs that employee.
 - b) **comparative offer** means the tenderer's financial offer after all tendered parameters that will affect the value of the financial offer have been taken into consideration in order to enable comparisons to be made between offers on a comparative basis
 - 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) **organization** 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

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 readily read, copied and recorded. Communications 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.

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

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

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

1.6 Procurement procedures

1.6.1 General

Unless otherwise stated in the tender data, a contract will, subject to 3.13, be concluded with the tenderer who in terms of 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.

1.6.2 Competitive negotiation procedure

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 3.4, the employer shall announce only the names of the tenderers who make a submission. The requirements of 3.8 relating to the material deviations or qualifications which affect the competitive position of tenderers shall not apply.

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 tender data, shall be invited in each round to enter into competitive negotiations, based on the principle of equal treatment and keeping confidential the proposed solutions and associated information. Notwithstanding the provisions of 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 or 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.

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.

1.6.2.4 The contract shall be awarded in accordance with the provisions of 3.11 and 3.13 after tenderers have been requested to submit their best and final offer.

1.6.3 Proposal procedure using the two stage-system

1.6.3.1 Option 1

1.6.3.1.1 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.

1.6.3.2 Option 2

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.

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.

2. TENDERER'S OBLIGATIONS

2.1 Eligibility

2.1.1 Submit a tender offer only if the tenderer satisfies the criteria stated in the tender data and the tenderer, or any of his principals, is not under any restriction to do business with employer.

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 to do so prior to the closing time for tenders.

2.2 Cost of tendering

Accept that, unless otherwise stated in the tender data, 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 complies with requirements.

2.3 Check documents

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

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.

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.

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.

2.7 Clarification meeting

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

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.

2.9 Insurance

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

2.10 Pricing the tender offer

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.

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

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

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.

2.11 Alterations to documents

Do 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.

2.12 Alternative tender offers

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 as well as a schedule that compares the requirements of the tender documents with the alternative requirements that are proposed.

-
- 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.
- 2.13 Submitting a tender offer
- 2.13.1 Submit one tender offer only, either as a single tendering entity or as a member in a joint venture to provide the whole of the works, services or supply identified in the contract data and described in the scope of works, unless stated otherwise in the tender data.
- 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 legibly in non-erasable ink.
- 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.
- 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.
- 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.
- 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.
- 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.
- 2.13.8 Accept that the employer will not assume any responsibility for the misplacement or premature opening of the tender offer if the outer package is not sealed and marked as stated.
- 2.13.9 Accept that tender offers submitted by facsimile or e-mail will be rejected by the employer, unless stated otherwise in the tender data.
- 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.

2.15 Closing time

- 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. Accept that proof of posting shall not be accepted as proof of delivery.
- 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.

2.16 Tender offer validity

- 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.
- 2.16.2 If requested by the employer, consider extending the validity period stated in the tender data for an agreed additional period with or without any conditions attached to such extension.
- 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.
- 2.16.4 Where a tender submission is to be substituted, submit a substitute tender in accordance with the requirements of 2.13 with the packages clearly marked as "SUBSTITUTE".

2.17 Clarification of tender offer after submission

Provide clarification of a tender offer in response to a request to do so from the employer during the evaluation of tender offers. This may include providing a breakdown of rates or prices and correction of arithmetical errors by the adjustment of certain rates or item prices (or both). No change in the competitive position of tenderers or substance of the tender offer is sought, offered, or permitted.

Note: Sub-clause 2.17 does not preclude the negotiation of the final terms of the contract with a preferred tenderer following a competitive selection process, should the Employer elect to do so.

2.18 Provide other material

- 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.
- 2.18.2 Dispose of samples of materials provided for evaluation by the employer, where required.

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.

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.

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.

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.

2.23 Certificates

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

3. THE EMPLOYER'S UNDERTAKINGS

3.1 Respond to requests from the tenderer

3.1.1 Unless otherwise stated in the tender Data, respond to a request for clarification received up to five working days before the tender closing time stated in the Tender Data and notify all tenderers who drew procurement documents.

3.1.2 Consider any request to make a 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 a 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 outcome of the prequalification process.

3.2 Issue Addenda

-
- If necessary, issue addenda that may amend or amplify the tender documents to each tenderer during the period from the date that tender documents are available until three days before the tender closing time stated in the Tender Data. If, as a result a tenderer applies for an extension to the closing time stated in the Tender Data, the Employer may grant such extension and, shall then notify all tenderers who drew documents.
- 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.
- 3.4 Opening of tender submissions
- 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.
- 3.4.2 Announce at the meeting held immediately after the opening of tender submissions, at a venue indicated in the tender data, the name of each tenderer whose tender offer is opened and, where applicable, the total of his prices, preferences claimed and time for completion for the main tender offer only.
- 3.4.3 Make available the record outlined in 3.4.2 to all interested persons upon request.
- 3.5 Two-envelope system
- 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.
- 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 more than the minimum number of points for quality stated in the tender data, and announce the score obtained for the technical proposals and the total price and any preferences claimed. Return unopened financial proposals to tenderers whose technical proposals failed to achieve the minimum number of points for quality.
- 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.
- 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.

3.8 Test for responsiveness

3.8.1 Determine, after opening and before detailed evaluation, whether each tender offer properly received:

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

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

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

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

3.9 Arithmetical errors, omissions and discrepancies

3.9.1 Check responsive tenders for discrepancies between amounts in words and amounts in figures. Where there is a discrepancy between the amounts in figures and the amount in words, the amount in words shall govern.

3.9.2 Check the highest ranked tender or tenderer with the highest number of tender evaluation points after the evaluation of tender offers in accordance with 3.11 for;

- a) the gross misplacement of the decimal point in any unit rate;
- b) omissions made in completing the pricing schedule or bills of quantities; or
- c) arithmetic errors in:
 - i) line item totals resulting from the product of a unit rate and a quantity in bills of quantities or schedules of prices; or
 - ii) the summation of the prices.

3.9.3 Notify the tenderer of all errors or omissions that are identified in the tender offer and either

confirm the tender offer as tendered or accept the corrected total of prices.

3.9.4 Where the tenderer elects to confirm the tender offer as tendered, correct the errors as follows:

- a) If bills of quantities or pricing schedules apply and there is an error in the line item total resulting from the product of the unit rate and the quantity, the line item total shall govern and the rate shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line item total as quoted shall govern, and the unit rate shall be corrected.
- b) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall govern and the tenderer will be asked to revise selected item prices (and their rates if bills of quantities apply) to achieve the tendered total of the prices.

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.

3.11 Evaluation of tender offers

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 them using the tender evaluation methods and associated evaluation criteria and weightings that are specified in the tender data.

3.11.2 Method 1: Financial offer

In the case of a financial offer:

- a) Rank tender offers from the most favourable to the least favourable comparative offer.
- b) Recommend the highest ranked tenderer for the award of the contract, unless there are compelling and justifiable reasons not to do so.
- c) Re-rank all tenderers should there be compelling and justifiable reasons not to recommend the highest ranked tenderer and recommend the highest ranked tenderer, unless there are compelling and justifiable reasons not to do so and the process set out in this sub-clause is repeated.

3.11.3 Method 2: Functionality, Price and Preference:

In the case of Functionality, Price and Preference:

- a) Score functionality, rejecting all tender offers that fail to achieve the minimum number of points for functionality as stated in the Tender Data. No tender must be regarded as an acceptable tender if it fails to achieve the minimum qualifying score for functionality as

indicated in the tender invitation.

- b) Score each tender in respect of the financial offer made and preferences claimed, if any, in accordance with the provisions of 3.11.7 and 3.11.8.
- c) 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 3.11.7; and
 N_p is the number of tender evaluation points awarded for preferences claimed in accordance with 3.11.8.

- d) Rank tender offers from the highest number of tender evaluation points to the lowest.
- e) 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.
- f) 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 sub-clause is repeated

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 3.11.7 and 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 3.11.7; and
 N_q is the number of tender evaluation points awarded for quality offered in accordance with 3.11.9.

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

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

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 3.11.7 to 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, unless otherwise stated in the Tender Data:

$$T_{EV} = N_{FO} + N_p + N_q$$

where: N_{FO} is the number of tender evaluation points awarded for the financial offer made in accordance with 3.11.7;
 N_p is the number of tender evaluation points awarded for preferences claimed in accordance with 3.11.8; and
 N_q is the number of tender evaluation points awarded for quality offered in accordance with 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 sub-clause is repeated.

3.11.6 Decimal places

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

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} is the number of tender evaluation points awarded for the financial offer; and
 W_1 is the maximum possible number of tender evaluation points awarded for the financial offer as stated in the tender data; and
 A is the number calculated using the formula and option described in table 1 as stated in the tender data.

Table 1 – Formula for calculating the value of A^a

Formula	Basis for comparison	Option 1 ^a	Option 2 ^a
1	Highest price or discount	$A = \left(1 + \frac{(P - P_m)}{P_m} \right)$	$A = P/P_m$
2	Lowest price or percentage commission/fee	$A = \left(1 - \frac{(P - P_m)}{P_m} \right)$	$A = P_m/P$
^a P_m is the comparative offer of the most favourable comparative offer. P is the comparative offer of the tender offer under consideration.			

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.

3.11.9 Scoring quality

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 following formula:

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

where: S_o is the score for quality allocated to the submission under consideration; and
 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

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.

3.13 Acceptance of tender offer

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

- is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement,
- can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform

the contract,

- c) has the legal capacity to enter into the contract,
- d) is not insolvent, in receivership, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his business activities, or is subject to legal proceedings in respect of any of the foregoing,
- e) complies with the legal requirements, if any, stated in the tender data, and
- f) is able, in the opinion of the employer, to perform the contract free of conflicts of interest.

3.14 Prepare contract documents

3.14.1 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, and
- c) other revisions agreed between the employer and the successful tenderer.

3.14.2 Complete the schedule of deviations attached to the form of offer and acceptance, if any.

3.15 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.

3.16 Notice to unsuccessful tenderers

3.16.1 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.

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

3.17 Provide copies of the contracts

3.17.1 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.

3.18 Provide written reasons for actions taken

Provide upon request written reasons to tenderers for any action that is taken in applying these conditions offender, 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 tenderers.

END OF SECTION

Dr Ruth Segomotsi Mompoti District Municipality

CONTRACT RDM2024-008C

**KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 –
MOROKWENG**

RETURNABLE DOCUMENTS

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END OF SECTION

Dr Ruth Segomotsi Mompoti District Municipality

CONTRACT RDM2024-008C

**KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 –
MOROKWENG**

LIST OF RETURNABLE DOCUMENTS

1. Tenderers are required to submit the following with their tenders:
 - a) Specific Goals will be considered for both Leading and JV partner.
 - b) Certified copy of a Workmen's Compensation Certificate, Act 4 of 2002,
 - c) Certified copy of Unemployment Insurance Certificate, Act 4 of 2002,
 - d) Unincorporated or Joint Venture Agreement (if tenderer is a Joint Venture),
 - e) Curriculum vitae of the Health and Safety Officer the successful tenderer intends appointing in accordance with the Occupational Health and Safety Act (Act 85 of 1993).
 - f) Municipal Account or Lease of agreement for both Company and Directors.
 - n) CIDB registration information (Contractor's CRS number) for CIDB grading in the grading designation stipulated in clause 2.1 above,
 - o) Proof of CSD registration. (in case of Unincorporated JV, separate CSD's must be submitted.
2. The returnable schedules included in Section T2.2 will be used to evaluate tenders received. These schedules will also form part of the Contract.
3. Failure on the part of the Tenderer to submit with their tender offer any one of the documents listed in Item No. 1 above or to complete any of the returnable schedules included in Section T2.2, will result in the tender being classified non-responsive and shall be eliminated from further consideration.

END OF SECTION

Dr Ruth Segomotsi Mompoti District Municipality

CONTRACT RDM2024-008C

KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 – MOROKWENG

RETURNABLE SCHEDULES

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FORM T2.2.1 - ALTERATIONS BY TENDERER

Should the Tenderer desire to make any departures from or modifications to the General or Special Conditions of Contract, the Specifications, the Schedule of Quantities or the Drawings, or to qualify his tender in any way, he shall set out his proposals clearly hereunder or alternatively state them in a covering letter attached to his tender and referred to hereunder, failing which the tender will be deemed to be unqualified.

Page and Clause/Item	Alteration / Amendment

SIGNED ON BEHALF OF TENDERER	DATE:

FORM T2.2.2 – DECLARATION OF INTEREST

1. No bid will be accepted from persons in the service of the state ¹.
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 and/or take an oath declaring his/her interest.
3. In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

3.1 Full Name:

3.2 Identity Number:

3.3 Company Registration Number:

3.4 Tax Reference Number:

3.5 VAT Registration Number:

3.6 Are you presently in the service of the state? ¹ **YES / NO**

3.6.1 If so, furnish particulars.

.....
.....

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

3.7.1 If so, furnish particulars.

.....
.....

3.8 Do you, have any relationship (family, friend, other) with persons in the service of the state and who may be involved with the evaluation and or adjudication of this bid?

YES / NO

3.8.1 If so, furnish particulars.

.....

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

3.9.1 If so, furnish particulars.

.....

.....

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

3.10.1 If so, furnish particulars.

.....

.....

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

3.11.1 If so, furnish particulars.

.....

CERTIFICATION

I, THE UNDERSIGNEDCERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT. I ACCEPT THAT THE STATE MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

SIGNED ON BEHALF OF TENDERER	DATE:
POSITION	NAME OF BIDDER

¹MSCM Regulations: "in the service of the state" means to be –

- (a) a member of –
 - (i) any municipal council;
 - (ii) any provincial legislature; or
 - (iii) the national Assembly or the national Council of provinces;
- (b) a member of the board of directors of any municipal entity;
- (c) an official of any municipality or municipal entity;
- (d) an employee of any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 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

FORM T2.2.3 - WORKS PREVIOUSLY EXECUTED

The following is a statement of major works of a similar nature successfully executed by myself/ourselves in recent years.
Failure to detail the required information shall signify that the tender is submitted by an inexperienced tenderer.

Employer	Employer's Agent / Consultant Firm	Nature of Works / Description of Work	Value of Construction Works Rm	Duration and Completion Date
	Firm: Contact Name: Telephone No.:			
	Firm: Contact Name: Telephone No.:			
	Firm: Contact Name: Telephone No.:			
	Firm: Contact Name: Telephone No.:			

Note: Only the four (4) projects listed in the above table, with their relevant supporting information will be evaluated for Experience Points in Form T2.2.21.

FORM T2.2.3 - WORKS PREVIOUSLY EXECUTED (continued)

The following information must be contained in each recommendation letter for it to qualify for points as prescribed above:

- I. Description of work
- II. Value
- III. Contract Construction Period
- IV. Actual Construction Period
- V. Date Completed
- VI. Reasons why Contractual Construction Period were exceeded if applicable.

--	--

SIGNED ON BEHALF OF TENDERER

DATE:

FORM T2.2.4 - PRESENT COMMITMENTS

Employer	Employer's Agent	Nature of Works	Value of Works Rm	Duration and Completion Date
	Firm Contact Name Telephone No.			
	Firm Contact Name Telephone No.			
	Firm Contact Name Telephone No.			
	Firm Contact Name Telephone No.			

--	--

SIGNED ON BEHALF OF TENDERER

DATE:

FORM T2.2.5 - SUPERVISORY AND SAFETY PERSONNEL

PREVIOUS EXPERIENCE ON WORKS OF A SIMILAR NATURE DURING THE LAST FIVE YEARS

Name	% Time on Site	Position (Current)	Accredited Qualifications	Service (Years)	Name of Project And year executed	Value of Works Rm	Position Occupied
Contracts Manager _____							
Construction Manager (1) _____							
Construction Manager (2) _____							
Contractor's Foremen _____							
Construction Health and Safety Officer							

Specific knowledge: Names of various employees occupying the positions above must be stated, CVS and certified copies of qualifications must be attached in order to qualify for points.

Construction Team Key Personnel

- I. Safety Officer with First Aid plus OHSA (Construction Regulations) qualification **(5 points)**

--	--

SIGNED ON BEHALF OF TENDERER

DATE:

FORM T2.2.6 - LABOUR UTILISATION

Labour Categories - Definitions

NOTE: These definitions serve as a guideline to complete the following table and will in no respect alter the Project Specifications or Standardised Specifications

1. General Foreman / Foreman

An employee who gives out work to and directly co-ordinates and supervises employees. His duties encompass any one or more of the following activities:

- a) Supervision;
- b) maintaining discipline;
- c) ensuring safety on the workplace;
- d) being responsible to the Contractor for efficiency and production for his portion of the works; and
- e) performing skilled work, whether in an instructional capacity or otherwise.

2. Charge hand

An employee engaged in any one or more of the following activities:

- a) Being primarily employed in a supervisory capacity, but who may also be doing the work of an artisan;
- b) giving out work to other employees under his control and supervision;
- c) ensuring safety on the workplace;
- d) maintaining discipline; and
- e) being directly responsible to a general foreman or foreman or the Contractor or the Contractor's representative for efficiency and production for his portion of the works.

3. Artisan

An employee who has successfully completed all prescribed courses at a practical institutional training centre for a particular trade and who has successfully completed the on-site period of training as prescribed and who has successfully passed the prescribed trade tests.

4. Team Leader

An employee engaged in any one or more of the following activities:

- a) Being employed in a supervisory capacity, but who may also be doing the work of a skilled person;
- b) giving out work to other employees under his control and supervision;
- c) maintaining discipline;
- d) being directly responsible to a Charge hand or a foreman or a general foreman or the employer's authorised representative for efficiency and production for his portion of the works.

5. Skilled Employee

An employee engaged in an ancillary trade or an assistant artisan.

6. Semi-Skilled Employee

An employee with any specified skills, an apprentice or a trainee-artisan.

7. Unskilled Employee

An employee engaged on any task or operation not specified above.

8. Imported Employee

Personnel permanently employed by Contractor.

9. Local Employee

Temporary workforce employed through Labour Desk.

FORM T2.2.7 – LABOUR UTILISATION - MAN DAYS

Categories	No. of Man Days	
	Imported	Local
1. Contracts Manager		
2. Construction Manager		
3. Foreman/Supervisors (specify type)		
3.1 _____		
3.2 _____		
3.3 _____		
4. Safety Inspectors (specify type)		
4.1 _____		
4.2 _____		
5. Charge hands		
6. Artisans		
7. Operators/Drivers		
8. Clerks/ Storeman		
9. Team Leader		
10. Skilled Labour		
11. Semi-skilled Labour		
12. Unskilled Labour		

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SIGNED ON BEHALF OF TENDERER

DATE:

FORM T2.2.8 - COMPLIANCE WITH OHSA (ACT 85 OF 1993)

Tenderers are required to satisfy the Employer and the Employer's Agent as to their ability and available resources to comply with the above by answering the following questions and providing the relevant information required below.

1. Is the Contractor familiar with the OHSA (ACT 85 OF 1993) and its Regulations? **YES / NO**
2. Who will prepare the Contractor's Health and Safety Plan? (Provide a copy of the person/s curriculum vitae/s or company profile).

-
3. Does the Contractor have a health and safety policy? If yes, provide a copy. How is this policy communicated to all employees? **YES / NO**

-
4. Does the Contractor keep records of safety aspects of each construction site? If yes, what records are kept? **YES / NO**

-
5. Does the Contractor conduct monthly safety meetings? If yes, who is the chairperson of the meeting, and who attends these meetings? **YES / NO**

-
6. Does the Contractor have a safety officer in his employment, responsible for the overall safety of his company? If yes, please explain his duties and provide a copy of his CV - (Attach) **YES / NO**

7. Does the Contractor have trained first aid employees? If yes, indicate who. **YES / NO**

-
8. Does the Contractor have a safety induction training programme in place? If yes, provide a copy. **YES / NO**

--	--

SIGNED ON BEHALF OF TENDERER

DATE:

FORM T2.2.9 - PLANT AND EQUIPMENT

1. Major Plant and Equipment available for this Contract :

Quantity	Size, Description, Capacity, etc.

2. Major Plant and Equipment that will be hired for this contract if my/our tender is accepted:

Quantity	Size, Description, Capacity, etc.

Note:

- Proof must be provided that equipment is owned by the company.
- Proof must be provided (if available) from supplier if the bidder intends to hire and does not have his own plant.

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SIGNED ON BEHALF OF TENDERER

DATE:

FORM T2.2.10 - SUB-CONTRACTORS

The tenderer shall list below any subcontractors he intends to employ to carry out part(s) of the Works.

The acceptance of this tender shall not be construed as being approval of all or any of the listed subcontractors. Should any or all of the subcontractors be not approved subsequent to the acceptance of the tender, it shall in no way invalidate this tender, and the tendered unit rates for the various items of work shall remain final and binding in the event of a subcontractor not listed below being approved by the Employer.

Company	Portion of Contract	Approx. Value

--	--

SIGNED ON BEHALF OF TENDERER

DATE:

MBD 9

FORM T2.2.11 - CERTIFICATE OF INDEPENDENT BID DETERMINATION

- 1 This Municipal Bidding Document (MBD) must form part of all bids¹ invited.
- 2 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging). ² Collusive bidding is a **pe se** prohibition meaning that it cannot be justified under any grounds.
- 3 Municipal Supply Regulation 38 (1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:
 - a. take all reasonable steps to prevent such abuse;
 - b. reject the bid of any bidder if that bidder or any of its directors has abused the supply chain management system of the municipality or municipal entity or has committed any improper conduct in relation to such system; and
 - c. cancel a contract awarded to a person if the person committed any corrupt or fraudulent act during the bidding process or the execution of the contract.
- 4 This MBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.
- 5 In order to give effect to the above, the attached Certificate of Bid Determination (MBD9) must be completed and submitted with the bid:

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

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

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

(Bid Number and Description)

in response to the invitation for the bid made by:

(Name of Municipality / Municipal Entity)

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

I certify, on behalf of : _____ that:
(Name of Bidder)

- 1 I have read and I understand the contents of this Certificate;
- 2 I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
- 3 I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
- 4 Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;
- 5 For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:
 - (a) has been requested to submit a bid in response to this bid invitation;
 - (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
 - (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder
- 6 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium³ will not be construed as collusive bidding.

MBD 9

- 7 In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
- (a) prices;
 - (b) geographical area where product or service will be rendered (market allocation)
 - (c) methods, factors or formulas used to calculate prices;
 - (d) the intention or decision to submit or not to submit, a bid;
 - (e) the submission of a bid which does not meet the specifications and conditions of the bid;
- or
- (f) bidding with the intention not to win the bid.
- 8 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.
- 9 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

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

MBD 9

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

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

FORM T2.2.12 - AUTHORITY OF SIGNATORY

With reference to Clause 2.13.4 of the Tender Data, I/we herewith certify that this tender is submitted by : *(Mark applicable block)*

a company, and attach hereto a certified copy of the required resolution of the Board of Directors

☐

a partnership, and attach hereto a certified copy of the required resolution by all partners

☐

a close corporation, and attach hereto a certified copy of the required resolution of the Board of Officials

☐

a one-man business, and attach hereto certified proof that I am the sole owner of the business submitting this tender

☐

a joint venture, and attach hereto

☐

- * a notarial certified copy of the original document under which the joint venture was constituted; and
- * certified authorisation by the participating members of the undersigned to submit tenders and conclude contracts on behalf of the joint venture

Name of Lead Firm _____

A signed original certified copy of the joint venture agreement showing clearly the percentage contribution of each partner to the joint venture shall be appended to this schedule.

--	--

SIGNATURE OF TENDERER

DATE:

FORM T2.2.13 - COMPLIANCE WITH OHSA (ACT 85 OF 1993)

Tenderers are required to satisfy the Employer and the Engineer as to their ability and available resources to comply with the above by answering the following questions and providing the relevant information required below.

9. Is the Contractor familiar with the OHSA (ACT 85 OF 1993) and its Regulations? **YES / NO**

10. Who will prepare the Contractor's Health and Safety Plan? (Provide a copy of the person/s curriculum vitae/s or company profile).

11. Does the Contractor have a health and safety policy? If yes, provide a copy. How is this policy communicated to all employees? **YES / NO**

12. Does the Contractor keep records of safety aspects of each construction site? If yes, what records are kept? **YES / NO**

13. Does the Contractor conduct monthly safety meetings? If yes, who is the chairperson of the meeting, and who attends these meetings? **YES / NO**

14. Does the Contractor have a safety officer in his employment, responsible for the overall safety of his company? If yes, please explain his duties and provide a copy of his CV - (Attach) **YES / NO**

15. Does the Contractor have trained first aid employees? If yes, indicate who. **YES / NO**

16. Does the Contractor have a safety induction training programme in place? If yes, provide a copy. **YES / NO**

--	--

SIGNATURE OF TENDERER

DATE:

FORM T2.2.14 - TAX CLEARANCE CERTIFICATE

A printed Tax Clearance Certificate from the South African Revenue Services (SARS) shall be attached to this Schedule.

Each party to a Joint Venture shall submit a separate printed Tax Clearance Certificate.

LEAD CONTRACTOR'S TAX COMPLIANCE STATUS PIN

--

& JV PARTNER'S TAX COMPLIANCE STATUS PIN

--

--	--

SIGNATURE OF TENDERER

DATE:

FORM T2.2.15 - CONTRACTOR'S CRS NUMBER FOR CIDB GRADING

LEAD CONTRACTOR'S CRS NUMBER

--

& JV PARTNER'S CRS NUMBER

--

--	--

SIGNATURE OF TENDERER

DATE:

FORM T2.2.16 - CONTRACTOR'S BANKING DETAILS

CONTRACTOR'S BANK RATING

The bidder to provide: Account Number, Name of Bank and branch code

LEAD CONTRACTOR

Name of Bank:

Account Name:

Account Number:

Branch Code :

& LEAD JV PARTNER

Name of Bank:

Account Name:

Account Number:

Branch Code :

--	--

SIGNATURE OF TENDERER

DATE:

**FORM T2.2.17 - DECLARATION IN TERMS OF THE MUNICIPAL FINANCE MANAGEMENT
ACT (No. 56 of 2003)**

Item	Question	Yes	No
1.1	Is the Tenderer or any of its directors listed on the National Treasury's database as a company or person prohibited from doing business with the public sector? (Companies or persons who are listed on this database were informed in writing of this restriction by the National Treasury after the <i>audi alteram partem</i> rule was applied).	Yes <input type="checkbox"/>	No <input type="checkbox"/>
1.1.1	If so, furnish particulars:		
1.2	Is the Tenderer or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)? (To access this Register enter the National Treasury's website, www.treasury.gov.za, click on the icon "Register for Tender Defaulters" or submit your written request for a hard copy of the Register to facsimile number (012) 3265445).	Yes <input type="checkbox"/>	No <input type="checkbox"/>
1.2.1	If so, furnish particulars:		
1.3	Was the Tenderer or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
1.3.1	If so, furnish particulars:		
1.4	Does the Tenderer or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months? Attach proof not older than three months.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
1.4.1	If so, furnish particulars:		
1.5	Was any contract between the Tenderer and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
1.5.1	If so, furnish particulars:		

CERTIFICATION

I, THE UNDERSIGNEDCERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT. I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT, ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

--	--

SIGNED ON BEHALF OF TENDERER

DATE:

--	--

POSITION

NAME OF BIDDER

***where the entity tendering is a joint venture, each party to the joint venture must sign a declaration in terms of the Municipal Finance Management Act and attach it to this schedule.**



FORM T2.2.18 - CERTIFICATE FOR MUNICIPAL SERVICES AND PAYMENTS TO SERVICE PROVIDER

To: THE MUNICIPAL MANAGER, DR RUTH SEGOMOTSI MOMPATI DISTRICT MUNICIPALITY

CERTIFICATE FOR MUNICIPAL SERVICES AND PAYMENTS TO SERVICE PROVIDER

Information required in terms of the Municipal's Supply Chain Management Policy, Sections 51.1 and 111.2

CONTRACT NUMBER RDM2024-008C : DR RUTH SEGOMOTSI MOMPATI DISTRICT MUNICIPALITY – KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 – MOROKWENG (CONTRACT C)

NAME OF THE BIDDER:

FURTHER DETAILS OF THE BIDDER(S); Director / Shareholder / Partners, etc:

Directors /Shareholder/Partner	Physical address of the Business	Municipal Account number(s)	Physical residential address of the Director / shareholder / partner	Municipal Account number(s)

NB: Please attach Certified copy(ies) of ID document(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.

--	--

SIGNED ON BEHALF OF TENDERER / BIDDER

DATE:

(i) For office use (comments): Telephone relevant Local Municipality

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

NB: Bidders to furnish proof of payment of Municipal Services and any other Contract with Landlord / Home Owner, or letter from Tribal Authority.

FORM T2.2.19 - AUTHORISATION FOR THE DEDUCTION OF OUTSTANDING AMOUNTS OWED TO COUNCIL

TO:	THE MUNICIPAL MANAGER, DR RUTH SEGOMOTSI MOMPATI DISTRICT MUNICIPALITY
FROM:	

(NAME OF BIDDER / TENDERER)

AUTHORISATION FOR THE DEDUCTION OF OUTSTANDING AMOUNTS OWED TO COUNCIL

Extract from Supply Chain Management Policy, Section 51.1:

“The Municipal Manager may reject the bid or quote of any person if that person or any of its directors has:

51.1 failed to pay municipal rates and taxes or municipal service charges and such rates, taxes and charges are in arrears for more than three months; ...”

I, THE UNDERSIGNED, _____,
(FULL NAME IN BLOCK LETTERS)

hereby authorise the Dr Ruth Segomotsi Mompoti District Municipality to deduct the full amount outstanding by the business organization / Director, shareholder, partner, etc from any payment due from Dr Ruth Segomotsi Mompoti District Municipality or any Local Municipality within the District.

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

--	--

SIGNED ON BEHALF OF TENDERER / BIDDER

DATE:

in the presence of the subscribing witnesses.

AS WITNESSES:

SIGNATURE WITNESS 1	NAME IN BLOCK LETTERS
SIGNATURE WITNESS 2	NAME IN BLOCK LETTERS

FORM T2.2.20 - RECORD OF ADDENDA TO TENDER DOCUMENTS

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

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

Attach additional pages if more space is required.

SIGNED ON BEHALF OF TENDERER	DATE:
POSITION	NAME OF BIDDER

FORM T2.2.21 - QUALITY CRITERIA AND POINTS CLAIMED

1. Points for Quality Threshold

Description			Section no.	No of Points	
				Maximum	Claimed
Specific Rural Water Supply Programme expertise	Company Capacity and capability	Experience in Similar Projects	T2.2.3	30	
		Quality of previous projects	T2.2.3	20	
		Plant & Equipment	T2.2.9	20	
		Bank Rating	T2.2.16	10	
	Project Team	Experience of Key Personnel	T2.2.5	20	
	Total (Specific project applicable expertise)			100	

Note:

The minimum number of evaluation points for quality for a tender to be considered responsive is **70 points**.

Explanation of Points for Quality Threshold:

QUALITY ASSESSMENT CRITERIA

1 Experience in Similar Projects (30 Points)

Previous **similar** projects as listed in **Form T2.2.3** (Completion certificates **and** recommendation letters from Employers should be attached to claim points)

- Four projects (Construction Value >R40m per project) **(30 Points)**
- Two projects (Construction Value >R40m per project) **(15 Points)**
- One project (Construction Value >R40m per project) **(5 Points)**
- Four projects (Construction Value >R30m per project) **(20 Points)**
- No Projects (0 Points)

2 Quality of previous projects (Projects provided for quality should be the same as provided for Experience above) (20 points)

The following information must be attached for each similar project as claimed above in order to claim points.

- Description
- Value
- Construction Period
- Completion Certificate
- Reasons why Contractual Construction Period were exceeded (if applicable.)
- Client & Contact telephone number or Consultant & telephone number

Required information attached for all **four listed** projects **(20 Points)**

Required information attached for one **listed** project **(5 Points)**

Partial information attached for one **listed** project **(3 Points)**

Completed Work on Time **(5 Points)**

3 Plant and Equipment (20 points) (Proof of ownership or availability within 3 weeks to be provided)

TLB (Owned * / hired* = 2 Points / 1 Point)

Excavator (Owned * / hired* = 4 Points / 2 Point)

Tipper (6m³) (Owned / hired* = 2 Point / 1 Point)

Tipper (6m³) (Owned / hired* = 2 Point / 1 Point)
Roller (Walk behind) (Owned */ hired* = 2 Point / 1 Point)
Pump for Pressure testing (Owned */ hired* = 4 Point / 2 Point)
Tractor & Trailer (Owned */ hired* = 2 Point / 1 Point)
Water Tanker (Owned */ hired* = 4 Point / 2 Point)

- * Owned to score maximum points (attach proof)
- * Rental agreement with availability within 3 weeks = 10 Points (attach proof)

Plant and Equipment listed in returnable documents Form T2.2.9 should be available at all times during the execution of the works.

4 Bank Rating (10 points)

The bidder to provide: Account Number, Name of Bank and branch code

- Bank rating better than "B" with proof **(10 points)**
- Bank rating "B" with proof **(8 points)**
- Bank Rating "C" with proof **(5 points)**

5 Experience of Proposed Construction Site Supervisor & Safety Office (20 points)

(CV's and supporting documentation of the proposed site staff and Safety Officer must be attached with the following information available)

Full Name:

Date of Birth:

Years with Current Firm:

Years' Experience:

Detailed Tasks Assigned:

Key Qualifications:

[Give an outline of staff member's experience and training most pertinent to tasks on assignment. Describe degree of responsibility held by staff member on relevant previous assignments and give dates and locations. Use about half a page.]

Education:

[Summarize college/university and other specialised education of staff member, give names of schools, dates attended, and degrees obtained. Use about one quarter of a page.]

Employment Record:

[Starting with present position, list in reverse order every employment held. List all positions held by staff member since graduation, giving dates, names of employment organizations, titles of positions held, and locations of assignments. For experience in last ten years, also give types of activities performed and client references, where appropriate.]

Scoring - (Maximum 20 points)

- * **Construction Manager** with National Diploma or Higher, with 10 years relevant experience **(15 Points)**
- * **Construction Manager** with National Diploma or Higher, with 5 years relevant experience **(10 Points)**
- * **Construction Manager** with National Diploma or Higher, with less than 5 years relevant experience **(5 Points)**
- * **Safety Officer** with **First Aid plus OHSA** (Construction Regulations) qualification **(5 points)**
- * No Safety Officer **(0 Points)**

PHASE FOUR: OBJECTIVE CRITERIA AND RISK ANALYSIS

1. The Tenderers having the highest ranking / number of points, will additionally be reviewed against the following points listed as "Other Objective Criteria" in terms of the PPPFA, in order to ascertain suitability for award. Tenderers will be assessed on whether they are not:
 - i) Removed from a contract between them and any organ of state on account of failure to perform on or comply with the contract.
 - ii) Financial health of the bidder will be assessed if deemed necessary, to ensure that the service provider will be able to operate as per required deliverable.
 - iii) Unduly high or unduly low Tendered rates in the Tender offer. In this regard, a financial risk analysis of 10% will be performed to verify that the costs are reasonable and balanced.
 - iv) In terms of unduly high Tendered amounts in the Tender offer, negotiation process as outlined in Regulation 24 of the MFMA Regulations will apply.
2. This tender will be considered as a whole. All trades listed in the Bills of Quantities or Pricing schedule must be priced for (except provisional sums and allowances), failure to do so will increase the commercial risk of the tender and may lead to elimination or passing over of the tenderer.
3. Tenders may be disqualified if tendered rates are found to be distorted. The market average of received bid prices excluding Outliers, as well as the Dr Ruth Segomotsi Mompoti District Municipality estimate will be used as a guide to indicate financial risk.

Signature of Tenderer : _____ Date : _____

MBD 1

PART A INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE DR RUTH SEGOMOTSI MOMPATI DISTRICT MUNICIPALITY					
BID NUMBER:	RDM2024-008C	CLOSING DATE:	20 th June 2025	CLOSING TIME:	12:00 (Mid-Day)
DESCRIPTION	KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 – MOROKWENG (CONTRACT C)				
THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (MBD7).					
BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT (STREET ADDRESS)					
Dr Ruth Segomotsi Mompoti District Municipality					
50 Market Street					
VRYBURG					
8601					
SUPPLIER INFORMATION					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
TAX COMPLIANCE STATUS	TCS PIN:		OR	CSD No:	
ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES ENCLOSE PROOF]		ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES OFFERED?		<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES, ANSWER PART B:3]
TOTAL NUMBER OF ITEMS			TOTAL BID PRICE		R
SIGNATURE OF BIDDER		DATE		
CAPACITY UNDER WHICH THIS					
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:			TECHNICAL INFORMATION MAY BE DIRECTED TO:		
DEPARTMENT			CONTACT PERSON		
CONTACT PERSON			TELEPHONE NUMBER		
TELEPHONE NUMBER			FACSIMILE NUMBER		
FACSIMILE NUMBER			E-MAIL ADDRESS		
E-MAIL ADDRESS					

PART B
TERMS AND CONDITIONS FOR BIDDING

1. BID SUBMISSION:										
<p>1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.</p> <p>1.2. ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED (NOT TO BE RE-TYPED) OR ONLINE</p> <p>1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.</p>										
2. TAX COMPLIANCE REQUIREMENTS										
<p>2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.</p> <p>2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.</p> <p>2.3 APPLICATION FOR THE TAX COMPLIANCE STATUS (TCS) CERTIFICATE OR PIN MAY ALSO BE MADE VIA E-FILING. IN ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA.</p> <p>2.4 FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PART B:3.</p> <p>2.5 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.</p> <p>2.6 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.</p> <p>2.7 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.</p>										
3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS										
<table style="width: 100%; border: none;"> <tr> <td style="width: 70%;">3.1. IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?</td> <td style="width: 30%; text-align: right;"><input type="checkbox"/> YES <input type="checkbox"/> NO</td> </tr> <tr> <td>3.2. DOES THE ENTITY HAVE A BRANCH IN THE RSA?</td> <td style="text-align: right;"><input type="checkbox"/> YES <input type="checkbox"/> NO</td> </tr> <tr> <td>3.3. DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?</td> <td style="text-align: right;"><input type="checkbox"/> YES <input type="checkbox"/> NO</td> </tr> <tr> <td>3.4. DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?</td> <td style="text-align: right;"><input type="checkbox"/> YES <input type="checkbox"/> NO</td> </tr> <tr> <td>3.5. IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?</td> <td style="text-align: right;"><input type="checkbox"/> YES <input type="checkbox"/> NO</td> </tr> </table> <p>IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.</p>	3.1. IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?	<input type="checkbox"/> YES <input type="checkbox"/> NO	3.2. DOES THE ENTITY HAVE A BRANCH IN THE RSA?	<input type="checkbox"/> YES <input type="checkbox"/> NO	3.3. DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?	<input type="checkbox"/> YES <input type="checkbox"/> NO	3.4. DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?	<input type="checkbox"/> YES <input type="checkbox"/> NO	3.5. IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?	<input type="checkbox"/> YES <input type="checkbox"/> NO
3.1. IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?	<input type="checkbox"/> YES <input type="checkbox"/> NO									
3.2. DOES THE ENTITY HAVE A BRANCH IN THE RSA?	<input type="checkbox"/> YES <input type="checkbox"/> NO									
3.3. DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?	<input type="checkbox"/> YES <input type="checkbox"/> NO									
3.4. DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?	<input type="checkbox"/> YES <input type="checkbox"/> NO									
3.5. IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?	<input type="checkbox"/> YES <input type="checkbox"/> NO									

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

SIGNATURE OF BIDDER:

CAPACITY UNDER WHICH THIS BID IS SIGNED:

DATE:

MBD 2

TAX CLEARANCE CERTIFICATE REQUIREMENTS

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

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

MBD 3.1

PRICING SCHEDULE – FIRM PRICES (PURCHASES)

NOTE: ONLY FIRM PRICES WILL BE ACCEPTED. NON-FIRM PRICES (INCLUDING PRICES SUBJECT TO RATES OF EXCHANGE VARIATIONS) WILL NOT BE CONSIDERED

IN CASES WHERE DIFFERENT DELIVERY POINTS INFLUENCE THE PRICING, A SEPARATE PRICING SCHEDULE MUST BE SUBMITTED FOR EACH DELIVERY POINT

Name of Bidder.....	Bid Number.....
Closing Time	Closing Date

OFFER TO BE VALID FOR DAYS FROM THE CLOSING DATE OF BID.

ITEM NO.	QUANTITY	DESCRIPTION	BID PRICE IN RSA CURRENCY **(ALL APPLICABLE TAXES INCLUDED)
-	Required by:	
-	At:	
-	Brand and Model	
-	Country of Origin	
-	Does the offer comply with the specification(s)?		*YES/NO
-	If not to specification, indicate deviation(s)	
-	Period required for delivery	
-	Delivery basis	*Delivery: Firm/Not firm

Note: All delivery costs must be included in the bid price, for delivery at the prescribed destination.

** "all applicable taxes" includes value- added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies.

*Delete if not applicable

MBD 6.1

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

This preference form must form part of all tenders invited. It contains general information and serves as a claim form for preference points for specific goals.

NB: BEFORE COMPLETING THIS FORM, TENDERERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF THE TENDER AND PREFERENTIAL PROCUREMENT REGULATIONS, 2022

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to invitations to tender:

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2 To be completed by the organ of state

(delete whichever is not applicable for this tender).

- a) The applicable preference point system for this tender is the **90/10** preference point system.
- b) The applicable preference point system for this tender is the **80/20** preference point system.
- c) Either the **90/10 or 80/20 preference point system** will be applicable in this tender. The lowest/highest acceptable tender will be used to determine the accurate system once tenders are received.

1.3 Points for this tender (even in the case of a tender for income-generating contracts) shall be awarded for:

- (a) Price; and
- (b) Specific Goals.

1.4 To be completed by the organ of state:

The maximum points for this tender are allocated as follows:

	POINTS	POINTS
PRICE	80	90
SPECIFIC GOALS	20	10
Total points for Price and SPECIFIC GOALS	100	100

1.5 Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.

1.6 The organ of state reserves the right to require of a tenderer, either before a tender is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the organ of state.

2. DEFINITIONS

- (a) “**tender**” means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;
- (b) “**price**” means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts;
- (c) “**rand value**” means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;
- (d) “**tender for income-generating contracts**” means a written offer in the form determined by an organ of state in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the organ of state and a third party that produces revenue for the organ of state, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions; and
- (e) “**the Act**” means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

3.1.1 THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

A maximum of 80 or 90 points is allocated for price on the following basis:

$$\begin{array}{ccc}
 \mathbf{80/20} & \mathbf{or} & \mathbf{90/10} \\
 \mathbf{Ps = 80 \left(1 - \frac{Pt - P_{min}}{P_{min}} \right)} & \mathbf{or} & \mathbf{Ps = 90 \left(1 - \frac{Pt - P_{min}}{P_{min}} \right)}
 \end{array}$$

Where

- Ps = Points scored for price of tender under consideration
- Pt = Price of tender under consideration
- Pmin = Price of lowest acceptable tender

3.2. FORMULAE FOR DISPOSAL OR LEASING OF STATE ASSETS AND INCOME GENERATING PROCUREMENT

3.2.1. POINTS AWARDED FOR PRICE

A maximum of 80 or 90 points is allocated for price on the following basis:

$$\begin{array}{ccc}
 \mathbf{80/20} & \mathbf{or} & \mathbf{90/10} \\
 \mathbf{Ps = 80 \left(1 + \frac{Pt - P_{max}}{P_{max}} \right)} & \mathbf{or} & \mathbf{Ps = 90 \left(1 + \frac{Pt - P_{max}}{P_{max}} \right)}
 \end{array}$$

Where

- Ps = Points scored for price of tender under consideration
- Pt = Price of tender under consideration
- Pmax = Price of highest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

- 4.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 below as may be supported by proof/ documentation stated in the conditions of this tender:
- 4.2. In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of—
- (a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or
 - (b) any other invitation for tender, 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,
- then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

Table 1: Specific goals for the tender and points claimed are indicated per the table below

** Note to tenderers: The tenderer must indicate how they claim points for each preference point system.)*

The specific goals allocated points in terms of this tender	Number of points allocated (90/10 system) (To be completed by the organ of state)	Means of Verification	Number of points claimed (90/10 system) (To be completed by the tenderer)
1. Black owned Enterprises. (5 Points)	B-BBEE status level 1 = 5 points. B-BBEE status level 2 = 2 points. B-BBEE status level < 2 = 0 points	B-BBEE Certificate to be attached.	
2. Locality (3 Points)	<ul style="list-style-type: none"> • District Municipality = 2 points • North West Province = 1 point • Outside the Northwest Province = 0 Points 	Statement of Municipal Rates and Taxes of not older than Three Months must be attached.	
3. Enterprises owned 100% by women. Enterprises owned 100% by youth. (2 Points)	= 1 point = 1 point	Identity document/s	

DECLARATION WITH REGARD TO COMPANY/FIRM

4.3. Name of company/firm.....

4.4. Company registration number:

4.5. TYPE OF COMPANY/ FIRM

Partnership/Joint Venture / Consortium

One-person business/sole propriety

Close corporation

Public Company

Personal Liability Company

(Pty) Limited

Non-Profit Company

State Owned Company

[TICK APPLICABLE BOX]

4.6. I, the undersigned, who is duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the specific goals as advised in the tender, qualifies the company/ firm for the preference(s) shown and I acknowledge that:

- i) The information furnished is true and correct;
- ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 4.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct;
- iv) If the specific goals have been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the organ of state may, in addition to any other remedy it may have—

- (a) disqualify the person from the tendering process;
- (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
- (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
- (d) recommend that the tenderer or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and
- (e) forward the matter for criminal prosecution, if deemed necessary.

.....
SIGNATURE(S) OF TENDERER(S)

SURNAME AND NAME:

DATE:

ADDRESS:

.....

.....

FORM T2.2.26 - BRIEFING MEETING CERTIFICATE

As required by Clause 2.7 of the Tender Data, I/we certify that I/we have attended the compulsory site briefing and clarification meeting on the date certified below.

I/we further certify that I am / we are satisfied with the description of the Work and the explanations given by the Employer's Agent at the site visit and clarification meeting.

--	--

SIGNATURE OF TENDERER

DATE:

SITE VISIT

This will certify that _____

representing _____

attended a Site Inspection for this Contract on _____ 20 _____

--	--

FOR THE EMPLOYER'S AGENT

DATE:

END OF SECTION

Dr Ruth Segomotsi Mompoti District Municipality

CONTRACT RDM2024-008C

**KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 –
MOROKWENG**

(CONTRACT C)

AGREEMENTS AND CONTRACT DATA

INDEX

Section	Description	Page No
PART C1.1	FORMS OF OFFER AND ACCEPTANCE	C1.1.1
PART C1.2	CONTRACT DATA	C1.2.1
	Form of Guarantee	C1.2.16

END OF SECTION

Dr Ruth Segomotsi Mompoti District Municipality

CONTRACT RDM2024-008C

**KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 –
MOROKWENG**

(CONTRACT C)

FORM OF OFFER AND ACCEPTANCE

OFFER

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

Dr Ruth Segomotsi Mompoti District Municipality: Kagisano Molopo Regional Bulk Scheme: Cluster 6 - Morokweng.

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 authorised, signing this part of this form of offer and acceptance, the tenderer offers to perform all of the obligations and liabilities of the contractor under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the conditions of contract identified in the contract data.

The offered total of the Prices inclusive of Value Added Tax is :

RANDS.....

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

Signature(s) _____

Name(s) _____

Capacity _____

for the tenderer _____
(Name and address of organisation)

Name & signature
of witness _____ **Date** _____

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 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 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(s)	_____	_____
Name(s)	_____	_____
Capacity	_____	_____
for the Employer	_____	
	(Name and address of organisation)	
Name & signature		
of witness	_____	Date _____

SCHEDULE OF DEVIATIONS

Notes :

1. The extent of deviations from the tender documents issued by the employer before 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.

1. **Subject**

Details

2. **Subject**

Details

3. **Subject**

Details

4. **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 the amendments to the documents listed in the tender data and addenda thereto as listed in the tender schedules, as well as any confirmation, clarification or change to the terms of the offer agreed by the tenderer and 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.

END OF SECTION

Dr Ruth Segomotsi Mompoti District Municipality

CONTRACT RDM2024-008C

**KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 –
MOROKWENG (CONTRACT C)**

CONTRACT DATA

GENERAL CONDITIONS OF CONTRACT

The General Conditions of Contract for Construction Works, 3rd Edition (2015), published by the South African Institution of Civil Engineering, is applicable to this Contract.

The General Conditions of Contract are not bound into this document, but are available at the Contractor's expense from the Secretary of the South African Institution of Civil Engineering, Private Bag X200, Halfway House, Midrand, 1685 or www.saice.org.za.

CONTRACT SPECIFIC DATA

In terms of clause 1.1.1.8 of the General Conditions of Contract for Construction Works, 3rd Edition (2015), the following contract specific data, referring to the General Conditions of Contract for Construction Works, 3rd Edition (2015) apply to this Contract.

The Contract Data consists of two parts. Part 1 contains information provided by the Employer, while Part 2 contains information to be provided by the Contractor.

Part 1: Data Provided by the Employer

Clause	Contract Data
1.1.1.2	Add the following: "Schedule of Quantities" means the document so designated in the Pricing Data, and forming part of the written instruction by the Employer's Agent to the Contractor to execute the specified portion of works.
1.1.1.5	Add the following to the clause: The "Commencement Date" means the date on which the contractor receives a written instruction from the Employer to commence with a portion of the Works.
1.1.1.7	Add onto the word "parties" in the last sentence: "..... and shall include any written instruction by the Employer's Agent to the Contractor to execute any specified portion of the works."
1.1.1.10	"Contract Price" means the total estimated value of different portions of the works executed by the Contractor on instruction and approval by the Employer's Agent.
1.1.1.13	Add the following to the end of this definition: The Defects Liability Period shall be 365 days.
1.1.1.14	Add the following to the end of this definition: This clause shall apply <i>mutatis mutandis</i> to any portion or phase of the Works that may be described in the Scope of Works or in the Contract Data, or agreed subsequently between the Contractor and the Employer, and committed to writing. The time for completion of all works under this project shall be 18 months . The Employer also reserves the right to reallocate works to another Contractor, should the Contractor not perform adequately.
1.1.1.15	The Employer is Dr Ruth Segomotsi Mompoti District Municipality.
1.1.1.16	For this specific contract only, the word "Employer's Agent" means any Registered Professional appointed, generally or specifically by Dr Ruth Segomotsi Mompoti District Municipality to fulfil the functions of the Employer's Agent in terms of the Conditions of Contract.
1.1.1.25	"Pricing Data" means the document that contains the Schedule of Rates and provides the criteria and assumptions which it will be assumed in the Contract that were taken into account by the Contractor when developing his price.

Clause	Contract Data
1.1.1.26	The pricing strategy is Re-measurement Contract for each portions of works and/or instruction.
1.2.1	<p>Add the following to the clause:</p> <p>1.2.1.3 Sent by facsimile, electronic or any like communication irrespective of it being during office hours or otherwise.</p> <p>1.2.1.4 Posted to the Contractor's address, and delivered by the postal authorities.</p> <p>1.2.1.5 Delivered by a courier service, and signed for by the recipient or his representative.</p>
1.2.1.2	<p>The address of the Employer is:</p> <p>Dr Ruth Segomotsi Mompoti District Municipality 34 Church Street Vryburg 8601 Tel: 053 928 4700</p> <p>The address and telephone number of the Employer's Agent is:</p> <p>- Tsela Tsweu Consulting Engineers 1 Petrus Bosch Street Welkom 9460 Tel: 057 352 7992</p>
1.3.6	<p>Replace this clause with:</p> <p>The copyright in all documents, drawings and records (prepared by the Employer's Agent) related in any manner to the Works shall vest in the Employer or the Employer's Agent or both (according to the dictates of the Contract that has been entered into by the Employer's Agent and the Employer for the Works), and the Contractor shall not furnish any information in connection with the Works to any person or organisation without the prior approval of the Employer to this effect.</p>
3.1.1	<p>Add the following words into to the sentence....</p> <p>..... <i>"shall be a registered professional in a built environment profession with a minimum of 10 years' experience that is appropriate to"</i></p>
3.2.3	The Employer's Agent is, in terms of his appointment by the Employer for the design and administration of the Works included in the Contract, required to

Clause	Contract Data
	<p>obtain the specific approval of the Employer for the execution of the following duties:</p> <p>3.2.3.1 The issuing of an order to suspend the progress of the Works, the extra cost resulting from which order is to be borne by the Employer in terms of Clause 5.11 or the effect of which is liable to give rise to a claim by the Contractor for an extension of time under Clause 5.12 of these conditions.</p> <p>3.2.3.2 The issuing of an instruction or order to vary the nature or quantity of the Works in terms of Clause 6.3, the estimated effect of which will be to increase the Contract Price by an amount exceeding R50 000, the valuation of all variation orders in terms of Clause 6.4 and the adjustment of the sum(s) tendered for General Items in terms of Clause 6.11.</p> <p>3.2.3.3 The approval of any claim submitted by the Contractor in terms of Clause 10.1.</p>
4.1.2	<p>Add the following to the clause:</p> <p>The Contractor shall provide the following to the Employer's Agent for retention by the Employer or his assignee in respect of all works designed by the Contractor:</p> <p>4.1.2.1 a Certificate of Stability of the Works signed by a registered Professional Employer's Agent confirming that all such works have been designed in accordance with the appropriate codes of practice.</p> <p>4.1.2.2 proof of registration and of adequate and current professional indemnity insurance cover held by the designer(s).</p> <p>4.1.2.3 design calculations should the Employer's Agent request a copy thereof.</p> <p>4.1.2.4 engineering drawings and workshop details (both signed by the relevant professional engineer), in order to allow the Employer's Agent to compare the design with the specified requirements and to record any comments he may have with respect thereto.</p> <p>4.1.2.5 "As-Built" drawings in DXF electronic format after completion of the Works.</p> <p>The Contractor shall be responsible for the design of the Temporary Works.</p>
4.3.3	<p>Add the following new clause:</p> <p>The Ministerial Determination, Special Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1977 by the Minister of Labour in Government Notice No R63 of 25 January 2002, shall apply to works described in the Scope of Work as being labour intensive and which are undertaken by unskilled or semi-skilled workers.</p>
4.3.4	<p>Add the following new clause:</p>

Clause	Contract Data
	<p>The Contractor shall comply with the Occupational Health and Safety Specification prepared by the Employer in terms of the Construction Regulations, 2014 promulgated in terms of Section 43 of the Occupational Health and Safety Act (Act No. 85 of 1993).</p> <p>Without limiting the Contractor's obligations in terms of the Contract, the Contractor shall before commencement of the Works or any part thereof, be in the possession of an approved Health and Safety Plan.</p> <p>The Contractor shall submit an approved Health and Safety Plan to the Employer's Agent within 14 days from the date that the Agreement made in terms of the Form of Offer and Acceptance comes into effect.</p>
4.3.5	<p>Add the following new clause:</p> <p>Contractor's liability as mandatory</p> <p>Notwithstanding any actions which the Employer may take, the Contractor accepts sole liability for due compliance with the relevant duties, obligations, prohibitions, arrangements and procedures imposed by the Occupational Health and Safety Act, 1993 (Act 85 of 1993), and all its regulations, including the Construction Regulations, 2014, for which he is liable as mandatory. By entering into this Contract it shall be deemed that the parties have agreed in writing to the above provisions in terms of Section 37 (2) of the Act.</p>
4.3.6	<p>Add the following new clause:</p> <p>Contractor to notify Employer</p> <p>The Employer retains an interest in all inquiries conducted under this Contract in terms of Section 31 and/or 32 of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and its Regulations following any incident involving the Contractor and/or Sub-Contractor and/or their employees. The Contractor shall notify the Employer in writing of all investigations, complaints or criminal charges which may arise pursuant to work performed under this Contract in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and Regulations.</p>
4.3.7	<p>Add the following new clause:</p> <p>Contractor's Designer</p> <p>The Contractor and his designer shall accept full responsibility and liability to comply with the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and the Construction Regulations, 2014 for the design of the Temporary Works and those part of the Permanent Works which the Contractor is responsible to design in terms of the Contract.</p>

Clause	Contract Data
4.4.3	<p>Add the following to the clause:</p> <p>.... Any electrical sub-contractor of the main contractor must be registered with Eskom and must be an accredited electrician who will be able to submit a COC on completion of specific work done.</p>
4.4.4	<p>Add the following to the clause:</p> <p>.... 30 % of the construction amount should be spend locally within the DRSM DM project areas. The cost of local labour, local sub-contractors and local suppliers will form part of the 30%.</p>
4.10.3	<p>Add the following new clause:</p> <p>The Contractor shall use local labour in accordance with the requirements contained within the Scope of Work.</p>
5.3.1	<p>Add the following:</p> <p>The documentation required before commencement with Works Execution are:</p> <ul style="list-style-type: none"> • Health and Safety Plan (Refer to Clause 4.3) • Initial Programme (Refer to Clause 5.6) • A detailed cashflow forecast (Refer to Clause 5.6.2.6) • Security (Refer to Clause 6.2) • Insurance (Refer to Clause 8.6)
5.3.2	<p>Add the following:</p> <p>The time to submit the documentation required (Refer to Clause 5.3.1) before commencement with Works execution is 14 days.</p>
5.4.2	<p>The access and possession of Site shall not be exclusive to the Contractor but as set out in the site information.</p>
5.6.1	<p>Add the following to the clause:</p> <p>In this regard the Contractor shall have regard for the phases and sub-phases (if applicable) for the Development, which shall also be the order in which the Permanent Works shall be constructed, unless otherwise agreed between the parties and committed to writing. If phased construction is applicable, the phases and sub-phases will be described in the Specifications and/or will be indicated on the Phasing Plan which forms part of the Drawings.</p>
5.8.1	<p>The non-working days are Sundays.</p>

Clause	Contract Data
	Special non-working days shall be all South African Statutory holidays and the official building holidays commencing on 16 December and ending 5 January.
5.12.5	<p>Add the following new clause:</p> <p>Extension of time due to Abnormal Rainfall</p> <p>Extension of time for completion of the Contract shall be allowed in the event of abnormal rainfall in accordance with the following formula:</p> $V = (N_w - N_n) + (R_w - R_n)/20$ <p>Where:</p> <p>V = Extension of time in calendar days for the calendar month under consideration</p> <p>N_w = Actual number of days during the calendar month under consideration on which a rainfall of 10mm and more is recorded</p> <p>R_w = Actual total rainfall in mm recorded during the calendar month under consideration</p> <p>N_n = Average number of days, derived from rainfall records, on which a rainfall of 10mm and more was recorded during the relevant calendar month as per the data tabulated hereinafter</p> <p>R_n = Average total rainfall in mm for the relevant calendar month, derived from rainfall records, as tabulated hereinafter</p> <p>Where the extension of time due to abnormal rainfall has to be calculated for portion of a calendar month, pro rata values shall be used. Should V be negative for any particular month, and should its absolute value exceed the corresponding value of N_n, then V shall be taken as being equal to minus N_n. The total extension of time to be granted shall be the algebraic sum of all the monthly extensions, provided that if this total is negative then the time for completion shall not be reduced due to subnormal rainfall.</p> <p>Rainfall records for the period of construction shall be taken on Site. The Contractor shall provide and install all the necessary equipment for accurately measuring the rainfall. The Contractor shall also provide, erect and maintain a security fence plus gate, padlock and keys at each measuring station, all at his own cost. The Employer's Agent or his Representative shall take and record the daily rainfall readings. The Contractor shall be permitted to attend these readings, in the company of the Employer's Agent's Representative. Access to the measuring gauge(s) shall at all times be under the Employer's Agent's control.</p>

Clause	Contract Data																																										
	<p>The rainfall records applicable to this Contract are those recorded at Weather Station Vryburg. The following values of N_n and R_n shall apply:</p> <table><tr><th>Month</th><th>R_n (mm)</th><th>N_n (days)</th></tr><tr><td>January</td><td>117</td><td>4</td></tr><tr><td>February</td><td>83</td><td>2.5</td></tr><tr><td>March</td><td>74</td><td>2.4</td></tr><tr><td>April</td><td>57</td><td>1.8</td></tr><tr><td>May</td><td>14</td><td>0.5</td></tr><tr><td>June</td><td>5</td><td>0.2</td></tr><tr><td>July</td><td>3</td><td>0.1</td></tr><tr><td>August</td><td>5</td><td>0.1</td></tr><tr><td>September</td><td>13</td><td>0.4</td></tr><tr><td>October</td><td>37</td><td>1.0</td></tr><tr><td>November</td><td>64</td><td>1.7</td></tr><tr><td>December</td><td>67</td><td>2.1</td></tr><tr><td>Total</td><td>539</td><td>16,8</td></tr></table>	Month	R _n (mm)	N _n (days)	January	117	4	February	83	2.5	March	74	2.4	April	57	1.8	May	14	0.5	June	5	0.2	July	3	0.1	August	5	0.1	September	13	0.4	October	37	1.0	November	64	1.7	December	67	2.1	Total	539	16,8
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5.13.1	The penalty for failing to complete the Works is R5 000/day per phase of works and/or Employer's Agent's instruction.																																										
5.13.3	<p>Add the following new Clause.</p> <p>The imposition of penalties in terms of Clause 5.13.1 shall not relieve the Contractor from his obligation to complete the works, nor from any of his obligations and liabilities under the Contract.</p>																																										
5.13.4	<p>Add the following new Clause:</p> <p>If the Contractor shall, without the prior written permission of the Employer's Agent, in respect of any portions of the Works which are prescribed in the Scope of Work to be executed using labour intensive construction methods, or for which the maximum size and capacity of mechanical plant and equipment is restricted in terms of the Contract:</p> <ul style="list-style-type: none">• fail to execute such portions of the Works, or any parts thereof, utilising labour-intensive construction methods strictly in accordance with the provisions of the Contract; or• utilise in the execution of such portions of the Works, or any parts thereof, mechanical plant or equipment which is in conflict with the terms of the Contract; or																																										

Clause	Contract Data
	<ul style="list-style-type: none"> utilise in the execution of such portions of the Work, workers drawn from sources other than those allowed in terms of the Contract; <p>then the Contractor shall be liable to the Employer for the percentage stated below of the value of the Works so executed in conflict with the provisions of the relevant Scope of Work, as a penalty for non-compliance.</p> <p>The penalty for non-compliance is: 15% of the value of Works specified.</p> <p>The imposition of penalties in terms of this clause shall not relieve the Contractor from his obligation to complete the Works, nor from any of his obligations and liabilities under the Contract.</p>
5.16.3	The Latent defect period is 10 years after the issue of the Final Approval Certificate in terms of Clause 5.16.1
6.1.1	<p>Add the following to the clause:</p> <p>Payment for works identified in the Scope of Work as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the Scope of Work. Any non-payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict.</p>
6.2.1	<p>Add the following to this Clause:</p> <p>The amount of the Surety will be 10% of the Tender Offer at the time that the Agreement comes into effect. The guarantee shall remain valid until the issue of the Certificate or Certificates of Completion in respect of the whole of the Permanent Works. The Pro Forma Form of Guarantee bound into the General Conditions of Contract is replaced by the Form of Guarantee (Deed of Suretyship) is appended to the Contract Data.</p> <p>This approval or otherwise shall be based upon legal opinion to be provided by the Employer's Agent.</p>
6.8.2	The application of a Contract Price Adjustment factor will apply to this Contract.
6.8.3	Price Adjustments for variations in the cost of special materials is not allowed.
6.8.4	In line 6 delete the words "between the Employer and the Contractor".
6.10.1.5	The percentage advance on materials not yet built into the Permanent Works is 80%.
6.10.3	The percentage retention is 10% of a payment claim up to a maximum of 5% of the total construction value per Works Instruction.

Clause	Contract Data
6.10.4	In line four, delete the word "said" and insert the word "correct".
6.11.1.3	Delete this clause in total.
8.6.1.3	The limit of indemnity for liability insurance is R10 000 000 per event, the number of events being unlimited.
9.2.1.3.5	Add the following to this Clause: ... or is find to deliver poor performance in the execution of the scope of work or any part thereof,
10.5.3	The number of Adjudication Board Members to be appointed is 1 (one).

CONTRACT PRICE ADJUSTMENT SCHEDULE	
Clause	Contract Data
1.	<p>The application of a Contract Price Adjustment factor will apply to this Contract. The price adjustment formula provided in the General Conditions of Contract will apply, together with the following coefficients and the definition of the relevant indices indicated below;</p> <p>X=0,15 a=0,15 b=0,20 c=0,55 d=0,10</p>
2.	<p>Replace the definitions of the relevant indices with the following:</p> <p>"L" is the "Labour Index" and shall be the "Consumer Price Index" for the urban area of North West as published in the Consumer Price Index Statistical Release PO 141.1 (Table 7.1 – Consumer Price Index and percentage change according to Urban Area) of Statistics South Africa.</p> <p>"P" is the "Plant Index" and shall be the "Civil Engineering Plant" index as published in the Production Price Index Statistical Release PO 142.1 (Table 12 – Price Index for selected materials) of Statistics South Africa.</p> <p>"M" is the "Materials Index" and shall be the "Civil Engineering" index as published in the Production Price Index Statistical Release PO 142.1 (Table 11 – Production Price for materials used in certain industries) of Statistics South Africa.</p> <p>"F" is the "Fuel Index" and shall be the "Diesel oil – Coast and Witwatersrand" index as published in the Production Price Index Statistical Release PO 142.1 (Table 12 – Production Price Index for selected materials) of Statistics South Africa.</p>

Part 2: Data provided by the Contractor

Clause	Contract Data						
1.1.1.9	<p>The name of the Contractor is:</p> <hr/> <hr/>						
1.2.1.2	<p>The address of the Contractor is:</p> <hr/> <hr/>						
6.2.1	<p>The security to be provided by the Contractor shall be one of the following:</p> <table border="1"> <thead> <tr> <th>Type of Security</th><th>Contractor's choice. Indicate "Yes" or "No"</th></tr> </thead> <tbody> <tr> <td>Cash deposit of 10% of tender offer</td><td></td></tr> <tr> <td>Performance guarantee of 10% of tender offer</td><td></td></tr> </tbody> </table>	Type of Security	Contractor's choice. Indicate "Yes" or "No"	Cash deposit of 10% of tender offer		Performance guarantee of 10% of tender offer	
Type of Security	Contractor's choice. Indicate "Yes" or "No"						
Cash deposit of 10% of tender offer							
Performance guarantee of 10% of tender offer							

END OF SECTION

Dr Ruth Segomotsi Mompoti District Municipality

CONTRACT RDM2024-008C

**KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 –
MOROKWENG**

(To be supplied on the
official letterhead
of "The Bank/Company")

PERFORMANCE GUARANTEE

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

GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means:
Physical address:
.....

"Employer" means: Dr Ruth Segomotsi Mompoti District Municipality

"Contractor" means:

"Employer's Agent" means:

"Works" means: **CONTRACT NO. RDM2024-008C: Kagisano Molopo Regional Bulk
Scheme: Cluster 6 – Morokweng (Contract C)**

"Site" means: **Any village / community within the Kagisano Molopo Cluster 6 -
Morokweng area.**

"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 Contract Amount in terms of the Form of Offer and
Acceptance at the time that the agreement comes into effect.

Amount in words: Contract Sum written out in words.

"Guaranteed Sum" means: The maximum aggregate amount of 10% of the Contract Amount at the time that the agreement comes into effect.

Amount in words: Guaranteed Sum written out in words.

"Expiry Date" means: 14 Days after receipt of Certificate of Completion.

CONTRACT DETAILS

Employer's Agent Issues: Interim Payment Certificates, Final Payment Certificate and the Certificate of Completion of 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 Employer's Agent of the Certificate of Completion of the Works or the date of payment in full of the Guaranteed Sum, whichever occurs first. The Employer's Agent and/or the Employer shall advise the Guarantor in writing of the date on which the Certificate of Completion of the Works has been issued.
3. The Guarantor hereby acknowledges that:
 - 3.1 any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship;
 - 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:
 - 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 Employer's Agent 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 calculate from the date payment was made by the Guarantor to the Employer until the date of refund.
8. Payment by the Guarantor in terms of 4 and 5 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.
9. Payment by the Guarantor in terms of 5 will only be made against the return of the original Performance Guarantee to 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 this performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.
11. The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.
12. This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.
-

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

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

Signed on this _____ day of _____ 20____

at _____ (place)

Guarantor's Signatory

1. _____
Signature Name

Capacity

2. _____
Signature Name

Capacity

As Witnesses:

1. _____
Signature Name

2. _____
Signature Name

END OF SECTION

Dr Ruth Segomotsi Mompoti District Municipality

CONTRACT RDM2024-008C

**KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 –
MOROKWENG (CONTRACT C)**

PRICING DATA

INDEX

Section	Description	Page No
PART C2.1	PRICING INSTRUCTIONS	
1.	General	C2.1.1
2.	Pay Items.....	C2.1.1
3.	Quantities.....	C2.1.2
4.	Rates.....	C2.1.3

PART C2.2 SCHEDULE OF RATES

SECTION	DESCRIPTION
1	SCHEDULE 1: GENERAL
2	SCHEDULE 2: PROVISIONAL SUMS and PRIME COST ITEMS
3	SCHEDULE 3: DAYWORKS
4	SCHEDULE 4: TRENCHES (GRAVITY MAIN)
5	SCHEDULE 5: PIPE WORK (GRAVITY MAIN)
6	SCHEDULE 6 : ELEVATED TANKS
7	SCHEDULE 7 : SECURITY FENCING
8	SCHEDULE 8 : HEALTH AND SAFETY

END OF SECTION

Dr Ruth Segomotsi Mompoti District Municipality

Dr Ruth Segomotsi Mompoti District Municipality
Rural Water Supply Programme

CONTRACT RDM2024-008C

KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 – MOROKWENG

PRICING INSTRUCTIONS

1. GENERAL

These pricing instructions provide the Tenderer with guidelines and requirements with regard to the completion of the Schedule of Rates. These pricing instructions also describe the criteria and assumptions which will be assumed in the Contract to have been taken into account by the Tenderer when developing his prices.

The Schedule of Rates shall be read with all the documents which form part of this Contract.

The following words have the meaning hereby assigned to them:

Unit	: The Unit of measurement for each item of work in terms of the Scope of Work.
Quantity	: The number of units for each item.
Rate	: The payment per unit of work at which the tenderer tenders to do the work.
Amount	: The product of the quantity and the rate tendered for an item.
Lump sum (L.Sum)	: An amount tendered for an item, the extend of which is described in the Pricing Instructions, Schedule of Rates or the Scope of Work but the quantity of work of which is not measured in any units.

2. PAY ITEMS

The method of measurement published by the South African Bureau of Standards in Clause 8 of the Standardised Specifications for Civil Engineering Construction (SANS 1200) is applicable, subject to the variations and amendments contained in section C3.4.2.

Descriptions in the Schedule of Rates are abbreviated and comply generally with those in the Standard Specifications. The measurement and payment clause of each Standard Specification, read together with the relevant clauses of the Scope of Work, set out what ancillary or associated activities are included in the rates for the operations specified. Should any requirements of the measurement and payment clause of the applicable Standard

Specification, or the Scope of Work, conflict with the terms of the Schedule of Rates, the requirements of the Standard Specification or Scope of Work, as applicable, shall prevail.

The units of measurement described in the Schedule of Rates are metric units. Abbreviations used in the Schedule of Rates are as follows:

mm	=	millimetre	h	=	hour
m	=	metre	kg	=	kilogram
km	=	kilometre	t	=	ton (1000kg)
m ²	=	square metre	No.	=	number
m ² .pass	=	square metre pass	sum	=	lump sum
ha	=	hectare	MN	=	meganewton
m ³	=	cubic metre	MN.m	=	meganewton-metre
m ³ .km	=	cubic metre-kilometre	PC sum	=	Prime Cost Sum
l	=	litre	Prov sum	=	Provisional sum
kl	=	kilolitre	%	=	per cent
MPa	=	megapascal	kW	=	kilowatt
Pa	=	kilopascal	wt	=	wall thickness
w/day	=	workday	dia	=	diameter
BH	=	borehole	R/only	=	rate only

3. QUANTITIES

- 3.1 Quantities will be measure during the execution of the work. The quantities finally accepted and certified for payment and not the quantities given in the Schedule of Quantities, shall be used to determine payments to the Contractor.
- 3.2 The Works as finally completed in accordance with the Contract shall be measured and paid for as specified in the Schedule of Quantities and in accordance with the General and Special Conditions of Contract, the Standard Specifications and Project Specifications and the Drawings. Unless otherwise stated, items are measured net in accordance with the Drawings, and no allowance has been made for waste.
- 3.3 The validity of the contract will in no way be affected by differences between the quantities in the Schedule of Quantities and the quantities finally certified for payment.

4. RATES

- 4.1 The prices and rates to be inserted in the Schedule of Quantities are to be full inclusive prices for the work described under the numerous items. Such prices and rates shall cover all costs and expenses that may be required in and for the execution of the work described, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the documents on which the tender is based, as well as overhead charges and profit. Reasonable prices shall be

inserted as these will be used as a basis for assessment of payment for additional work that may have to be carried out.

- 4.2 A price or rate is to be entered against each item in the Schedule of Quantities, whether the quantities are stated or not. An item against which no price is entered or where a word or phrase such as "included" or "provided elsewhere" will be accepted as a rate of nil (R0,00) having been entered against such items and covered by the other prices or rates in the schedule.

Any work executed to which such a pay item applies, shall be measured under the appropriate items in the Schedule of Quantities and valued at a rate of nil (R0,00). The rate of nil shall be valid irrespective of any change in the quantities during the execution of the Contract.

- 4.3 The Tenderer shall fill in a rate against all items where the words "rate only" appears in the amount column. The intention is that, although no work is foreseen under such item and no quantities are consequently given in the quantity column, the tendered rate shall apply should work under this item be actually required.
- 4.4 Except where rates only are required, the Tenderer shall insert all amounts to be included in his total tendered price in the "Amount" column and show the corresponding total tendered price.
- 4.5 The Tenderer shall not group together a number of items and tender one rate for such group of items.
- 4.6 All rates and sums of money quoted in the Schedule of Quantities shall be in Rands and whole cents. Fractions of a cent shall be discarded.
- 4.7 All prices and rates entered in the Schedule of Quantities must be **excluding Value Added Tax (VAT)**. VAT will be added last on the summary page of the Schedule of Quantities.
- 4.8 Should excessively high unit prices be tendered, such prices may be of sufficient importance to warrant rejection of a tender by the Employer.
- 4.9 Where the Contractor is required to furnish detailed drawings and designs or other information in terms of the Contract Documents, all costs thereof shall be deemed to have been provided for and included in the unit rates and sum amounts tendered for the items scheduled in the Schedule of Quantities, and separate additional payments will not be made.

END OF SECTION

SCHEDULE 1: GENERAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
1		SCHEDULE 1: GENERAL				
1.1	8.3	FIXED-CHARGED ITEMS				
	8.3.1	Contractual Requirements				
1.1.1		Contractual requirements including all sureties and insurances	Sum	1.00		
	8.3.2	Establish Facilities on the Site:				
	8.3.2.1	a) Facilities for Engineer (SABS 1200 AB) (PSAB)				
1.1.2	PSAB 1	i) Project Nameboards (2024-08/G/D/003)	No.	2.00		
1.1.3	PSAB 2	ii) Furnished office - Main Camp Site (As per drawing 2024-08/G/E/001)	Sum	1.00		
1.1.4	PSAB 3	iii) Telephone	Sum	1.00		
1.1.5	PSAB 4	iv) Personal Computer	Sum	1.00		
1.1.6	PSAB 7	v) Carports	Sum	1.00		
1.1.7		vi) Laboratory equipment as per PSAB 9	Sum	1.00		
1.1.8	PSAB 8	vii) Digital Camera	Sum	1.00		
	8.3.2.2	b) Facilities for Contractor				
1.1.9		i) Offices and storage sheds	Sum	1.00		
1.1.10		ii) Workshops	Sum	1.00		
1.1.11		iii) Living accommodation	Sum	1.00		
1.1.12		iv) Ablution and latrine facilities	Sum	1.00		
1.1.13		v) Tools and equipment	Sum	1.00		
1.1.14		vi) Water, Electric power and Communications	Sum	1.00		
1.1.15		vii) Dealing with water	Sum	1.00		
1.1.16		viii) Access	Sum	1.00		
1.1.17		ix) Plant	Sum	1.00		
	8.3.3	Other fixed charge obligations				
1.1.18		All other fixed charge and obligations	Sum	1.00		
1.1.19	8.3.4	Removal of site establishment and cleaning of construction site	Sum	1.00		
1.1.20	PSA 18.1	Health and Safety Compliance with Occupational Health and Safety Act	Sum	1.00		
1.1.21	PSA 19.1	Environmental Management Plan	Sum	1.00		
Total Carried Forward						

SCHEDULE 1: GENERAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.2	8.4	TIME-RELATED ITEMS				
1.2.1	8.4.1	Contractual Requirements	Month	18.00		
1.2.2		Contractual requirements including all sureties and insurances	Month	18.00		
	8.4.2	Operate and maintain facilities on the Site:				
	8.4.2.1	a) Facilities for Engineer for the duration of Construction (SABS1200AB) (PSAB)				
1.2.3	PSAB 1	i) Project Nameboards	Month	18.00		
1.2.4	PSAB 2	ii) Furnished Office	Month	18.00		
1.2.5	PSAB 3	iii) Telephone	Month	18.00		
1.2.6	PSAB 4	iv) Personal Computer	Month	18.00		
1.2.7	PSAB 7	vii) Carport	Month	18.00		
1.2.8		vi) Laboratory equipment as per PSAB 9	Month	18.00		
1.2.9	PSAB 8	ix) Digital Camera	Month	18.00		
	8.4.2.2	b) Facilities for Contractor for duration of construction, except where otherwise stated				
1.2.10		i) Offices and storage sheds	Month	18.00		
1.2.11		ii) Workshops	Month	18.00		
1.2.12		iii) Laboratories	Month	18.00		
1.2.13		iv) Living accommodation	Month	18.00		
1.2.14		v) Ablution and latrine facilities	Month	18.00		
1.2.15		vi) Tools and equipment	Month	18.00		
1.2.16		vii) Water supplies, electric power and communications	Month	18.00		
1.2.17		viii) Dealing with water	Month	18.00		
1.2.18		ix) Access	Month	18.00		
1.2.19		x) Plant	Month	18.00		
1.2.20	8.4.3	Supervision for duration of the construction	Month	18.00		
1.2.21	8.4.4	Company and head office overhead costs for the duration of the contract	Month	18.00		
Total Carried Forward						

SCHEDULE 1: GENERAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.2.22	8.4.5	Other time related obligations. All other time related obligations, including custody of drawings and programme to be furnished	Month	18.00		
1.2.23	PSA 18.2	Health and Safety Compliance with Occupational Health and Safety Act	Month	18.00		
1.2.24	PSA 19.2	Compliance with Environmental Management Plan	Month	18.00		
1.3	8.8	TEMPORARY WORKS				
	8.8.3	Protection of Property				
1.3.1		Closing of all gates and protection of property of every description which may have been entered upon.	Sum	1.00		
	8.8.4	Existing services				
1.3.2		Excavate by hand in soft material to expose service. (Provisional)	m³	24.00		
1.3.3		Temporary protection as required in terms of Project Specifications	Sum	1.00		
		Land Survey Act				
1.3.4		Protect and re-establish trigonometrical survey and erf boundary pegs	Sum	1.00		
1.3.5		Compliance with Environmental Management Plan	Sum	1.00		
Total Carried Forward To Summary						

SCHEDULE 2: PROVISIONAL SUMS and PRIME COST ITEMS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
2		SCHEDULE 2: PROVISIONAL SUMS and PRIME COST ITEMS				
2.1		SUM STATED PROVISIONALLY BY THE ENGINEER				
2.1.1	PSA 11.3	Materials to be used during execution of dayworks	Prov Sum	1.00		100 000
2.1.2		Percentage adjustment to Item 2.1.1 to cover Contractor's expenses with regard to item	%	100 000.00		
2.1.3	PSA 11.4	Royalties for Borrow Materials	Prov Sum	1.00		10 000
2.1.4		Percentage adjustment to Item 2.1.3 to cover Contractor's expenses with regard to item	%	10 000.00		
2.2		PRIME COST ITEMS				
2.2.1	PSA 12.2	Salary for Labour Desk Officer	PC Sum	1.000		144 000
2.2.2		Percentage adjustment to Item 2.2.1 to cover Contractor's expenses with regard to item	%	144 000.00		
2.2.3	PSAB 3	Telephone Calls and Rental for the Engineer's Representative	PC Sum	1.00		27 000
2.2.4		Percentage adjustment to Item 2.2.3 to cover Contractor's expenses with regard to item	%	27 000.00		
2.2.5	PSA 12.1	Acceptance Control Testing	PC Sum	1.00		75 000
2.2.6		Percentage adjustment to Item 2.2.5 to cover Contractor's expenses with regard to item	%	75 000.00		
2.2.7	PSA 12.4	Office Consumables for Engineer's Site Facility	PC Sum	1.00		45 000
2.2.8		Percentage adjustment to Item 2.2.7 to cover Contractor's expenses with regard to item	%	45 000.00		
2.2.9	PSA 12.9	Accommodation for Employer's Agent's Representative	PC Sum	1		225 000
2.2.10		Percentage adjustment to Item 2.2.9 to cover Contractor's expenses with regard to item	%	225 000		
2.2.11	PSA 12.8	Relocation of Existing Services	PC Sum	1.00		50 000
2.2.12		Percentage adjustment to Item 2.2.11 to cover Contractor's expenses with regard to item	%	50 000.00		
2.2.13	PSA 12.7	Specialized Services	PC Sum	1.00		150 000
Total Carried Forward						

SCHEDULE 2: PROVISIONAL SUMS and PRIME COST ITEMS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
2.2.14	PSA 12.10	Percentage adjustment to Item 2.2.13 to cover Contractor's expenses with regard to item	%	150 000.00		
2.2.15		Management of approved emerging local sub-contractors	PC Sum	1	25 000 000.00	
2.2.16		Percentage adjustment to Item 2.2.15 to cover Contractor's expenses with regard to item	%	25 000 000		
Total Carried Forward To Summary						

SCHEDULE 3: DAYWORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
3		SCHEDULE 3: DAYWORKS				
3.1		DAYWORKS LABOUR				
3.1.1		a) Contractors Representative	hr	10.00		
3.1.2		b) Surveyor	hr	10.00		
3.1.3		c) Qualified artisan	hr	10.00		
3.1.4		d) Electrician	hr	10.00		
3.1.5		e) Foreman, leader hand (.....hr/work day)	W/Da y	10.00		
3.1.6		f) Semi-skilled labourer (.....hr/work day)	W/Da y	20.00		
3.1.7		g) Labourer (.....hr/work day)	W/Da y	10.00		
3.2		PLANT HIRE: WORKS ON SITE				
		Tipper truck (specify capacity)				
3.2.1		a) _____m ³ (small)	hr	10.00		
3.2.2		b) _____m ³ (large)	hr	10.00		
		Flat bed truck (specify capacity)				
3.2.3		a) _____ton (small)	hr	10.00		
3.2.4		b) _____ton (large)	hr	10.00		
3.2.5		LDV (Light delivery vehicle	km	100.00		
3.2.6		Wheel loader:.....m ² bucket (specify type).....	hr	10.00		
		Bulldozer				
3.2.7		a) _____(small)	hr	10.00		
		Excavator				
3.2.8		a) Tractor Loader Backhoe (TLB)	hr	10.00		
3.2.9		b) Backactor excavator_____m ³ bucket (PC 220 or Similar)	hr	10.00		
		Compactor				
3.2.10		a) _____(6000 kg applied force)	hr	10.00		
3.2.11		b) _____(3000 kg applied force)	hr	10.00		
		Water Tanker (Specify capacity)				
Total Carried Forward						

SCHEDULE 3: DAYWORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
3.2.12		a) _____(small towable)	hr	10.00		
3.2.13		b) _____(large)	hr	10.00		
		Concrete mixer (Specify capacity)				
3.2.14		a) _____(small towable)	hr	10.00		
3.2.15		b) _____(large)	hr	10.00		
		Miscellaneous				
3.2.16		a) Compressor with capacity of approximate 10.m ² /min	hr	10.00		
3.2.17		b) Water pump with 80mm outlet diesel driven	hr	10.00		
3.2.18		c) Tractor_____ (Small) (Specify type)	hr	10.00		
3.2.19		d) Trailer_____ (Large) (Specify type)	hr	10.00		
3.3		PLANT HIRE: TRANSPORT COST TO AND FROM SITE				
3.3.1		Low Bed (suitable for the largest piece of equipment above)	km	100.00		
		Tipper truck				
3.3.2		a) Small	km	10.00		
3.3.3		b) Large	km	10.00		
		Flat bed truck				
3.3.4		a) Small	km	10.00		
3.3.5		b) Large	km	10.00		
		Water Tanker				
3.3.6		a) Small (towable)	km	10.00		
3.3.7		b) Large	km	10.00		
		Concrete mixer				
3.3.8		a) Small	km	10.00		
3.3.9		b) Large	km	10.00		
Total Carried Forward To Summary						

SCHEDULE 4: TRENCHES (GRAVITY MAIN)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
4		SCHEDULE 4: TRENCHES (GRAVITY MAIN)				
4.1	SABS 1200 C	SITE CLEARANCE				
4.1.1	8.2.1	Clearing and grubbing where necessary, 3m wide (Provisional)				
		a) Clear and grub all rubble of any nature, trees and tree stumps of any size including existing fences and temporary structures along the route for the water pipe line (PSC)	m	54 380		
4.2	SABS 1200 DB	EXCAVATION (Provisional)				
	8.3.2(a)	Excavate in all materials for trenches 0-1m wide backfill, compact, testing and dispose of surplus / unsuitable material, within the freehaul distance (PSDB1, PSDB2, PSDB7, PSDB9, PSDB10, PSDB11 and PSDB12)				
4.2.1		up to 1.5 m in depth	m³	72 245		
4.2.2	8.3.2(b)	Extra over items 4.2 incl. for: (Provisional)				
		(i) Intermediate material excavation (PSDB1) and (PSDB12)	m³	6 220		
4.2.2.2		(ii) Hard rock excavation (PSDB1) and (PSDB12)	m³	60 205		
4.2.2.3	8.3.2(c)	Hand Excavate and dispose of unsuitable material from trench bottom within the free haul distance (Provisional) (PSDB6)	m³	4 105		
4.3		EXCAVATION ANCILLARIES Make up deficiency in backfill material (Provisional)				
4.3.1	8.3.3.1(a)	From other necessary excavations on site	m³	9 730		
4.3.2	8.3.3.1(b)	By importation from borrow pit(s) (Identified by the contractor, including all royalties and haulage) (PSDA1 & PSDA2)	m³	35 220		
4.3.3	8.3.3.1(c)	By importation from commercial or off- site sources selected by the Contractor including the total haul distance.	m³	125		
4.3.4	8.3.3.3	Compaction in road reserves including additional compaction and selection of material (PSDB10)	m³	24 080		
4.4		EXISTING SERVICES THAT INTERSECT OR ADJOIN PIPE TRENCH				
4.4.1	8.3.5(a)	Services that intersect a trench (PSDB4) (Provisional)				
Total Carried Forward						

SCHEDULE 4: TRENCHES (GRAVITY MAIN)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
4.4.2	PSDB11	a) Cables	No.	1		
		b) Road crossings	No.	1		
		c) Storm Water up to 1200 mm dia.	No.	1		
		d) Sewer	No.	0		
	8.3.5(b)	Services that adjoin a trench (PSDB4)				
		a) Cables	m	100.0		
		b) Roads	m	50.0		
		c) Storm Water up to 1200 mm dia.	m	100.0		
		d) Sewer	m	0.0		
4.5	SABS 1200 LB	BEDDING (WATER PIPES)				
4.5.1	8.2.1	PROVISION OF BEDDING				
4.5.2	8.2.2.1	Provision of bedding from Trench excavation				
		a) Selected granular bedding material (PSLB1 & 2)	m³	950.0		
		b) Selected blanket fill material (PSLB1 & 2)	m³	950.0		
		Import from other necessary excavations within the free haul distance (provisional)				
4.5.3	8.2.2.2	a) Selected granular bedding material (PSLB1 & 2)	m³	605.0		
		b) Selected blanket fill material (PSLB1 & 2)	m³	3 050.0		
		Import from borrow pit(s) (Identified by the contractor, including royalties and haulage) (PSD3) (Provisional)				
		a) Selected granular bedding material (PSLB1 & 2)	m³	7 225.0		
4.5.4	8.2.2.3	b) Selected blanket fill material (PSLB1 & 2)	m³	28 900.0		
		Import from commercial sources selected by the contractor including the total haul distance (provisional)				
		a) Selected granular bedding material (PSLB1 & 2)	m³	20.0		
		b) Selected blanket fill material (PSLB1 & 2)	m³	50.0		
4.5.5		Overhaul:				
Total Carried Forward						

SCHEDULE 4: TRENCHES (GRAVITY MAIN)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
4.5.6	8.2.3	a) Free haul	m³	7 830		
		b) Overhaul of backfill material for bedding cradle and selected fill blanket. (Up to 15km)	m³.km	180 615		
4.5.7	8.2.4	Concrete bedding (provisional) (PSLB3	m³	95.0		
4.5.7.1	PSGA	Encasing of pipes in class 25/19 concrete (Provisional) (PSLB4)				
4.5.7.2		Without reinforcement as shown on drawings no. 2024-08/W/D/006 for:(Provisional)				
		a) 500mm	m	25.0		
		b) 400mm	m	25.0		
		c) 315mm	m	25.0		
		d) 110mm	m	25.0		
		e) 90mm	m	25.0		
		f) 75mm	m	25.0		
		With reinforcement as shown on drawings no. 2024-08/W/D/006 for: (Provisional)				
		a) 500mm	m	25.0		
		b) 400mm	m	25.0		
		c) 315mm	m	25.0		
		d) 110mm	m	25.0		
		e) 90mm	m	25.0		
		f) 75mm	m	25.0		
4.6	1200 DB	FINISHING (PROVISIONAL)				
	8.3.6					
4.7.1	8.3.6.1	Reinstate road surfaces complete with all Road layer works and Kerbing (PSDB10 & 11)				
4.7.2		a) Asphalt of Thickness 40mm in Carriageway	m²	50.0		
		b) Gravel surfaced	m²	100.0		
		c) Gravel shoulders	m²	100.0		
		Finishing and Cleaning (PC1, 2, 3, 4)	Sum	1.0		
		Finishing and Cleaning of pipeline routes	km			
4.7	8.3.7	ACCOMMODATION OF TRAFFIC				
Total Carried Forward						

SCHEDULE 4: TRENCHES (GRAVITY MAIN)						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		All precautions taken, including all personnel to guarantee safe accommodation of traffic (PSDB3)	Sum			
Total Carried Forward To Summary						

SCHEDULE 5: PIPE WORK (GRAVITY MAIN)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
5		SCHEDULE 5: PIPE WORK (GRAVITY MAIN)				
5.1	SABS 1200 L	PIPELINE				
5.1.1	8.2.1	Supply, lay, joint, bed and test complete with the following uPVC pressure pipes: Conforming with SABS 966/1976, in 6m lengths, each pipe fitted at one end with a Z-lock coupling mechanical joint (PSL1, PSL2, PSL8, PSL9, PSL10 and PSL11)				
		a) 500mm dia. Class 06	m	11 265		
		b) 500mm dia. Class 09	m	2 820		
		c) 450mm dia. Class 06	m	1 235		
		d) 450mm dia. Class 09	m	3 565		
		e) 400mm dia. Class 06	m	4 450		
		f) 355mm dia. Class 06	m	3 230		
		g) 200mm dia. Class 06	m	840		
		h) 160mm dia. Class 06	m	540		
		i) 110mm dia. Class 06	m	1 885		
		j) 110mm dia. Class 09	m	8 950		
		k) 90mm dia. Class 06	m	3 510		
		l) 90mm dia. Class 09	m	10 550		
		m) 75mm dia. Class 06	m	175		
		n) 75mm dia. Class 09	m	710		
5.2	8.2.2	FITTINGS AND SPECIALS FOR uPVC PIPES Supply, lay and bed, including cut pipes to length where required and test the following fittings and specials complete. Fittings for uPVC pipes Class 16 (unless otherwise specified) and/or Copon painted cast iron. (PSL6)				
5.2.1	8.2.2	Bend 11° uPVC				
		a) 500 ND	No.	5		
		b) 450 ND	No.	5		
		c) 400 ND	No.	5		
		d) 355 ND	No.	5		
Total Carried Forward						

SCHEDULE 5: PIPE WORK (GRAVITY MAIN)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R	
Brought Forward							
5.2.2	8.2.2	e) 200 ND	No.	5			
		f) 160 ND	No.	5			
		g) 110 ND	No.	5			
		h) 90 ND	No.	5			
		i) 75 ND	No.	5			
		Bend 22° uPVC					
		a) 500 ND	No.	5			
		b) 450 ND	No.	5			
		c) 400 ND	No.	5			
		d) 355 ND	No.	5			
5.2.3	8.2.2	e) 200 ND	No.	5			
		f) 160 ND	No.	5			
		g) 110 ND	No.	5			
		h) 90 ND	No.	5			
		i) 75 ND	No.	5			
		Bend 45° uPVC					
		a) 500 ND	No.	3			
		b) 450 ND	No.	3			
		c) 400 ND	No.	3			
		d) 355 ND	No.	2			
5.2.4	8.2.2	e) 200 ND	No.	2			
		f) 160 ND	No.	2			
		g) 110 ND	No.	5			
		h) 90 ND	No.	3			
		i) 75 ND	No.	2			
		Bend 90° uPVC					
		a) 500 ND	No.	3			
		b) 450 ND	No.	2			
		c) 400 ND	No.	2			
		Total Carried Forward					

SCHEDULE 5: PIPE WORK (GRAVITY MAIN)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
5.2.5	8.2.2	d) 355 ND	No.	5		
		e) 200 ND	No.	1		
		f) 160 ND	No.	1		
		g) 110 ND	No.	5		
		h) 90 ND	No.	2		
		i) 75 ND	No.	2		
5.2.6	8.2.2	Reducer				
		a) 500 x 450 ND	No.	1		
		b) 450 x 400 ND	No.	1		
		c) 250 x 160 ND	No.	1		
		d) 110 x 75 ND	No.	1		
		Tees				
5.2.6	8.2.2	a) 110 x 75 mm	No.	1		
		b) 110 x 110 mm	No.	1		
5.2.6	8.2.2	End Caps				
		a) 75 ND	No.	2		
		b) 90 ND	No.	2		
		c) 110 ND	No.	2		
5.2.7	8.2.2	d) 160 ND	No.	1		
		e) 200 ND	No.	1		
		f) 350 ND	No.	1		
		Repair Couplings				
		a) 75 ND	No.	2		
		b) 90 ND	No.	2		
5.2.7	8.2.2	c) 110 ND	No.	2		
		d) 160 ND	No.	1		
		e) 200 ND	No.	1		
		f) 300 ND	No.	1		
5.3	8.2.3	VALVES				
Total Carried Forward						

SCHEDULE 5: PIPE WORK (GRAVITY MAIN)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
5.3.1		Line valves to SABS 664. Supply, install, bed and testing line valve assemblies including valve chamber in uPVC mains complete as per Drawing no. 2024-08/W/D/007. Cutting of pipes, reducers and couplings / adaptors included. (PSL4) Valves provided with cap top and a tee key. Valve to comply with the Project Specification (PSL4, PSL6)				
		a) 250 ND class 10	No.	5		
5.3.1.1		Line valves to SABS 664. Supply, install, bed and testing line valve assemblies including valve chamber in uPVC mains complete as per Drawing no. 2024-08/W/D/008. Cutting of pipes, reducers and couplings / adaptors included. (PSL4) Valves provided with cap top and a tee key. Valve to comply with the Project Specification (PSL4, PSL6) for:				
		a) 100 ND to 250 ND class 10	No.	1		
		b) 300 ND to 500 ND class 10	No.	1		
5.3.2	8.2.4	Double Orifice air valves				
5.3.2.1		Air valve chamber to be provided complete as per drawing 2024-08/W/D/001 for "VENT-O-MAT RBX" or approved equivalent complete with isolating valve tee, reducer and manhole (rate to include all pipe cutting, couplings and adaptors) for diameters:				
		a) 500 mm dia.	No.	23		
		b) 450 mm dia.	No.	8		
		c) 400 mm dia.	No.	7		
		d) 355 mm dia.	No.	5		
		e) 200 mm dia.	No.	0		
		f) 160 mm dia.	No.	0		
		g) 110 mm dia.	No.	18		
		h) 90 mm dia.	No.	23		
		i) 75 mm dia.	No.	1		
5.3.2.2		Double Orifice air valves				
		Air Valve to be supplied and installed complete as per drawing 2024-08/W/D/001 "VENT-O-MAT RBX" or approved equivalent complete. (Max. working pressure - 120m)				
Total Carried Forward						

SCHEDULE 5: PIPE WORK (GRAVITY MAIN)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
5.3.3		a) 50 ND	No.	43		
		b) 80 ND	No.	13		
		c) 100 ND	No.	31		
5.3.3.1		Scour valve assemblies				
		Extra over item 5.1 for supplying, installing, bedding and testing scour valve assemblies complete cutting of pipes, couplings and manholes included. Valve to be provided complete as per drawings 2024-08/W/A/001 and 2024-08/W/D/005 Type 2.				
		a) On 500mm Ø main	No.	2		
		b) On 450mm Ø main	No.	1		
		c) On 400mm Ø main	No.	1		
		d) On 355mm Ø main	No.	1		
5.3.3.2		Extra over item 5.1 for supplying, installing, bedding and testing scour valve assemblies complete cutting of pipes, couplings and manholes included. Valve to be provided complete as per drawing 2024-08/W/D/006 Type 3				
		a) On 500mm Ø main	No.	3		
		b) On 450mm Ø main	No.	1		
		c) On 400mm Ø main	No.	1		
		d) On 355mm Ø main	No.	1		
5.3.3.3		Extra over item 5.1 for supplying, installing, bedding and testing scour valve assemblies complete cutting of pipes, couplings and manholes included. Valve to be provided complete as per drawing 2024-08/W/D/006 Type 4				
		a) On 110mm Ø main	No.	4		
		b) On 90mm Ø main	No.	4		
5.4	1200 L 8.2.5	SUPPLY AND FIT, INCL. BED, TEST AND DISINFECT PIPES, VALVES, AND SPECIALS: Excavation to be measured under Schedule 4, Item 4.2				
5.4.1	8.2.2	Supply and stall pipe and specials, incl. cutting of pipes to length, test and disinfect as per:				
		a) Drg No. 2024-08/W/D/002: Detail 1	No.	3		
Total Carried Forward						

SCHEDULE 5: PIPE WORK (GRAVITY MAIN)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
5.4.2	8.2.13	b) Drg No. 2024-08/W/D/002: Detail 2 CHAMBERS AND MANHOLES:	No.	2		
	8.2.14	Construct chamber as per:				
		a) Drg No. 2024-08/W/D/002: Detail 1	No.	3		
		b) Drg No. 2024-08/W/D/002: Detail 2	No.	3		
5.4.3		WATER METERS				
		Complete supply & installation of Sensus Meistream (or similar approved) watermeters (Reducers excluded)				
		a) 50 mm	No.	3		
		c) 80 mm	No.	3		
5.4.4		STRAINERS				
		Complete supply & installation of Strainers				
		a) 50 mm	No.	3		
		c) 80 mm	No.	3		
5.4.5		MANHOLES				
		a) Supply and construct 1200 mm Ø manhole only, as per Drawing No. 2024-08/W/D008	No.	1.0		
5.5		ANCILLARIES				
5.5.1	8.2.11	THRUST BLOCK OF SIZES				
	PSGA4	V=Volume(m³) and W=width(m) Dimensions as per details per drawing no. 2024-08/W/D/015				
		a) V = 0.2 ; W = 0.7	No.	3.0		
		b) V = 0.6 ; W = 1.2	No.	3.0		
		c) V = 1.0 ; W = 1.6	No.	1.0		
		d) V = 1.4 ; W = 1.8	No.	4.0		
		e) V = 1.8 ; W = 2.2	No.	2.0		
		f) V = 2.8 ; W = 1.8	No.	4.0		
		g) V = 3.6 ; W = 1.9	No.	1.0		
		h) V = 5.2 ; W = 2.2	No.	2.0		
		i) V = 7.0 ; W = 2.4	No.	2.0		
Total Carried Forward						

SCHEDULE 5: PIPE WORK (GRAVITY MAIN)						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
5.5.2	PSL13 & PSL14	Pipeline Markers				
		Supply and install pipeline markers complete as per drawing no. 2024-08/W/D/016	No.	200		
5.5.3		Finishing off of pipeline (PC4)	km	54.0		
5.5.4		Typical sleeve pipe (Through road pavement) and typical excavation and backfill details for rigid water pressure pipes (Through road pavement) complete as per drawing 2024-08/W/D/009				
		a) Small sleeve pipes, Type D-12	No.	2		
		b) Small sleeve pipes, Type I-12	No.	1		
		c) Small sleeve pipes, Type K-12	No.	1		
Total Carried Forward To Summary						

SCHEDULE 6 : ELEVATED TANKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
6		SCHEDULE 6 : ELEVATED TANKS				
6.1		Sectional Pressed Steel Elevated Tanks				
6.1.1	1200D	Earthworks				
		a) Excavate in all materials for concrete bases	m³	245		
		b) Extra-over for item 6.1.1 (a) for intermediate material	m³	35		
		c) Extra-over for item 6.1.1 (a) for hard rock	m³	25		
6.1.2	1200G	Concrete				
	8.4.2	a) Soilcrete with approved gravel mixed with 8% by weight OPC	m³	120		
		b) No Fines concrete, using 19mm aggregate	m³	5		
		c) Blinding layer in 20MPa/19mm concrete, 75 mm thick	m²	235		
	8.4.3	d) Supply, mix and place Class 25/19 concrete for column bases	m³	105		
	8.4.3	e) Supply, mix and place Class 30/19 concrete for column bases	m³	5		
6.1.3	8.3	Reinforcement				
6.1.3.1	8.3.1	Mild steel bars				
	8.1.2.2	a) Diameter 25mm : Basic price	kg	140		
		b) Extra over 6.1.3.1 (a) (Provisional quantities for bars of diameter)				
		i) 8mm	kg	5		
		ii) 10mm	kg	140		
		iii) 12mm	kg	5		
6.1.3.2	8.3.1	High tensile steel bars				
	8.1.2.2	a) Diameter 25mm : Basic price	kg	8 945		
		b) Extra over 6.1.3.2 (a) (Provisional quantities for bars of diameter)				
		i) 10 mm	kg	5		
		ii) 12 mm	kg	495		
		iii) 16 mm	kg	7 720		
		iv) 20 mm	kg	720		
Total Carried Forward						

SCHEDULE 6 : ELEVATED TANKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
6.1.3.3	8.3.2	v) 25 mm High tensile welded mesh reinforcement	kg	5		
		a) Type reference 395 in standard sheet	m ²	5		
		b) Type reference 500 in standard sheet	m ²	5		
		c) Type reference 617 in standard sheet	m ²	5		
6.1.4	8.2	Formwork				
6.1.4.1	8.2.1	Rough formwork	m ²	65		
6.1.4.2	8.2.2	Smooth formwork	m ²	10		
6.1.4.3		Chamfer 25 x 25 mm	m	180		
6.1.4.4	8.4.4	Unformed surface finishes				
		a) Wood floated finish	m ²	190		
		b) Steel floated finish	m ²	10		
6.1.5	PSHA/PH	Sectional steel tank Design, supply, fabrication, delivery to site and erection of the following sectional pressed steel tank with cover, access hatches, ventilator and pipework, all as specified in particular specification including surface dressing, surface preparation and hot dip galvanising, sterilising and water tightness test in the following sizes : Note : (All tank to have a safety platform as per relevant OH&S regulations)				
		a) 20 m ³	No.	1		
		b) 30 m ³	No.	2		
		c) 40 m ³	No.	1		
		d) 50 m ³	No.	1		
		e) 100 m ³	No.	1		
6.1.6	PSHA/PH	Design, supply, fabricate, deliver to site and erection of the following structural steel stands for the sizes of pressed steel tanks indicated and heights as specified. Structural steel stands with associated access ladder, surface dressing, surface preparation, hot dip galvanising including holding down bolts :				
Total Carried Forward						

SCHEDULE 6 : ELEVATED TANKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		Note : (All tank stands to have safety platform and landings as per relevant OH&S regulations)				
		a) For 20m³ tank volume on the following stand heights:				
		i) 15m heights	No.	1		
		b) For 30m³ tank volume on the following stand heights:				
		i) 15m heights	No.	2		
		c) For 40m³ tank volume on the following stand heights:				
		i) 15m heights	No.	1		
		d) For 50m³ tank volume on the following stand heights:				
		i) 15m heights	No.	1		
		e) For 100m³ tank volume on the following stand heights:				
		i) 15m heights	No.	1		
6.2		PIPEWORK FOR STEELTANKS				
6.2.1		Flanged GMS Pipework at Structural Steel Tanks				
		a) 80ND	m	236		
		b) 100ND	m	116		
		c) 150ND	m	20		
		d) 200ND	m	20		
6.2.2		Flanged GMS Fittings				
		a) Bends 90°				
		i) 80ND	No.	45		
		ii) 100ND	No.	25		
		iii) 150ND	No.	4		
		iv) 200ND	No.	4		
		b) Tees				
		i) 80ND	No.	5		
Total Carried Forward						

SCHEDULE 6 : ELEVATED TANKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
6.3 6.3.1 6.3.2 6.4 6.5		ii) 100ND	No.	1		
		iii) 150ND	No.	1		
		iv) 200ND	No.	1		
		c) Steel to PVC Flange Adaptors				
		i) 80ND	No.	5		
		ii) 100ND	No.	5		
		iii) 150ND	No.	1		
		iv) 200ND	No.	1		
		VALVES				
		Supply and install Non-rising Spindle valve complete, including cutting of pipes and couplings				
		a) 80ND	m	1		
		b) 100ND	m	4		
		c) 150ND	m	1		
		d) 200ND	m	1		
		Supply and install Leveldex Float Control valve complete				
		a) 80 mm Ø	No.	6		
		Complete supply, install and test garden standpipe as detailed in Drawing No. 2024-08/W/D/017	No.	6		
	PSA 12.6	Reservoir Site lightning protection by specialist contractor	Prov Sum	1		60 000
Total Carried Forward To Summary						

SCHEDULE 7 : SECURITY FENCING

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
7		SCHEDULE 7 : SECURITY FENCING				
7.1		Supply and erect fencing complete as per Drawing No. 2024-08/F/D/002.				
		a) Corner posts	No.	24		
		b) Intermediate posts	No.	72		
		c) Gate posts	No.	12		
		d) Double gate 3,6m total width, with locking chain, hinges and drop bolts.	No.	6		
		e) Razor mesh with wires	m	360		
		f) Cast-insitu Concrete Class 15/19 (200 x 250 mm) around fence	m	360		
Total Carried Forward To Summary						

SCHEDULE 8 : HEALTH AND SAFETY

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
8	PSA18 & PHS	SCHEDULE 8 : HEALTH AND SAFETY				
8.1		NOTIFICATION OF CONTRUCTION WORK				
8.1.1		Allow for the cost of notification of construction work by the Principal Contractor.	Sum	1.0		
8.2		HEALTH AND SAFETY PLAN				
8.2.1		Allow for the cost of setting up a Health and Safety Plan as required in the specifications for the Principal Contractor. (To be approved by Agent before commencement of work.)	No.	1.0		
8.2.2		Allow for the cost of setting up a Health and Safety Plan as required in the specifications for each sub-contractor appointed by the Principal Contractor.	No.	1.0		
8.2.3		Overheads, charges and profit on Item 8.2.2 (Note: Transfer 8.2.2 Amount to 8.2.3 Qty.)	%	0.00	10.00	
8.3		HEALTH AND SAFETY MAIN FILE				
8.3.1		<p>Allow for the cost to compile a health and safety file to include all the required supporting documentation as follows: (NOT TO BE REMOVED FROM SITE)</p> <p>(All files shall be lever arch files with original colour document of acceptable standards including dividers. Emergency numbers to be displayed on the back of the file. The file will be expanded during the project as and when required by the client.)</p> <p>Copy of H&S Act</p> <p>Proof of registration with COID Insurer</p> <p>Notification of construction work</p> <p>Mandatory agreement</p> <p>H&S Specification provided by client</p> <p>Copy of tender document, drawings etc</p> <p>Company Safety Policy to be signed by CEO</p> <p>Company organogram with respect to H&S on specific sites.</p> <p>Letters of appointment for specific site</p> <p>List of sub-contractors</p> <p>Evacuation plan</p>				
Total Carried Forward						

SCHEDULE 8 : HEALTH AND SAFETY

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
8.3.2		Risk assessments and method statements Safe work procedures and material safety data sheets Fall protection plan Incident recordings Medical records Minutes of H&S meetings	Sum	1.0		
8.3.3		Allow for the cost of compiling a Health and Safety file for each sub-contractor including all the applicable supporting documentation as for the Principal Contractor. (NOT TO BE REMOVED FROM SITE)	No.	1.0		
8.4		Overheads, charges and profit on Item 8.3.2 (Note: Transfer 8.3.2 Amount to 8.3.3 Qty.)	%	0.00	10.00	
8.4.1		HEALTH AND SAFETY REGISTER FILE				
8.4.2		Allow for the cost to compile a health and safety Register file to include all the required Registers.	Sum	1.0		
8.4.3		Allow for the cost of compiling a Health and Safety Register file for each sub-contractor including all the applicable supporting documentation as for the Principal Contractor.	No.	1.0		
8.5		Overheads, charges and profit on Item 8.4.2 (Note: Transfer 8.4.2 Amount to 8.4.3 Qty.)	%	0.00	10.00	
8.5.1		HEALTH AND SAFETY TRAINING FILE				
8.5.2		Allow for the cost to compile a health and safety Register file to include all the required Training material.	Sum	1.0		
8.5.3		Allow for the cost of compiling a Health and Safety Register file for each sub-contractor including all the applicable supporting documentation as for the Principal Contractor.	No.	1.0		
8.6		Overheads, charges and profit on Item 8.5.2 (Note: Transfer 8.5.2 Amount to 8.5.3 Qty.)	%	0.00	10.00	
8.6.1		SERVICE PROVIDER APPOINTMENTS				
8.7		Allow for the appointment of a H&S trainer to train the SHE representative.	Sum	1.0		
		SHE REPRESENTATIVE				
Total Carried Forward						

SCHEDULE 8 : HEALTH AND SAFETY

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
8.7.1		Allow for the cost of a SHE representative to be permanently on site (for Principal Contractor).	Month	18.0		
8.8		FIRST AID EQUIPMENT				
8.8.1		First aid box	No.	1.0		
8.8.2		First aid boxes for sub-contractor	No.	1.0		
8.8.3		Stretcher	No.	1.0		
8.9		FIRE FIGHTING EQUIPMENT				
		Allow for the cost of:				
8.9.1		Fire extinguishers	No.	2.0		
8.9.2		Fire extinguishers of sub-contractors	No.	1.0		
8.9.3		Fire extinguishers test certificates	No.	3.0		
8.10		PERSONNEL PROTECTIVE CLOTHING				
		Allow for the cost of:				
8.10.1		Hardhats	No.	6.0		
8.10.2		Safety shoes	No.	10.0		
8.10.3		Dust masks	No.	2 500.0		
8.10.4		Safety goggles	No.	15.0		
8.10.5		Gum boots	No.	15.0		
8.10.6		Welding helmet	No.	1.0		
8.10.7		Gas Welding goggles	No.	1.0		
8.10.8		Leather aprons	No.	1.0		
8.10.9		Overalls	No.	25.0		
8.11		BARRICADING				
		Allow for the cost to supply barricading to safeguard excavations as instructed by Safety Agent				
8.11.1		Danger tape	m	500.0		
8.11.2		1.2m Dayglo Mesh	m	1 500.0		
8.12		CHEMICAL TOILETS				
Total Carried Forward						

SCHEDULE 8 : HEALTH AND SAFETY

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
8.12.1		Allow for chemical toilets on site as required by the specification For male workers	No.	1.0		
8.12.2		For female workers	No.	2.0		
8.13		EATING FACILITIES				
8.13.1		Allow for eating facilities in the form of a shaded net, table and chairs.	No.	1.0		
8.14		SIGNS				
		Allow for sign boards to be displayed on site as required				
8.14.1		No entry signs	No.	4.0		
8.14.2		First aid signs	No.	2.0		
8.14.3		Fire equipment signs	No.	3.0		
8.14.4		Warning signs (Construction area boards)	No.	5.0		
8.14.5		Traffic control boards	No.	4.0		
8.15		MEDICAL TESTS				
		Allow for medical tests for workers as required				
8.15.1		Medical fitness tests for operators on construction vehicles	No.	6.0		
8.15.2		Fitness tests for workers	No.	25.0		
Total Carried Forward To Summary						

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT (RAND)
1	SCHEDULE 1: GENERAL
2	SCHEDULE 2: PROVISIONAL SUMS and PRIME COST ITEMS
3	SCHEDULE 3: DAYWORKS
4	SCHEDULE 4: TRENCHES (GRAVITY MAIN)
5	SCHEDULE 5: PIPE WORK (GRAVITY MAIN)
6	SCHEDULE 6: ELEVATED TANKS
7	SCHEDULE 7: SECURITY FENCING
8	SCHEDULE 8: HEALTH AND SAFETY
	
	SUBTOTAL
	Add 15% VAT
	
	TOTAL

Dr Ruth Segomotsi Mompoti District Municipality

Dr Ruth Segomotsi Mompoti District Municipality
Rural Water Supply Programme

CONTRACT RDM2024-008C

KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 – MOROKWENG

SCOPE OF WORKS

INDEX

Section	Description	Page No
Section C3.1	Description of the Works	C3.1.1
Section C3.1.1	Employer's Objectives.....	C3.1.1
Section C3.1.2	Overview of the Works	C3.1.1
Section C3.1.3	Location of the Works.....	C3.1.2
Section C3.2	Engineering.....	C3.2.1
Section C3.2.1	Employer's Design.....	C3.2.1
Section C3.2.2	Drawings	C3.2.1
Section C3.3	Procurement	C3.3
Section C3.3.1	Reconstruction and Development Programme	C3.3.1
Section C3.3.2	Labour and Personnel	C3.3.2
Section C3.4	Construction	C3.4.1
Section C3.4.1	Standard Specifications	C3.4.1.1
Section C3.4.2	Variations and Additions to Standard and Particular Specifications.....	C3.4.2.1
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Section C3.5	Management.....	C3.5.1
Section C3.5.1	Management of the Works.....	C3.5.1
Annexure A	Occupational Health and Safety Specification	C3.5.2.1

END OF SECTION

Dr Ruth Segomotsi Mompoti District Municipality

CONTRACT: RDM2024-008C

KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 – MOROKWENG

SCOPE OF WORKS

SECTION C3.1: DESCRIPTION OF WORKS

C3.1.1 EMPLOYERS OBJECTIVES

Bids are invited for the construction of a bulk water supply infrastructure and the execution of associated civil engineering works as part of the Dr Ruth Segomotsi Mompoti District Municipality's Regional Bulk Water Supply Scheme. DRSMDM will be appointing **three** contractors for this project each allocated a set Scope of Works. No Bidder will be awarded more than one Contract.

C3.1.2 OVERVIEW OF THE WORKS

This contract comprises the equipping of boreholes and appurtenant civil engineering work in Kagisano Molopo Local Municipality (KMLM) of the North-West Province. Details of the Works are included in Clause C3.1.3 hereof. The works will be executed by means of "mechanical" and/or "labour intensive" methods.

The works to be executed under this contract consists of the following:

- (i) Equipping of tested boreholes with pumps and power units as detailed in the document.
- (ii) Erection of pump houses and appurtenant works.
- (iii) Construction of bulk water distribution system.
- (iv) Erection of elevated pressed steel storage facilities associated with (iii) above.
- (v) Construction of booster pump stations.
- (vi) Electrification of pumping installation.
- (vii) Construction of concrete reservoirs.
- (viii) Construction of paved access road.

C3.1.3 EXTEND OF THE WORKS - Contract C

The work required to be done entails the following:

- i) Establishment of the Contractor's base camp or depot.
- ii) Setting out of the works as per works instruction.
- iii) Site clearance and earthworks (if necessary) to accommodate the planned infrastructure, plant, equipment and pipework. (In collaboration with the Employer's Agent or his Representative).
- iv) Construction of elevated tank stand bases, erection of pressed steel tanks and stands with the appurtenant pipe work.
- v) Trenching and construction of pipelines for bulk water distribution systems.
- vi) Supply and installation of control valves and water meters with associated chambers.
- vii) Accommodation of traffic to be done in accordance with the South African Road Traffic Signs manual.
- viii) Locating and safe keeping of existing services.
- ix) Commissioning of the works on completion.

C3.1.4 LOCATION OF THE WORKS

Works under this project are to be executed in the North West Province and more specifically, in the Dr Ruth Segomotsi Mompoti District Municipality's area of jurisdiction. The operation area falls in the KMLM area that is located approximately 140 km North-West of Vryburg. The area for implementation stretches from Morokweng up to Maheng and include villages like Leeuaar, Morokwaneng, Kibitwe, Garapipa, etc, as reflected in the Regional Context Locality Plan, as shown in Volume 2.

END OF SECTION

Dr Ruth Segomotsi Mompoti District Municipality

CONTRACT RDM2024-008C

**KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 –
MOROKWENG**

SCOPE OF WORKS

SECTION C3.2: ENGINEERING

C3.2.1 EMPLOYERS DESIGN

The permanent works included in this contract has been designed by the Employer unless otherwise stated. The detail of the works is indicated on the drawings and in the specifications. The Tenderer may submit alternative offers for designs prepared by himself subject to the conditions specified in Clause 2.12 of Section T1.3 of the Standard Conditions of Tender.

C3.2.2 DRAWINGS

Drawings are bound in Volume 2 - Book of Drawings. A drawing list is included in Volume 2.

END OF SECTION

Dr Ruth Segomotsi Mompoti District Municipality

CONTRACT RDM2024-008C

**KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 –
MOROKWENG**

SCOPE OF WORKS

C3.3 PROCUREMENT

C3.3.1 Procurement Principles

The Employer decided to adopt the Standard of Uniformity in Construction Procurement published by the Construction Industry Development Board (CIDB) for his procurement process.

The Standard for Uniformity in Construction Procurement establishes minimum requirements that:

- promote cost efficiencies through the adoption of a uniform structure for procurement documents, standard component documents and generic solicitation procedures;
- provide transparent, fair and equitable procurement methods and procedures in critical areas in the solicitation process;
- ensure that the forms of contract that are used are fair and equitable for all the parties to a contract; and
- enable risk, responsibilities and obligations to be clearly identified.

END OF SECTION

Dr Ruth Segomotsi Mompoti District Municipality

CONTRACT RDM2024-008C

**KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 –
MOROKWENG**

(CONTRACT C)

CONSTRUCTION

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PS	The Works	C3.4.1.2

END OF SECTION

Dr Ruth Segomotsi Mompoti District Municipality

CONTRACT NO. RDM2024-008C

KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 – MOROKWENG

SECTION C3.4: CONSTRUCTION

C3.4.1 STANDARD SPECIFICATIONS

The Standard Specifications on which this contract is based are the South African Bureau of Standard's Standardized Specifications for Civil Engineering Construction (SABS 1200). (Note: "SABS has been changed to "SANS"; the SABS 1200 specifications are due to be replaced in the foreseeable future by SANS 2001 amongst other specifications).

Although not bound in nor issued with this Document, the relevant sections of the standard specifications shall form part of this Contract. These documents are available at the Contractor's expense from the SA Bureau of Standards, Private Bag X191, PRETORIA, 0001.

The applicable SANS 1200 Standardised Specification for this Contract shall be the following

- | | | |
|----|---|-------------------------------------|
| A | - | General |
| AB | - | Engineers office |
| C | - | Site clearance |
| DA | - | Earthworks (Small Works) |
| DB | - | Earthworks (Pipe Trenches) |
| DK | - | Gabions and pitching |
| DM | - | Earthworks |
| GA | - | Concrete (small works) |
| HA | - | Structural steelwork (sundry items) |
| HB | - | Cladding and sheeting |
| L | - | Medium pressure pipelines |
| LB | - | Bedding (pipes) |

Dr Ruth Segomotsi Mompoti District Municipality

CONTRACT RDM2024-008C

KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 – MOROKWENG

CONSTRUCTION

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PSAB	Employer's Agent's Office	C3.4.2.PSAB.1
PSC	Site Clearance	C3.4.2.PSC.1
PSDA	Earthworks (Small Works)	C3.4.2.PSDA.1
PSDB	Earthworks (Pipe Trenches)	C3.4.2.PSDB.1
PSDK	Gabions and Pitching	C3.4.2.PSDK.1
PSGA	Concrete (Small Works)	C3.4.2.PSGA.1
PSHA	Structural Steel (Small Works)	C3.4.2.PSHA.1
PSL	Medium Pressure Pipelines.....	C3.4.2.PSL.1
PSLB	Bedding (Pipes)	C3.4.2.PSLB.1

Dr Ruth Segomotsi Mompoti District Municipality

CONTRACT NO. RDM2024-008C

**KAGISANO MOLOPO REGIONAL BULK WATER SCHEME: CLUSTER 6 –
MOROKWENG**

SECTION C3.4: CONSTRUCTION

C3.4.2 AMENDMENTS TO THE STANDARD SPECIFICATIONS

The following variations and additions to the Standard and Particular Specifications will be applicable to this contract.

The various documents listed in C3.4.1 shall be treated as mutually explanatory. However, should any requirement of Section C3.4.2 or C3.4.3 conflict with any requirement of Standardised Specifications or with any requirements of the Particular specifications, then the requirement of Sections C3.4.2 and C3.4.3 shall prevail.

END OF SECTION

PSA GENERAL

PSA1 SPECIFICATION DRAWINGS (Clause 2.7)

Specification Drawings may be included in this document as annexures to the Project and Particular Specifications. Where such Specification Drawings depict items and standard structures according to layouts and details differing from those shown in the Standardised Specifications, the layouts and details shown in the annexures to the Project and Particular Specifications shall be adopted.

PSA2 QUALITY (Clause 3.1)

All material used in the Works shall, where such mark has been awarded for a specific type of material, bear the SABS mark. Alternatively, the Contractor shall furnish the Employer's Agent with certificates of compliance of materials, which bear the official mark of the appropriate standard.

PSA2.1 DEFINITIONS

PSA2.1 Definitions

Add the following :

Task	a quantified activity or operation.
Daily task	- a task that is required to be completed within a working day.
Task remuneration	- remuneration as paid for a completed task or job.
Daily rate	- the remuneration of a day's work.
Daily wage	- See daily rate.
Daily task remuneration	- the remuneration for a completed daily task.
Labour-intensive construction	- the economically efficient employment of as great a portion of labour as is technically feasible to produce as high a standard of construction as demanded by the specifications and allowed by the funding available, thus the effective substitution of labour for equipment. (Note: This definition is not Contract specific, but applies to the project as a whole. This Contract is a part of such a project.)

PSA3 MATERIALS

PSA3.1 Supply of Materials

The Contractor will be responsible to supply all the materials necessary for the proper execution of the works. He shall also be fully responsible for quality of materials used and/or installed.

PSA4 PLANT (Clause 4.3)

Except where the use of plant is essential in order to meet the specified requirements by the Due Completion Date, the Contractor shall use only hand tools and equipment in the construction of those portion(s) of the Works that are required in terms of the Project Specifications to be constructed using labour intensive construction methods.

PSA5 CONSTRUCTION

PSA5.1 Setting Out of the Works

Where labour-intensive work is specified, the Contractor shall also be responsible for the setting out of daily tasks.

PSA6 TESTING (Clause 7)

- (a) All test results obtained by the Contractor in the course of his process control of the Works shall be submitted to the Employer's Agent or his Representative prior to requesting inspection of the relevant portions of the Works. Any request for inspection shall be submitted on the prescribed forms that are appended as annexures to the Specifications.
- b) The Contractor shall make suitable arrangements for process control prior to commencement with the Works. Should he intend using site personnel for this purpose he shall ensure that suitably trained and competent personnel take charge of the necessary test work, and that the necessary equipment is at their disposal prior to commencement of the Works. Failure to comply with these requirements shall be just cause for the Employer's Agent to order suspension of the Works without additional remuneration, or for him to recommend termination to the Employer in terms of the General Conditions of Contract.
- c) The Contractor shall deliver to the Employer's Agent, for his consideration, quality assurance programmes (as obtained from all the Contractor's proposed suppliers of pipes, valves and specials) prior to the Contractor's appointment of any suppliers.

PSA7 SITE CORRESPONDENCE

PSA7.1 Instructions by the Employer's Agent

Site instructions by the Employer's Agent, addressed to the Contractor at his office on the Site, will be numbered consecutively and will be deemed to have been received by the Contractor's Representative unless a break in the sequence of numbers is brought to the notice of the Employer's Agent in writing immediately.

PSA7.2 Site Diary

A site diary, which will be supplied by the Employer's Agent, must be filled in on a daily basis and submitted to the Employer's Agent on a monthly basis. No claims will be considered without the site diary's schedule properly completed (on a daily basis) and submitted. A site diary will be kept one per site.

PSA8 SITE MEETINGS

Refer to Section C3.5.1.10.

PSA9 PAYMENT (Clause 8.2)

Refer to Section C3.5.1.11.

PSA10 REPORTS

The submission of each monthly payment certificate shall be accompanied by a completed Progress Report.

This report is a pre-requisite for the approval of each monthly payment certificate and shall be completed in full to illustrate all work completed the preceding month, as well as work in progress at the time of submission of the report.

Labour intensive activities must be reported separately. All Local Labour reports required by the Employer / Funder must be completed and submitted on a monthly basis. Templates will be provided on commencement of the project.

PSA11 SUMS STATED PROVISIONALLY (Clause 8.5)

PSA11.1 Contingencies

No provisional sum has been included for contingencies. A Provisional Sum shall be included in the Summary of Schedules for contingencies. No percentage mark-up will be applicable to any payments made using contingency money other than those included in prices for variations determined in terms of Clause 6.4 of the Conditions of Contract.

PSA11.2 Contract Price Adjustment

No provisional sum has been included for Contract Price Adjustment (CPA). A Provisional Sum shall be included in the Summary of Schedules for CPA. No percentage mark-up will be applicable to any payments made using CPA money other than as determined by the CPA Formula applicable to the Contract.

PSA11.3 Materials for Dayworks

A Provisional Sum has been included in Schedule 2 for materials to be used during the execution of dayworks. In addition to the abovementioned amount, provision is made in Schedule 2 for a mark-up on the materials used during the execution of the dayworks by the

Contractor. Payment made shall be regarded as full compensation for overheads, charges and profit on the materials that are used when executing dayworks.

PSA11.4 Royalties for Borrow Materials

A Provisional Sum has been included in Schedule 2 for any royalties that may become payable by the Contractor in obtaining suitable borrow materials from sources designated by the Engineer. Payment will be based on the royalties actually and necessarily paid. In addition to the above amounts, provision is made in Schedule 2 for a mark-up on any payments made by the Contractor in this regard. The mark-up shall be regarded as full compensation for overheads, charges and profits as provided for in clause 6.6 of the Conditions of Contract.

PSA12 PRIME COST ITEMS (Clause 8.6)

PSA12.1 Acceptance Control Testing of Earthworks

A Prime Cost Item has been included in Schedule 2 for acceptance control testing of earthworks ordered by the Employer's Agent to be undertaken by a commercial laboratory. Payment will be based on the actual invoicing by the laboratory to the Contractor. In addition to the above-mentioned amount, provision is made in Schedule 2 for a mark-up on any payments made by the Contractor in this regard. The mark-up shall be regarded as full compensation for overheads, charges and profits as provided for in Clause 6.6 of the Conditions of Contract.

PSA12.2 Labour Desk Officers

A prime cost item has been included in Schedule 2 for the compensation of the Labour Desk Officer. Payments will be done to the Labour Desk Officer on instruction of the Employer's Agent, in writing. In addition to the abovementioned amount, provision is made in Schedule 2 for a mark-up on the payments made to Labour Desk Officers. This mark-up shall be regarded as a full compensation for overheads, charges and profits as provided for Clause 6.6 of the Conditions of Contract.

PSA12.3 Artisan and Skills Training

A Prime Cost Item has been included in Schedule 2 for payments to be made to specialists for the training of unskilled or semi-skilled persons in industry accredited management and generic skills. Payment to the Contractor will be based on invoices certified by the Employer's Agent and issued by training specialists to the Contractor for work undertaken in terms of this item.

In addition to the above amounts, provision is made in Schedule 2 for a mark-up on any payments made by the Contractor in this regard. The mark-up shall be regarded as full

compensation for overheads, charges and profits as provided for in Clause 6.6 of the Conditions of Contract.

PSA12.4 Office Consumables for Engineer's Site Facility

A Prime Cost Item has been included in Schedule 2 for office consumables as well as rental and maintenance associated with the telephone(s) to be supplied to the Employer's Agent's Representative(s) for the duration of the Contract as specified in section PSAB below. Payment will be based on call and rental costs, but excluding any deposits and installation costs which shall be priced under the Preliminary and General item Engineer's site facility.

In addition to the above amount, provision is made in Schedule 2 for a mark-up on any payments made by the Contractor. This mark-up shall be regarded as full compensation for overheads, charges and profits as provided for in Clause 6.6 of the Conditions of Contract.

PSA12.5 Electrical Connection Fees

A Prime Cost Item has been included in Schedule 2 for payments to Eskom in respect of electrical connection fees for borehole and pump station equipment.

In addition to the above-mentioned amount, provision is made in Schedule 2 for a mark-up on the connection fees paid. This mark-up shall be regarded as full compensation for overheads, changes, administration and profits as provided for in Clause 6.6 of the Conditions of Contract.

PSA12.6 Specialist Contractors

A Prime Cost Item has been included in Schedule 2 for payments made to Specialist Contractors, which will be executed specialist work.

In addition to the above-mentioned amount provision is made in Schedule 2 for a mark-up on the Specialist Contractors paid. This mark-up shall be regarded as full compensation for overheads, charges, administration and profits as provided for in Clause 6.6 of the Conditions of Contract.

PSA12.7 Specialized Services

A Prime Cost Item has been included in Schedule 2 for the appointment and payment for specialized services if and when required. These may include all work required by the following specialists:

- Acceptance control testing of pipe manufacturing, coatings and linings.

In addition to the abovementioned amount, provision is made in Schedule 2 for a mark-up for paying such specialized services. This mark-up shall be regarded as full compensation for overheads, charges and profits provided for Clause 6.6 of the Conditions of Contract.

PSA12.8 Relocation of Existing Services

A Prime Cost Item has been included in Section 2 for the relocation of existing services by specialists if and when required and ordered by the Employer's Agent.

In addition to the abovementioned amount, provision is made in Schedule 2 for a mark-up for paying for the relocation of existing services. This mark-up shall be regarded as full compensation for overheads, charges and profits provided for clause 6.6 of the conditions of Contract.

PSA12.9 Accommodation for Employer's Agent's Representative

A Prime Cost Item has been included in Schedule 2 for accommodation to be supplied to the Employer's Agent's Representative(s) for the duration of the Contract as specified in section PSAB below. Payment will be based rental costs and include any deposits and /or booking costs.

In addition to the above amount, provision is made in Schedule 2 for a mark-up on any payments made by the Contractor. This mark-up shall be regarded as full compensation for overheads, charges and profits as provided for in Clause 6.6 of the Conditions of Contract.

PSA12.10 Management of approved emerging local sub-contractors

A prime cost has been included in Schedule 2 for management of approved emerging local sub-contractors, which will be executed during works.

In addition to the above-mentioned amount provision is made in Schedule 2 for a mark-up on amounts paid to the approved emerging local sub-contractors. This mark-up shall be regarded as full compensation for overheads, charges, administration and profits as provided for in Clause 6.6 of the Conditions of Contract

PSA13 ADJUSTMENT OF PRELIMINARY AND GENERAL ITEMS DUE TO RAIN

Should the period for completion be automatically extended due to abnormal weather conditions occurring during execution of the Contract as provided for in the Project Specifications, no adjustment to the total for time-related preliminary and general items will be applicable.

PSA14 ADJUSTMENT OF PRELIMINARY AND GENERAL TIME-RELATED ITEMS

An approved extension of time will qualify the Contractor to receive additional payment for each relevant time related item at a unit rate based on the sum originally tendered for such item, and which shall be fair and reasonable as contemplated in Clause 6.4 of the General Conditions of Contract.

PSA15 ADJUSTMENT OF PRELIMINARY AND GENERAL ITEMS DUE TO INTERRUPTION IN WORK SCHEDULE

Should the period of completion be automatically extended in terms of clause PS5.6 as a result of interruption in the contractor's work schedule during execution of the contract, no adjustment to the total for time related preliminary and general items would be applicable. Time related preliminary and general items will be paid only if the Contractor has been established on site during a specific period. Therefore, if the Contractor was not established on site, time related P & G-items will not be paid.

If he was on site for only a limited period during a specific month, time related P&G items are to be paid in full for such a month.

PSA16 Installation of Ultrasonic Level Sensor

A Provisional Sum has been allowed in Schedule 2 for the supply, installation and commissioning of an ultrasonic level sensor in the reservoir (RES 1), with communication, power supply and earthing thereof, to link the reservoir status reporting to the booster pump station (BPS 1).

PSA17 Contractor's Re-establishment

Include the following clause 8.3.6

"Additional establishment cost payable to the Contractor on re-establishment."

- This item must cover all costs incurred by the Contractor when re-establishing after a de-establishment on instruction of the Employer's Agent. Such re-establishment cost must not be confused with the initial establishment costs **Unit: Sum**

PSA18 HEALTH AND SAFETY

The maintenance of safe work practice at all times and in all sections of the execution of the works is embedded in the day-to-day site activities of all the Contractor's management, staff and workforce on the contract.
However, the introduction of the Construction Regulations in 2014 requires from the

Employer to ensure that the Contractor has made adequate provision for the execution of the works within the specifications of said regulations. The following items have been identified as critical towards ensuring the minimum standards of safe work practice:

It must be noted that the lists below are not exhaustive and that many items have been traditionally priced by the Contractor as an integral part of his Preliminary and General items or as part of the overhead costs of other items. The tender document, although not detailed with regards the Construction Regulations, requires that the Contractor ensures adherence to the Occupational Health and Safety Act (Act 85 of 1993) the Construction Regulations, 2003.

PSA18.1 Fixed-charge Items

Add the following new Clause (Clause 8.3.5):

Compliance with the Occupational Health and Safety Act (Act 85 of 1993) and its regulations and with the Employer's Health and Safety Specification.	<u>Unit</u> Sum
---	------------------------

The fixed charge item shall include but shall not be limited to the following:

- Preparation of Health and Safety Plan,
- Establishment of Health and Safety File,
- Health and Safety Training
- Personal Protective Clothing and Equipment
- Erecting Fences, Signs and Barricades
- Establishment of Safety Administration
- Other Health and Safety Fixed-charge Obligations

PSA18.2 Time-related Items

Add the following new Clause (Clause 8.4.6):

Compliance with the Occupational Health and Safety Act. (Act 85 of 1993) and its regulations and with the Employer's Health and Safety Specification.	<u>Unit</u> Month
--	--------------------------

The time related item shall include but shall not be limited to the following:

- The employment cost of all health and safety personnel including consultants, health and safety officers, inspectors, supervisors and issuers required in terms of the Contractor's Health and Safety Plan,
- Updating the Health and Safety Plan as needed,
- Carrying out of periodic own audits and follow-up audits,

- Compiling ongoing risk assessments and risk assessment reports as required by the Works,
- Convening of regular safety meetings with the Safety Representatives,
- Accompanying and supporting the Employer or his Safety Agent during ad hoc audits,
- Compilation of monthly safety reports and statistics for the Employer or his Safety Agent,
- Implementation and maintenance of Training
- Maintenance of personal protective clothing and equipment
- Maintenance and/or removing and re-erecting of fences, signs and barricades
- Implementation and maintenance of safety administration
- Other Health and Safety Time-related Obligations

PSA19 ENVIRONMENTAL MANAGEMENT PLAN

The Contractor shall compile and comply with approved Environmental Management Plan.

PSA19.1 Fixed-Charge Items

Add the following Clause (Clause 8.3.6):

Unit

Compile approved Environmental Management Plan and Record of Decision..... Sum

The sum tendered shall cover all costs, overheads, profits and charges incurred in compiling of the Environmental Management Plan and Record of Decision.

PSA19.2 Time-related Items

Add the following Clause (Clause 8.4.7):

Unit

Compliance with Environmental Management Plan and Record of Decision..... Month

The sum tendered shall cover all costs, overheads, profits and charges incurred in complying with all the conditions of the approved Environmental Management Plan and Record of Decision.

PSAB EMPLOYER'S AGENT'S OFFICE

PSAB1 NAME BOARDS (Clause 3.1)

Two name boards confirming to the standard requirements of the Regional Bulk Infrastructure Programme (RBIG) and as shown on drawing 2024-08/G/D/003 must be provided and erected at points to be designated by the Employer's Agent during the duration of the Contract for this purpose.

PSAB2 OFFICE BUILDING (Clause 3.2)

An office building as shown on drawing 2024-08/G/E/001 shall be provided and maintained for the duration of the Contract. The following variations and additions to the requirements of SANS 1200AB shall apply:

- a) The office shall have a floor area of at least 36 m².
The office to be divided into two equal sections with access between offices.
- b) The minimum glazed area shall be 6 m².
- c) The minimum window opening shall be 4.0 m².
- d) Fourteen (14) boardroom chairs with table/s to suite and 2 office chairs and one (1) desk of 1.5 m² are required in addition to those furnishings specified in SANS 1200AB.
- e) Rack for hanging contract drawings shall be provided.
- f) One 15 amp plug point is to be installed within each of the offices.
- g) A 0,75kW air conditioner with suitable power supply (reverse cycle/compressor type) is to be installed in each of the offices.

PSAB3 TELEPHONE (Clause 5.4)

A Cellular telephone(s) of an approved type shall be provided for the exclusive use of the Employer's Agent's Representative(s) for the duration of the Contract.

The Contractor shall make all arrangements necessary for the provision of the cell phone, and shall pay all necessary deposits and installation costs that may be applicable. A prime cost item has been allowed in Schedule 2 to cover all call and rental costs that are associated with the provision of this facility for the Employer's Agent's Representative(s).

PSAB4 PERSONAL COMPUTER

The Contractor shall provide and maintain in good working order two personal computers and printers on site for the exclusive use of the Employer's Agent's Representatives with the following specifications:

- (a) Computer:
 - Dell Vostro 5568
 - I7-7500U Processor

- 15.6-inch FHD (1920 x 1080)
- 8GB, 2400MHz, DDR4
- 1TB 5400rpm Hard Drive
- Windows 10 Pro (64bit) English
- NVIDIA(R) GeForce(R) 940MX 4GB GDDR5
- 3Yr Basic Warranty

(b) Printer

- HP Laserjet Pro 400
- M477fdn
- Colour Printer or Similar Approved

PSAB5 SURVEY ASSISTANTS (Clause 5.5)

Two suitably educated and trained survey assistant shall be made available for the sole use of the Employer's Agent's Representative(s) for the duration of the construction.

PSAB6 SURVEY EQUIPMENT

The survey equipment listed hereunder shall be made available for the exclusive use of the Employer's Agent for the duration of the Contract. Equipment shall be insured and maintained for the full duration of the Contract.

(a) Automatic surveyor's level complete with tripod and leather carry case such as Zeiss N1-2 or equivalent	1 No
(b) Nylon-coated steel surveyor's tape 100m long and 10mm wide	1 No.
(c) 5m long steel tape	1 No.
(d) 5m long three-piece telescopic survey staves (metric double-face) complete with angle bracket level	1 No.
(e) 2kg hammer with rubber handle	1 No.
(f) Steel pegs, 300mm long and 12mm dia.	100 No.
(g) Measuring wheel	1 No
(h) 100m long 50 kg strength fish line	1 No.
(i) One-metre-long spirit level	1 No.
(j) DCP	1 No.
(k) 100m Dip meter (water level meter)	1 No.

PSAB7 CARPORTS

The Contractor shall provide two carports of at least 30 m² each, which is so constructed as to provide shelter for the vehicles from the rain and the direct rays of the sun. The floor shall consist of crushed aggregate to alleviate dusty and muddy conditions.

PSAB8 DIGITAL CAMERA

The Contractor shall provide, insure and maintain for the full duration of the contract an approved digital camera complete with data zoom features.

PSAB9 LABORATORY

No laboratory buildings or fittings are required by the Engineer. The Employer's Agent will arrange separately with a commercial laboratory or designate specialists to carry out all acceptance control testing including cube testing, but excepting for density control tests. See clause PSA12 for detail of the Prime Cost item provided for this purpose. The Contractor shall remain responsible for carrying out the process control testing that is required by the Standardised, Particular and Project Specifications.

The Contractor shall supply the following equipment and maintain same for the duration of the Contract:

- (a) Twelve concrete cube moulds, 150mm nominal size.
- (b) All necessary equipment required for adequate sampling **and curing** of concrete so to ensure contractor's process control.
- (c) Concrete slump cone (2 No).

PSC SITE CLEARANCE

PSC1 DISPOSAL OF MATERIAL (Sub-Clauses 3.1 and 8.2.1)

Materials arising from clearing and grubbing shall be disposed of at a site to be arranged by the Contractor, in accordance with the provisions of Clause PSD4. Trees and stumps necessarily removed shall not be burnt unless authorised by the Employer's Agent, but shall be cut and stacked at areas designated by the Engineer.

PSC2 AREAS TO BE CLEARED AND GRUBBED (Clause 5.1)

The areas to be cleared and grubbed will be indicated by the Engineer. Should a portion or the whole of the site have been cleared and grubbed by nature or by others prior to the start of construction, then no clearing and grubbing will be ordered or payment made with respect to the applicable portion of the site.

PSC3 PRESERVATION OF TREES AND SHRUBS (Sub-Clause 5.2.3)

The penalty in respect of each individual tree and shrub designated as a tree or shrub to be preserved that is damaged or removed unnecessarily by the Contractor, shall be R5 000. Trees that fall within areas upon which the Works are to be constructed or within areas that the Contractor must occupy for the proper construction of the Works will not be designated for preservation.

PSC4 OVERHAUL (New Sub-Clause)

No overhaul will be payable on the disposal of material arising from clearing and grubbing.

PSDA EARTHWORKS (SMALL WORKS)

PSDA1 FREEHAUL AND OVERHAUL (Clause 5.2.5.1)

The freehaul distance for all material to be imported or spoiled shall be considered as 5 km from the outer ring of the project area.

PSDA2 BORROW PITS (Clause 5.2.2.2)

The Contractor shall be responsible for making his own arrangement regarding the provision of pipe bedding material, if required, from commercial borrow pits. The Contractor shall provide in his tender prices for all royalties payable and for the transport of the material to site. Borrow materials obtained from designated borrow pits shall be approved by the Employer's Agent.

The Contractor shall be responsible for the opening up and closing down of designated borrow pits. The Contractor shall in all respect comply with the various requirements of SABS 1200D and of the Minerals Act (No 50 of 1991 in relation to the opening up, closing down and utilisation of borrow pits. Except for the crushing or screening of materials in accordance with the written instructions of the Employer's Agent, no additional payment will be made for excavating or processing material from designated borrow pits, regardless of the hardness or other properties of the material.

PSDA3 DISPOSAL OF SURPLUS MATERIAL (Sub-Clause 5.1.4.3 and 5.2.2.3)

Add the following to the sub-clause:

"All surplus or unsuitable materials arising from trench excavations shall be spoiled and neatly spread and levelled along the route of the pipeline so as not to interfere with future works nor to disrupt the natural overland flow of storm runoff. Rocks, trees, debris and other unsightly material from trench excavations shall be disposed of at a suitable spoil site. Where the pipeline is laid within a road reserve the route of the pipeline shall be finished neatly to be flush with the natural ground level or finished sidewalk level as may be applicable.

The Contractor shall be responsible to make his own arrangements for a suitable spoil site".

PSDA4 HAUL AND SPOIL ROADS

The contractor shall be responsible for the provision of all haul and spoil roads that he may require for the construction of the works and that the Employer's Agent may approve. No additional payment will be made in this regard.

PSDB EARTHWORKS (PIPE TRENCHES)

PSDB1 MATERIALS (Clause 3)

PSDB1.1 Methods of classifying (Clause 3.1)

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

PSDB1.1.1 Save and except in respect of those portions of the Works which are specified in Portion 1 of the Project Specifications to be executed utilising Labour-Intensive Construction Methods, the Contractor may use any method he chooses to excavate any class material, but his chosen method of excavation shall not determine the classification of the excavation. The Employer's Agent will determine the classification of the materials.

PSDB1.1.2 The classification will be based on the specified construction methods, inspection of the material to be excavated and on the criteria given in PSDB1.2 below, as applicable.

PSDB1.1.3 Where the utilisation of Labour-Intensive Construction Methods is specified in Portion 1 of the Project Specification for certain classes of excavation only, the material for those classes of material to be excavated using Labour Intensive Construction Methods will be classified in terms of PSDB1.2.2 and for those classes of excavation which are not required to be executed by Labour Intensive methods, classification will be based on the criteria given in PSDB1.2.1

(i.e. Where it is specified that the excavation of soft materials only shall be executed using Labour Intensive Construction Methods, the classification of the soft material to be so excavated will be based on the criteria given in PSDB1.2.2(a) and the Contractor will be required to excavate all such soft material by Labour Intensive methods. However, when the material is classified in terms of PSDB1.2.2(b) to be "intermediate" and is thus no longer required to be excavated by Labour Intensive methods, the classification of the material not required to be excavated using Labour Intensive methods will be based on the criteria given in PSDB1.2.1 (thus a material classified as "intermediate" in terms of PSDB1.2.2(b) may in terms of PSDB1.2.1 be deemed to be "soft" and will be measured and paid as such under such circumstances.).

PSDB1.1.4 All tools and equipment referred to in PSDB1.2 shall be in good mechanical and operational condition.

PSDB1.1.5 "Efficiently" as used in PSDB1.2.2(a) - (c) shall be taken to mean "in a manner that can be reasonably expected of a Contractor, having regard to the production achieved".

PSDB1.1.6 The classification of material other than "soft excavation" shall be agreed upon before excavation may commence.

PSDB1.1.7 The Contractor shall immediately inform the Employer's Agent if and when the nature of the material being excavated changes to such an extent that a new classification is warranted for further excavation. Failure on the part of the Contractor to advise the Employer's Agent in good time shall entitle the Employer's Agent to reclassify, at his discretion, such excavated material.

PSDB1.2 **Classes of Excavation** (Sub-Clause 3.1)

Add the following new sub-clause:

PSDB1.2.1 **Classes of excavation where Labour Intensive Construction Methods are NOT specified**

The excavation of material will, in the case of work which is NOT required in terms of the Contract to be executed utilising Labour-Intensive Construction Methods, be classified according to SANS 1200D for the purpose of measurement and payment.

Add the following new sub-clause:

PSDB1.2.2 **Classes of excavation where Labour Intensive Construction Methods are specified**

Classes of excavation where Labour Intensive Construction Methods are specified.

The excavation of material will, in the case of work which is required in terms of the Contract to be executed utilising Labour Intensive Construction Methods, be classified in accordance with Table B.1 and Table B.2 in Annex B of SANS 1921-5:2004, i.e. based on the number of blows which causes a dynamic cone penetrometer (DCP) to drop by 100mm. Failing such classification, the excavation of material will be classified in accordance with Table B.3 of the same document (pro-rated to an 8 hour task). The said appendix makes provision for the following material classifications:

- a) Soft excavation, Class 1,
- b) Soft excavation, Class 2,
- c) Soft excavation Class 3,
- d) Intermediate excavation, and
- e) Rock excavation.

For soft excavation classes 1, 2 or 3, the excavation of isolated boulders not exceeding 0,04 m³, will be considered to be included in their respective category. The excavation rates are those of an average able-bodied labourer or group of such labourers.

The following definitions will in addition to those provided in Table B.1 apply:

- a) Intermediate excavation

Intermediate excavation shall be excavation in material which requires ripping or loosening by mechanical means prior to removal of the loosened material utilising the methods described for Soft material.

b) Hard rock excavation

Hard rock excavation shall be excavation of undecomposed boulders exceeding 0,04 m³ and excavation in solid rock occurring in bulk or in banks or ledges, which requires loosening or breaking up by drilling, wedging, splitting or blasting or by other approved quarrying methods, prior to being excavated and removed from the excavation utilising only picks, crowbars, shovels and similar hand tools.

(NOTE : Such excavation generally includes materials such as formations of un-weathered rock that can be removed only after blasting.)

The Employer's Agent will instruct which portions of the Works, based on evidence provided from trial holes excavated at approximately 200 m spacing by the Contractor for this purpose, will be executed utilising Labour-Intensive Construction methods. The Trial hole shall be excavated to trench depth utilising a Cat 416 Backactor or similar."

PSDB2 PLANT

PSDB2.1 Excavation Equipment (Sub-Clause 4.1)

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

- a) To the extent that the provisions of the Specifications permit the use of mechanical plant and equipment in the excavation of trenches, the Contractor may use trenching plant that will excavate to a width such that the side allowance does not exceed the appropriate value specified in 5.2 by more than 50%, except that where in terms of the Project Specifications or of the Drawings, the base width of a trench for a pipeline or a portion of a pipeline is not to exceed the minimum base width or a stated value, the Contractor may use trenching plant which will produce the required trench width or he shall accept the responsibility for all costs incurred in strengthening the relevant pipeline.

PSDB2.2 Compaction Equipment (Sub-clause 4.2)

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

PSDB2.2.1 Machine Compaction

- (a) Where the compaction is not required to be executed utilising Labour-Intensive Construction methods, or where the utilisation of mechanical compaction plant and equipment is allowable in terms of the contract, the contractor may use mechanical

compaction equipment, but he shall select such equipment and operate it in such a manner that the pipeline, duct or cable is not stressed or damaged during the compaction operation.

- (b) Machine compaction shall not be used directly above the pipe until sufficient backfill has been placed to ensure that machine compaction loads transmitted to the top of the pipe are no greater than would be imposed by normal traffic loads over a pipeline with cover of 600mm.

PSDB2.2.2 Labour Intensive Construction Methods

- (a) Unless and to the extent as may be otherwise provided in Portion 1 of the Project Specifications, the contractor shall, in the compaction of materials by Labour Intensive Construction methods, utilise only hand held manually powered tampers, rollers and similar compacting hand tools and equipment.
- (b) Compaction shall be carried out in such a manner as to ensure that the pipeline cable or duct is not stressed or damaged. The material above the pipe shall not be compacted until sufficient backfill has been placed to ensure that the compaction loads transmitted to the top of the pipe are no greater than would be imposed by normal traffic loads over a pipeline with cover of 600mm.

PSDB3 ACCOMMODATION OF TRAFFIC (Sub-Clause 5.1.3)

Traffic must be accommodated along construction works which falls within or adjacent to any road reserve.

The Contractor shall tender a lump sum in applicable Schedule for accommodating traffic during the duration of the Contract, which sum shall cover all his obligations in this regard, including but not limited to temporary barricades; the erection and re-erection of existing and/or temporary traffic signs; lights and flagmen for the guarding and protection of the Works; and for making all necessary arrangements with the applicable traffic authorities. Payment shall be made monthly pro-rata to the overall progress of the Works.

If crossing of the road in half widths is allowed, the road shall remain continuously open to traffic. The Contractor shall make provision to ensure the safe passage of traffic using this public road whilst installing the pipe through the road, and to ensure that any disruption to the public is kept to a minimum providing safe detours when so instructed by the Engineer. Each half width shall be completed in one day. No open trenches will be allowed overnight. If the half width is not completed by 16:00 the trench shall be backfilled, in which case the Contractor shall re-excavate the trench at a later stage to complete the work at his own expense. All detours and signs shall be erected and maintained in accordance with the latest issue of Road Signs Note 13 as issued by CSRA and CUTA.

PSDB4 EXISTING SERVICES (Sub-Clauses 5.1.4)

Where any existing service occurs within the specified trench excavation, and the presence of such service is known before being uncovered, then the protection of the service will be scheduled and measured as provided for in Clause 8.3.5 of 1200DB. Only known services (as defined in Clause 5.4 of 1200A) shall be measured for payment.

Where an unknown existing service is damaged during construction, and the Employer's Agent orders that the Contractor should undertake the repair of such service, then such repair will either be measured and paid as dayworks or alternatively as a contractual variation in terms of Clause 6.4 of the General Conditions of Contract.

No construction activity which may affect the integrity of telephone or electrical poles or stays may be carried out without the prior written approval of the Employer's Agent, which approval shall only be given subject to the acceptance of a *modus operandi* that will ensure the integrity of such structures during construction.

PSDB5 TRENCH WIDTHS (Sub-Clauses 4.1 and 5.2)

Trenches in general shall not exceed the widths laid down in Sub-Clause 8.2.3. If trenches exceed the specified width the Contractor shall be liable for the cost of any thicker pipes or more expensive bedding which may be required as a result of the additional trench width.

PSDB6 TRENCH BOTTOMS (Sub-Clause 5.5)

Replace the first paragraph of this sub-clause "Material that compacted as directed" with the following :-

Where a firm foundation cannot be obtained at the grade indicated due to soft or unsuitable material, the Employer's Agent may instruct the Contractor to remove such unsuitable material and to backfill the excess depth with approved selected material or concrete, as directed by the Employer's Agent in each particular case, at the cost of the Employer. Backfill other than concrete, shall be placed in layers of 100mm un-compacted thickness, each layer thoroughly compacted to the entire satisfaction of the Employer's Agent, to provide adequate support for the pipe bedding to be placed on top of it.

Should the Contractor remove more ground than is required to secure the proper grade of the pipeline, the Contractor must, at his own cost, backfill the excess excavation with approved selected material or concrete, as directed by the Employer's Agent in each particular case.

PSDB7 DISPOSAL OF EXCAVATED MATERIAL (Sub-Clauses 5.6.3 and 5.6.4)

All surplus or unsuitable materials arising from excavation shall be disposed of in accordance with Clause PSDA3.

PSDB9 FREEHAUL AND OVERHAUL (Sub-Clause 5.6.8)

The provisions of Clause PSDA1 shall apply.

PSDB10 AREAS SUBJECTED TO TRAFFIC LOADS (Clause 5.7.2)

The requirements of Clause 5.7.2 shall apply to all pipes crossing roads and streets whether the roads and streets are to be constructed under this Contract or to be constructed at some time in the future.

The measurement and payment will apply to the full trench width. Pipes and sleeves crossing streets or paved areas will be measured and paid for to a length equal to the width of road or length of pavement crossed plus 1,4 m either side of the travelled edges.

Compaction of pipe trenches running parallel less than 1,4m away from the edge of the roadway shall be considered areas subject to traffic loads or where instructed by the Employer's Agent.

PSDB11 REINSTATEMENT OF EXISTING BITUMEN SURFACED ROADS (Clause 3.6 and 5.9.4)

Pipe trenches through the existing bitumen surfaced roads shall be reinstated with a 150mm upper selected subgrade layer compacted to 93 % mod AASHTO density, followed by a 150mm sub base layer compacted to 95 % mod AASHTO density and a 150mm graded crushed stone base compacted to 98 % of mod AASHTO density. The road shall be provided with a 40mm thick asphalt seal.

The upper selected subgrade layer shall have a CBR of at least 15, a grading modulus of at least 0.75 and a maximum PI of 12. The sub base shall conform to SANS 1200 ME and the base to SANS 1200 MF.

PSDB12 MEASUREMENT AND PAYMENT (Clause 8.3.2)

PSDB12.1 Basic Principles (Clause 8.1)

Add the following to the sub-clause 8.1.2(a):

Payment for the excavation and backfilling of trenches shall be made at the tendered rates and at the following stages of the construction:

- i) upon completion and approval of the trench bottom, prior to bedding: 40 %
- i) upon completion and approval of top of selected backfill: 70% (cumulative)
- ii) upon completion and approval of the mainfill: remaining 30 %.

PSDB12.2 Excavation (Sub-Clause 8.3.2)

Excavate, in all materials for trenches 0 – 1.0 m wide, backfill, compact and dispose of surplus material utilising Conventional Construction methods:

(a)	up to 1.5 m in depth	m ³
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Extra over the above for:

(1)	Intermediate material	m ³
(2)	Hard rock excavation	m ³
(3)	Backfill and compact by means of Labour Intensive Construction methods	m ³
(4)	Disposal of surplus material by means of Labour Intensive Construction methods within 20 m from the source of spoil material using wheel barrows	m ³

Backfill should be in 200 mm thick layers compacted to 90% Mod AASHTO.

PSDB12.3 Excavation of Trial Holes

Excavation of trial holes as described in PSDB1.2.2 will be measured by number and shall include for backfilling after inspection.

PSDB12.4 Stone Bedding

Stone bedding will be measured per cubic metre under the appropriate item in SANS 1200LB. Type A bedding (crushed stone wrapped in a geotextile blanket) shall be measured per linear metre along the centreline of the trench. The provision, operation and removal of (a) de-watering pump where authorised by the Employer's Agent will be measured as day works under the appropriate item in Schedule 3.

PSDK GABIONS AND PITCHING

PSDK1 GEOTEXTILE (Sub clause 3.1.4)

Shall be Kaytech Geotechnical Fabric U24, or similar approved.

PSDK2 PITCHING (Sub clause 3.2.1.2)

Type of pitching shall be grouted Ordinary Stone Pitching, unless otherwise instructed by the Engineer.

PSGA CONCRETE (SMALL WORKS)

PSGA1 CEMENT (Sub-Clause 3.2.1)

Only the use of Ordinary Portland Cement to SANS 471 will be permitted.

PSGA2 CONCRETE FINISHES (Sub-Clause 4.4.2)

Concrete against which earth will be backfilled shall be classified as rough. All exposed concrete surfaces shall be classified as smooth. Degree of accuracy II shall prevail.

PSGA3 STRENGTH CONCRETE (Sub-Clause 5.4.1.5)

The grade of concrete and nominal size of aggregate shall be as specified on the Drawings. The successful tenderer will be required to submit samples of the coarse and fine aggregate, which he proposes using, to the Employer's Agent's Representative(s) for tests regarding the suitability of such aggregates. The Contractor shall prepare trial mixes. These mixes shall be designed for vibration. All data and reports prepared by the Contractor shall be submitted to the Employer's Agent for information and approval prior to the commencement of concreting operations.

PSGA4 ANCHOR AND THRUST BLOCKS

At tees, bends, terminal valves, end caps, and where otherwise directed, anchor/thrust blocks shall be constructed to dimensions ordered, shown on the Drawings or agreed to by the Engineer. Unless otherwise specified, anchor/thrust blocks and pedestals shall be constructed of prescribed mix 15/37.5 concrete.

The concrete shall be well punned round the pipe and, if in trenches, against the undisturbed faces and bottom of the trench. Backfilling behind or under thrust faces will not be permitted. Excess excavation shall be replaced with the prescribed mix concrete given above for anchor/thrust blocks at the Contractor's expense, unless an item is scheduled to cover payment of over break. Care shall be taken to leave the joints accessible. No anchor/thrust blocks and pedestals shall be concreted until the approval of the Employer's Agent has been obtained.

Anchor and thrust blocks will be measured by volume of concrete; the rate tendered shall include for any form work required constructing the block.

Should the Contractor offer an alternative method of coupling involving flexible joints, he shall design suitable thrust and anchor blocks in order to prevent movement of the pipeline under operating and test conditions. The working and test pressure to be used by the Contractor for the calculation of anchor and thrust blocks shall be in accordance with the design information that is issued together with the tender. The earth bearing pressure to be used for the

calculation of anchor and thrust blocks shall be based on field tests. The factor of safety to be used in calculating the above shall be 2.5.

PSGA5 GROUTING TO MACHINE AND STRUCTURAL BED PLATES (Sub-clause 5.5.13)

PSGA5.1 Materials

- a) Water. Water for grout shall comply with the requirements given in sub-clause 3.3 of SANS 1200G.
- b) Aggregates. Notwithstanding the requirements of Sub-clause 3.4.1 of SANS 1200G, the grading of fine aggregate (sand) and coarse aggregate (stone or pea gravel) shall conform to the gradings given in Tables 1 and 2, respectively, below.
- c) Cement. Cement shall be ordinary Portland cement complying with SANS 471.
- d) Admixtures. Admixtures shall comply with the requirements of Sub-clause 3.5 of SANS 1200 G, and shall have a proven record of satisfactory performance under conditions encountered in the North West Province.
- e) Proprietary Grouting Materials. Unless otherwise approved by the Employer's Agent, Proprietary Grouting Materials shall be obtained ready mixed in sealed pockets as supplied by the manufacturers.

Table 1 - Sand		Table 2 - Stone or Pea Gravel	
1	2	1	2
Test sieve Nominal aperture size, mm	% Passing (by mass)	Test sieve aperture size, mm	% Passing (by mass)
9.5	100	9.5	100
4.75	95-100	4.74	95-100
1.18	45-65	2.36	0-5
0.3(300)	5-15		
0.15(150)	0-05		

* Portland cement (ordinary, rapid-hardening, and sulphate-resisting).

PSGA5.2 Preparation and Procedures

- a) Before a machine or structural bed plate is placed on the concrete the following shall be carried out:
 - 1) All defective concrete, laitance, dirt, oil, grease and loose material shall be removed from the concrete foundation by bush-hammering, chipping, or other means until sound clean concrete is obtained. The surface of the foundation shall be scabbled, but shall not be so rough as to interfere with proper placing of the grout. All foundation bolt sleeves shall be cut out, or cut off flush if the sleeves cannot be removed. The top of the foundation shall be reshaped if necessary.
 - 2) The underside of each steel base, particularly in the bearing areas, shall be cleaned and any burrs and ragged edges removed before the base is placed in its final location.
 - 3) All holding-down bolt sleeves shall be thoroughly cleaned of any materials that may prevent the grout from flowing freely to the bottom of the bolt sockets.
- b) The base shall be properly aligned and levelled and shall be maintained in that position during grouting.
- c) After the machine or structural bed plate has been placed the following precautions shall be observed:
 - 1) Shimming shall be kept to a minimum. Steel plates shall be used for packing and shall be ground to the required thickness, where necessary.
 - 2) Before grouting is started all loose dirt, oil, grease and other foreign matter on the surface of the foundation, the underside of bed plates, and in the bolt holes shall be removed by means of compressed air or other approved means. The surface of the foundation slab shall be thoroughly saturated with clean water and free water shall be removed from the surface and the bolt holes just before the grout is placed.
 - 3) The grouting shall not be carried out until the alignment of all units to be grouted has been checked and approved by the Engineer.
 - 4) Special care shall be taken with grouting in hot or cold weather to ensure proper setting and gain of strength and, in the case of Proprietary Grouting Materials, by having ice or hot water available, as the case may be, in accordance with the instructions of the manufacturer. Enclosures shall be provided for the grout such that, until it has set, its temperature will be in the

range 15-27°C. Shields to protect the grout from the sun and from hot winds shall be provided by the Contractor when so ordered.

PSGA5.3 Form work

Form work for grouting shall comply with the applicable requirements of Sub-clause 5.2 of SANS 1200 G. Forms shall be caulked where necessary. Adequate clearance between forms and bed plates shall be provided to enable the grout to be worked into place.

PSGA4.4 Mixing (All free-flowing grouts except epoxy grouts)

The grout shall be mixed to a homogenous uniform mixture and delivered ready for placing at a temperature between 15°C and 25°C.

The materials and water shall be mixed in a mortar mixer for at least 3 min. or, in the case of small jobs only, shall be thoroughly mixed by hand, the entire mass being turned over enough times to ensure even distribution of its components.

The mixing shall be done as close as possible to the place(s) where the grout is placed. No more grout shall be mixed at any one time than can be placed in a period of 20 min. After the grout has been mixed it shall not be retempered by the addition of water.

PSGA4.5 Grouting (All free-flowing grouts except epoxy grouts)

The grout shall be placed quickly and continuously to avoid the undesirable effects of over-working. (These effects are segregation, bleeding and breaking-down of initial set). The method of placement shall be subject to approval. The means of placing the grout shall be such that the grout will completely fill the space to be grouted, will be thoroughly compacted, will be free of air pockets and will have evenly distributed contact over an area in excess of 80 % or, in the case of expanding grout, 95 % of the bearing area of the item to be supported.

Wherever applicable, grout shall be placed from one side only and where this is not practicable, care shall be taken to ensure that any entrapped air is released. After the grout has taken its initial set:

- a) the forms shall be removed;
- b) excess grout shall be so cut away as to leave a smooth and neatly finished job;
- c) except where the grout is intended to provide resistance to side thrust, all edges shall be trimmed at 45° to the vertical, from the bottom edge of the bed plate; and

- d) all excess grout on or about the bed plate shall be removed.

Damage to paint work, if any shall be repaired within 24 hours. Packing plates, shims and other levelling devices shall remain in position.

PSGA4.6 Dry-packed grout (Standard dry sand and cement grout)

Dry-packed grout shall have a minimum compressive strength at 28d of 20MPa. The quantity of water after placing shall be kept to a minimum consistent with placing conditions, and the cement, sand and, where applicable, pea gravel proportioned by mass shall be as follows:

- a) Where the clearance between bed plate and foundation is 25 mm or less : 1 part of Portland cement, and 2 parts of sand;
- b) Where the clearance exceeds 25 mm : 1 part of Portland cement, 1 part of sand and 1 part of pea gravel. Dry-packed grout shall be rammed by means of tamping rods against form work placed along three sides of the bed plate.

PSGA4.7 Non-shrink grout with metallic aggregate

The manufacturer instructions shall be observed when non-shrink grout with metallic aggregate is used.

Where the clearance between the bed plate and the foundation is less than 50 mm a sand-based mix shall be used. Where the clearance exceeds 50 mm the Employer's Agent may order a mix with a base of sand plus pea gravel to be used.

PSGA4.8 Expanding grout with powdered aluminium additive

The manufacturer instruction shall be observed when the expanding grout powdered aluminium additive is used.

Where the clearance between the bed plate and the foundation is less than 25 mm, a sand-based mix shall be used. Where the clearance exceeds 25 mm the Employer's Agent may order mix with a base of sand plus pea gravel to be used.

Each batch shall be mixed for at least 6 minutes after the powdered aluminium has been added. Where a ready-mixed grout is used, the powdered aluminium shall be added at the placing site and the batch mixed as specified. Grout shall be placed within 45 minutes after the addition of the powdered aluminium.

The Contractor shall not use powdered aluminium additive when the ambient temperature is below 5°C.

PSGA4.9 Epoxy grout (epoxy mortar type only)

The manufacturer's instructions shall be observed when an epoxy grout is used.

PSHA STRUCTURAL STEEL (SMALL WORKS)

PSHA1 GRADE OF STEEL (Sub-Clause 3.1.1)

Structural cold-formed steelwork to be to Grade 43A or 43B with the minimum properties as tabled in Table B-2 of SANS 0162-1982.

Structural hot-rolled steelwork to be to Grade 300W with the minimum properties as tabled in "Steel design date: No. 6" of the South African Rolled Steel Producers Co-ordinating Council and the South African Institute of Steel Construction.

PSHA2 SHOP DRAWINGS (Sub-Clause 5.1.2)

The contractor is to provide shop details.

Steelwork generally of welded construction with site connections bolted:

All holes 18 dia. for M16 bolts

All gussets ex 8 mm U.O.S.

All welds, 6 mm fillet

The Employer's Agent must be notified, (at least 72 hours before hand) of the completion of the fabricated steelwork at the contractor's workshops, to enable him to make an inspection if he so desires. The fabricated steelwork, thus to be inspected shall be in its prepared specified state immediately before the application of prime coat painting.

PSHA3 WELDING (Sub-Clause 5.3.4)

Delete this clause in its entirety and add the following clause:

Welding shall be done in accordance with the relevant requirements of SANS 0162 BS5135 and AWS.D.1/18 (American Welding Society).

Welding shall be Grade B welding.

The qualification of welders shall be in accordance with the relevant clauses of the above standards, and specifically SANS 044 Part III and shall be Grade I welders. Grade 2 welders shall be permitted only with the Employer's Agent's approval.

The Contractor shall provide evidence, acceptable to the Employer's Agent, that welding procedures and welders have been tested in accordance with the requirements of AWS D1.1.

PSHA4 PROTECTIVE TREATMENT (Sub-Clause 5.3.9)

PSHA4.1 Shop Painting

- a) Steelwork after fabrication shall be wire brushed to a finish equal to or better than Grade St3 or SIS 05 59 00.
- b) Within 4 h after the completion of wire brushing, 2 coats of an approved primer such as a Type II. Grade 2 red lead, on a zinc chromate or red oxide (see Sub clause 3.7 of SABS 1200 H) shall be applied to provide a dry film of thickness between 25 and 30 micron. Except that red lead shall not be sprayed, a primer may be applied by means of brush, roller, or spray.

PSHA4.2 Painting after erection

- a) After the erection of steelwork, all areas where the primer coat has been damaged shall be touched up as specified in PSH2.1.
- b) An intermediate coat of an approved general-purpose alkyd undercoat shall then be applied to provide a dry film of thickness between 25 and 30 micron. The paint may be applied by means of brush, roller, or airless or conventional spray.
- c) Provided that the undercoat is touch-dry within 2 hours, the finishing coat may be applied the following day. One coat of an approved alkyd enamel, the non-volatile vehicle of which contains at least 24 % authalic anhydride, shall be applied to provide a dry film of thickness between 25 and 30 micron.
- d) The total dry film thickness of the paint and primer coats shall be between 70 and 100 micron.

PSHA4.3 Galvanising

Where galvanising is specified, it shall be carried out by the hot dip process in accordance with SABS 763-1977 (or latest amendment).

The minimum thickness of the zinc coating shall be for general application and shall in all cases be at least 65 micron, thus giving a minimum equivalent mass per unit of 455 g/m².

PSHA5 SITE WELDING (NEW CLAUSE)

No welding shall be permitted on site without the express approval of the Employer's Agent, with the exception of those details shown on the drawings as site welded.

PSHA6 CUTTING (NEW CLAUSE)

No oxy-acetylene or other gas cutting and bending will be permitted on site without the Employer's Agent's approval.

The Employer's Agent will have no hesitation in considering rejection of any relevant component, member or unit should oxy-acetylene or other gas cutting and bending, process be carried out by the Contractor without the Employer's Agent's approval.

PSHA7 ERECTION PROCEDURE (NEW CLAUSE)

The setting out of all holding-down bolts shall be accurately checked by the Contractor. Any discrepancies in excess of the permissible deviations of the positions of these bolts shall be reported immediately to the Employer's Agent.

The Contractor shall not be permitted to make any relevant adjustment in the steelwork without the Employer's Agent's approval. (Refer to paragraph 2 of PSHA6).

PSL MEDIUM PRESSURE PIPELINES

PSL1 WATER SUPPLY MAINS

The pipes to be used for pressure mains are as follows:

1. 63 mm and larger - Unplasticized Poly Vinyl Chloride (uPVC)
- High Density Polyethylene (HDPE) Type IV
 2. 50 mm and smaller - High Density Polyethylene (HDPE) Type IV
- a) Couplings for uPVC pipes to be watertight and be able to withstand the relevant test pressures, unless otherwise indicated. uPVC pipe fittings shall be cast iron or aluminium.
 - b) HDPE pipes shall confirm to SABS 533. Couplings for HDPE pipe fittings shall be compression fittings only.
 - c) Steel fittings and specials shall be manufactured in accordance with the requirement of BS 534 but to the dimensions shown on the detailed layouts. Steel pipe sections shall be 6mm thick grade A complying with the requirements of SABS 719.
 - d) Cast iron fittings and specials shall be, manufactured in accordance with the requirements of 1200L, clause 3.3.
 - e) Flexible slip-on type Viking Johnson couplings shall be complete with removable centre registers (locating lugs). The area surrounding the locating lug shall be built up to prevent damage to the female thread on the Viking Johnson coupling.

PSL2 GRADE OF STEEL FOR STEEL PIPES

All steel piping shall be made electric welded low carbon steel pipes in accordance with the requirements of SANS 719-1971 and BS 534-1966. Where non-standard specials have been detailed on the drawings, such dimensions shall be adhered to. All flanged pipes and fittings shall have flanges as specified, and shall be supplied complete with all packings, nuts, bolts and washers. Steel piping shall be made from Grade A steel. The minimum wall thickness for steel pipes shall be 6 mm. Viking Johnson couplings complete with all seals, bolts, nuts, etc. shall be used where detailed. Where new installations couple up with existing, the Contractor shall ascertain what the flange drillings are the same as all existing fittings prior to any placement or order and shall confirm this information with the Employer's Agent's.

PSL2 PIPE COUPLINGS FOR OTHER PIPES (Additional to clause 3.7)

PSL2.1 Polyvinyl Chloride

Pipes and fittings shall be supplied with factory fitted 'Z type' couplings. Solvent welded joints will be permitted for pipes of diameter smaller than 50 mm. PVC pipe fittings shall be Aluminium or Cast Iron.

PSL2.2 Polyethylene

Pipes shall be supplied suitable for, and with compression or insert type fittings as scheduled. No screwed fitting shall be used without written approval. Polyethylene pipe fittings shall be Nylon.

PSL3 FIBRE-CEMENT PIPE FITTINGS (Clause 3.8.1)

Fibre Cement pipe fittings shall be Cast Iron or Steel. Where steel fittings are provided, they shall be adequately reinforced against ovalness (over the entire circumstances and width corresponding to half the width of the approximate standard AC coupling) by means of welded collars of minimum thickness 12mm.

PSL4 VALVES (Clause 3.10)

PSL4.1 Gate Valves

i) General

All gate valves in compliance with SANS 664, waterworks application, clockwise closing, with a non-rising spindle and plain thrust collar. Valves and flanges (if any) to be to the class specified.

Valves to be operated by either hand wheel, cap top and tee-key or extended spindle and hand wheel/tee-key. Operation to be specified.

Valves to be flanged or spigot ended as specified.

Note :

"As specified" will mean as described in the schedule of quantities.

In the event of no description in the schedule the following will prevail:

- Valves to be at least class 10 with a standard hand wheel operator and valves to be flanged.

ii) Gate valves of 300mm diameter or smaller

All gate valves falling into this category to be fitted with resilient seal, rubber lined gates similar to "Elypso compression-sealing valves".

PSL4.2 Butterfly valves

All Butterfly valves to be of the 'Boving' (or similar approved) resilient sealing type and shall be supplied complete with geared operator and hand wheel. All geared operators shall have horizontal spindles.

PSL4.3 Valve spindles

All extended valve spindles shall be supplied at both ends with cast iron tops for valve key operation. The spindle shall be fitted into the valve box with a bearing for easy operation. The lengths of extended spindles are to suit the dimensions of their installation positions, all spindles supplied supported at 4m max. intervals.

PSL5 STEEL FLANGES (Clause 3.8.3)

PSL5.1 All flanges to be drilled to SANS 1123 table 15 unless otherwise specified.

PSL5.2 All valve and hydrant tee flanges to be drilled as follows:

AIR VALVE SIZE (inlet dia. mm)	FLANGE OD (mm)	BOLTS no. x dia.	PCD
50	203	4 x M16	165
80, 100 and 150	SANS 1123	Table 15	

Flange holes to be drilled to allow exact alignment vertically and horizontally as detailed on the drawings of all pipe work and equipment.

PSL6 CORROSION PROTECTION (Clause 3.9)

PSL6.1 General

Protective coatings described in this sub-section shall not be measured for payment but shall be included in the rates tendered for piping, fittings, couplings and specials.

- a) All cast iron valves, cast iron or steel fittings and cast iron or steel specials shall receive a two-component solvent borne epoxy pipe coating and lining such as Copon KSIR 88 from Plascon or similar approved equivalent.

Surface preparation, application, testing and performance shall comply with the requirements of SABS 1217 type 1A, except that the minimum total dry film thickness shall be 300 micron.

Materials shall be applied in accordance with SABS 1217 and in accordance with the manufacturer's data sheet. Attention is drawn to the need for strict observance of the

manufacturer's minimum and maximum coating thickness and time interval between coats relative to ambient and steel temperatures.

The coating shall be applied in either two or three coats with either one or two coats being applied in the workshop. After installation any scratch or chip marks shall be touched up and the whole item covered with a further coat (or two coats) of coupon to give a total thickness of not less than 250 micron.

- b) All bolts, nuts and washers used for flanges and couplings shall be heavy duty galvanised (clause 3.9.5 of 1200L)
- c) All steel fittings and specials indicated for encasing in concrete shall be wire brushed externally and left uncoated for encasing in concrete. Lining shall be as described in (a) above.
- d) Steel fittings that are partly enclosed in concrete shall be coated internally as well as the exposed external part of the fitting up to 100 mm into the concrete encasement as described in (a) above.

PSL6.2 Mechanical preparation

The valves shall be rendered smooth and free from undercuts, protrusions, sharp edges and spatter. Edges should have minimum radius of 1 mm.

Cast materials shall only be cast in a mould coated with a suitable mould wash.

Castings shall similarly be ground smooth and surface blow holes accepted after mechanical inspection shall be filled with weld metals or an approved epoxy filler and ground down to a smooth surface.

PSL6.3 Surface Cleaning

Surfaces to be coated shall be abrasive blast cleaned in accordance with SABS 064, Section 4.3, especially Procedure 4.3.4, to the following parameters.

DESCRIPTION AND MATERIAL	BLAST MEDIUM	PROFILE MICROMETERS	CLEANLINESS SA	RESIDUE
Fabricated or cast-iron valves	Clean, fine non-metallic & non-recycled or metallic	Fabricated max. 75 Casting Max 50 Min 30	3	0.3%

Other preparation methods, where required or agreed upon shall also be in accordance with SABS 064 as described in the appropriate sections. Laminations, scabs and occluded scale which

become visible after cleaning shall be ground out and the ground area re-cleaned. Excessive grinding depth may be repaired by welding, or the metal shall be rejected at the discretion of the Engineer.

PSL6.4 Casting

The first cast shall be applied as soon as possible, but never exceeding 4 hours after blast cleaning if the relative humidity (RH) is below 70% or 2 hours if the RH is between 70% and 85%. Coating shall not take place if the RH is 85% or above, nor when the surface is less than 2 above dew point.

If unfavourable conditions prevent applications of the first coat, the surface shall be re-cleaned when conditions are acceptable.

Strict cleanliness between coats shall be maintained. The directions laid down by the specification and by the paint manufacturer for mixing, curing, use of solvents, suitable environmental conditions, and over-coating times shall be strictly adhered to. Adequate ventilation to remove volatile matter shall be ensured.

PSL6.5 Quality of coating

The fully cured coating system shall be uniform, smooth, glossy and have acceptable adhesion. Excessive runs and sags, wrinkling, bubbling, blisters, change in colour or gloss, excessive orange peel, dirt, dust or fluff occlusions and other visible defects shall not be permitted. Paint work showing evidence of entrapped solvents after full cure will also be rejected. No inter-cast lamination must take place.

The colour of each coat shall be different to that of the previous coat except where two finishing coats of the same colour are necessary to achieve colour uniformity.

All coating surfaces for water immersion or frequently wetted in service shall show no electrical insulation defects when tested in accordance with the inspection parameters.

Finishing coat colours.

In addition to the finishing coat colour, if specified, the colour recommended for identification marking in SANS 0140 shall apply. Where not specified, the selection of paint colours shall be decided.

All damage that occurs during handling, assembly, transport, storage and erection shall be repaired to the requirements of the specifications. All damage sustained during transport will be repaired by the Contractor.

Proprietary items

Components supplied already painted or protected e.g. gear boxes, etc., may be accepted in this condition provided that they meet the requirements of this specification in general.

Quality control by the Contractor

The Contractor shall produce his own quality control records and tests carried out during all stages of corrosion protection procedures. These shall be made readily available to the Department's Inspector.

PSL6.6 Paint Systems required

All valves and fittings shall be coated as follows:

SURFACE	COATING	THICKNESS (MICROMETERS)
Lining (inside surface)	Epoxy	300
Coating *outside surface)	(i) Epoxy plus (ii) Vinyl enamel colour Brilliant Green	200 25
Flange faces	Epoxy	125
Stainless steel components	Pickled and passivated with Duva chemicals or equivalent	-
Fasteners	Cadmium plated and dichromate (yellow) passivated	15 to 20

The epoxy applied shall be polyamide cured and preferably be solvent free in accordance with SANS 1217. Solvent containing epoxies will, however, be considered.

All external fasteners shall be Epoxy coated after assembly and testing.

PSL7 HANDLING AND RIGGING (Clause 4.1)

PSL7.1 Transportation

Pipes and valves shall be protected during transportation and handling against damages caused by impact, dropping, etc. Special care shall be taken during transportation to protect pipes. Rubber lined vertical posts shall be spaced on the sides of transporting vehicles to provide adequate support to the loaded pipes. Large diameter fibre cement and concrete pipes (that is, diameter above 800mm) shall be supported on supporting stools in transit. All pipes shall be inspected for defects immediately before laying and faulty pipes or pipes which have suffered damage which would affect their serviceability shall not be used in the Works.

PSL7.2 Off-loading and storage

Pipes which cannot be off-loaded by hand shall only be lifted by means of suitably approved broad band slings. The use of wire, chains, hooks, crowbars and similar items shall not be permitted and the pipes, fittings and specials shall not be handled in such a manner as could cause damage to occur.

Pipes, fittings and specials shall at no time be laid, stacked or rolled directly onto the ground but shall be supported on suitable padded cradles or other approved material near each end of the pipe, fittings or special. Particular care shall be taken where pipes with fitted couplings are handled or stacked to prevent any pressure on the couplings. Where loose AC-couplings are provided the couplings shall be stored flat on their sides and under no condition be rolled or stored in an upright position.

All PVC-pipe work as well as the rubber sealing rings in pipe couplings shall be protected from the elements to prevent deterioration of the pipe work.

PSL7.3 Inspection on delivery

The Employer's Agent's Representative will thoroughly inspect all pipes, fittings and specials delivered to the site but his acceptance of same as being in good condition shall not relieve the Contractor of any of his obligations or responsibilities under this Contract.

Materials rejected by the Employer's Agent shall be removed from the site and shall be replaced by other approved materials by the Contractor at his own expense.

PSL8 SETTING OUT (Clause 4.2)

Alignment of the pipes may be done either by means of infrared sighting equipment or by sight rails. The following method should be followed if alignment is to be done by sight rails :

Prior to the preparation of the pipe bedding, the Contractor is to erect sight rails of 38mm x 150mm timber at intervals of a maximum of 60m or at points of change of pipe gradient, whichever may be the lesser. These shall be supported by wooden posts on each side firmly fixed on solid ground and the rails shall be accurately placed in position as regards alignment and invert level of the proposed trench.

The centre line of the trench (i.e. pipeline) shall be denoted on each sight rail, both back and front by a single vertical line drawn therein, and the rail on either side of the centre line painted in two contrasting colours. The Contractor shall also provide boning rods of an approximate length marked in even decimetres for use in the fixing of the trench bottom to the correct line and level.

PSL9 LAYING AND JOINTS

No pipe laying shall commence on any particular section until the Employer's Agent has approved of the trenches and bedding. No pipes shall be laid in trenches with free standing water. The pipes shall be laid true to the lines, levels and grades shown on the drawings or ordered by the Employer's Agent, to within a tolerance specified.

The open ends of all pipes and fittings shall be suitably closed to prevent the ingress of soil or other matter into the pipes. After the pipes have been laid, they shall be inspected and checked by the Employer's Agent for grade, direction and line. If any pipes have been inaccurately laid, the work shall be rectified as ordered by the Employer's Agent at the Contractor's expense.

All valves and fittings are to be checked beforehand to ensure their operational order before being placed in the line. They are to be set correctly in position as indicated on the drawings or as ordered by the Employer's Agent, and where required, are to be supported by bedding or concrete supporting stools. Care shall be taken to ensure that no loose fill material or foreign matters enter the pipes or fittings. After the pipelines have been inspected and passed by the Employer's Agent, backfilling shall proceed and brought up evenly on both sides of the pipe with selected material as specified.

Jointing of pipes shall be carried out strictly in accordance with the manufacturer's instructions. Ends of pipes and joints shall be completely free of dirt and grit when the joints are assembled.

PSL10 BACKFILL

Following the inspection by the Employer's Agent with respect to the grade, direction and line, as well as the successful testing of the pipeline, the Contractor shall promptly refill trenches and excavations.

PSL10.1 Material and Method

The Contractor shall promptly refill trenches and excavations as soon as the works have been inspected, tested and passed by the Engineer.

The backfilling in contact with pipes and for a distance of 200 mm above the barrels of the pipes shall consist of selected material from the excavations, free from excess clay, vegetable matter and stones. Shortages of selected material in any section of a trench shall be made up free of additional cost by borrowing from adjacent excavations containing a surplus of suitable material.

The selected material shall be brought up in 150mm layers, uniformly moistened to the optimum moisture content to attain the specified compaction and shall be thoroughly compacted round the pipes and joints. Special care shall be taken in filling joint holes and the selected material

shall be firmly punned in, slightly moistened if required in order to ensure bearing for the length of each pipe.

Sufficient topsoil shall be set aside during excavation to form not less than the upper 150 mm of backfill material for re-establishment of vegetation.

In no case shall any filling be deposited in water. Trenches shall be kept free of water until backfilling has been completed. From above the top of the selected backfilling, unselected excavated material, excluding stones larger than 150 mm in any dimensions, shall be used for backfilling, which shall be compacted in layers not exceeding 150 mm.

Only equipment approved by the Employer's Agent shall be used for the compaction of the fill.

The superimposed loading resulting from the use of self-propelled or tractor-drawn compaction equipment shall not exceed the maximum external loading for any particular pipe in accordance with H20 Highway Loading as specified by the manufacturers.

The backfill shall be mounded to a height of 100 mm above ground level with gaps allowed at regular intervals for cross drainage.

Immediately after completion of the backfilling all surplus materials shall be levelled off adjacent to the pipeline.

Any settlement during the excavation of the contract and the period of maintenance shall immediately be made good by the Contractor with topsoil of the same type as that adjacent to the trench.

The Contractor shall fill in with approved material and consolidate all cavities caused by slips, rain, floorings, etc. or any other cause whatever at his own expense, to the satisfaction of the Engineer.

The Contractor shall make good promptly, to the entire satisfaction of the Employer's Agent at his own expense, during the whole period that the works are in his hands, including maintenance period and, as often as necessary, any settlement that may occur in the surface of roads, footpaths, private or public property, etc., caused by his trenches or excavations. He shall be liable for any accidents caused thereby and repair at his own cost any damage caused to property by such settlement.

During the execution of the Contract, the Contractor shall maintain a regular patrol, particularly after rains, of all completed backfilled excavations, in order to locate any subsidence, which he shall make good properly without any delay and shall not defer such action until complaints are received.

PSL11 TOLERANCES

The more stringent of SANS 1200 L 6.2 and 6.3, and the following relative deviation shall be applicable to pipe work.

- a) Relative Deviation laterally from line : 0,1% of distance between points.
- b) Deviation from gradient
 - Design gradient less than 1% : 0,04%
 - Design gradient greater than 1% : 0,08%

PSL12 PIPELINE MARKERS

A detail of the required concrete pipeline marker is included in the Annexures to the Specifications. Measurements will be per unit and the payment made accordingly shall be full compensation for the supply and installation of the pipeline marker.

PSL13 MARKING OF ROUTE AND POSITION

The route and position of reticulation and bulk supply mains shall be marked on the surface by one of the following methods:

- pipeline route markers
- standard service markers
- painted service marking

PSL15 STANDARD HYDRAULIC PIPE TEST (Clause 7.3)

Field test pressures shall be 1,5 times the recommended maximum working pressure for the class of pipe and/or valves, specials and fittings being tested.

PSL16 MEASUREMENT AND PAYMENT

PSL16.1 Principles

Measurements of the pipelines, specials and valves shall be as per the appropriate items in SANS 1200L i.e. Items 8.2.1, 8.2.2 or 8.2.3.

Payment shall be subdivided as follows:

- a) Supply of pipes to site - the percentage allowed for in the Appendix to the Form of Tender. (i.e. 80%)

- b) Successful testing of pipeline - remainder of the tendered amount, save for the normal retention.

PSL16.2 Scheduled Items

PSL16.2.1 Supply, Lay and bed Pipes complete with couplings Unit : m

Pipelines will be measured by length over all lengths as laid. No deduction will be made for specials and valves. Separate items will be scheduled for each diameter and each type and class of pipe laid. The rates shall cover the cost of the provision of the pipes complete with couplings, and the costs of the handling, inspecting, transporting, bedding, laying, jointing, cutting, testing and when relevant, disinfecting of the pipes and the joints.

PSL16.2.2 Extra-over 15.2.1 for the supplying, laying and bedding of specials complete with couplings Unit : no

PSL16.2.3 Extra-over 15.2.1 for the supplying, fixing and bedding of valves Unit : no

Specials and valves will be measured by the number of each type, class and size.

The rates which shall be extra-over the rates for 15.2.1, shall cover the cost of provision of each special or valve, complete with couplings and the cost of the handling, fixing, bedding and testing of the special or valve, as applicable and the cutting of the pipes.

No extra payment over and above the rates will be made in respect of any additional cutting, turning and jointing of pipes required for the location of valves, specials, etc., in the positions given on the drawings.

Unless specific provision is made in the schedule, no separate payment will be made for the supply and fitting of any additional joints and jointing materials which may be required for the connection of shortened pipe lengths.

PSLB BEDDING (PIPES)

PSLB1 BEDDING (Sub-Clause 3.3)

PSLB1.1 Rigid Pipes

All steel, clay and concrete pipes shall be laid on a class C bedding as shown on Drawing LB-1 of SANS 1200LB.

PSLB1.2 Flexible pipes

uPVC, and polyethylene pipes will be regarded as being flexible and shall be bedded as per Drawing LB-2 of SANS 1200 LB.

PSLB2 MATERIAL NOT AVAILABLE FROM TRENCH EXCAVATION (Clause 3.4.2)

Bedding and selected fill materials shall be obtained from trench excavation, other necessary excavations or from borrow pits in accordance with the provisions of Clause PSD3. The employer's Agent reserves the right to designate alternative sources. He also reserves the right to make a ruling whether special efforts must be made to construct specifically a separate bedding for pipes where the in-situ material proved to be of good quality.

PSLB3 CLASS A BEDDING (Sub-Clause 5.2.1)

Concrete to be used in class A bedding to pipes shall be of grade 20/19.

PSLB4 CONCRETE CASING TO PIPES (Sub-Clause 5.4)

Concrete to be used in the casing of pipes shall be of grade 20/19.

PSLB5 TOLERANCE ON COMPACTION OF BEDDING MATERIAL

Degree of accuracy II shall prevail.

C3.4.3 Particular Specifications

PA	Building Work	C3.4.3.PA.1
PB	Fencing	C3.4.3.PB.1
PC	Finishing and Cleaning Up	C3.4.3.PC.1
PH	Tanks and Tank stands.....	C3.4.3.PH.1
PLN	Manufacture, Supply & Testing of Steel Pipes	C3.4.3.PLN.1
PLQ	Corrosion Protection of Pipes & Fittings.....	C3.4.3.PLQ.1
PLT	Flow Meters.....	C3.4.3.PLTN.1
PWB	Setting Out	C3.4.3.PWB.1

END OF SECTION

PA BUILDING WORK

PA1 SCOPE

This section of the Specifications deals specifically with all the building work associated with the Works.

Concrete work, steelwork, cladding, pipe laying, mechanical and electrical equipment, etc. forming part of or to be housed in a building erected in terms of this specification shall conform to the requirements of the relevant standardised or particular specifications referred to in the Project Specification.

PA2 INTERPRETATIONS

The relevant SANS 1200 Standardised Specifications such as Site Clearance, Earthworks, Earthworks (pipe trenches), Concrete (structural), Low pressure pipelines, Bedding (pipes), Sewers and Stormwater drainage shall also apply to the work under this section.

PA3 MATERIALS

All materials used for the Building Work shall, where such mark has been awarded for a specific type of material bear the SABS mark.

PA3.1 Brick and Plasterwork

Cement, sand and water shall conform to the requirements of SANS 1200 G - Concrete.

Unless otherwise described cement mortar shall be composed of six parts by volume of sand to one part by volume of cement. The materials are to be mixed dry until the mixture is of a uniform colour and then clean water is to be added gradually through a fine rose and the mixture turned over until the ingredients are thoroughly incorporated.

Cement mortar must be mixed in small quantities and must be used within one hour of mixing, as the use of cement mortar that has commenced to set will not be permitted.

Plaster on concrete ceilings, beams, columns, etc. shall be mixed one part cement to three parts sand.

Bricks shall be of the best quality sound hard burnt pressed bricks or in the absence of clay bricks, concrete bricks; even in size and shape and equal to a sample submitted to an approved by the Employer's Agent prior to commencement of work.

Clay bricks shall conform with the requirements of SANS 227 and concrete bricks to SANS 987.

Damp proof courses, unless otherwise described, shall be an asphaltic damp proof course with a base of fibre felt, and complying with the requirements of SANS 248

Horizontal Damp Proof Courses, and with a mass of 3,25kg/m² or a plastic damp proof course of 15 micron thickness as Type B, complying with the requirements of SANS 952.

PA3.2 Fascias, Barge Boards and Window sills

Asbestos cement fascias and barge boards, where specified, shall be 10mm thick pressed sheets, 200mm wide free from cracks, twists, blemishes or other defects and complying with the requirements of SANS 685.

Internal asbestos cement sills shall be in single lengths cut between reveals, fitted with fixing lugs and solidly bedded in 3:1 cement mortar with a slight projection beyond the finished wall face below. Sills shall be pressed asbestos cement of approved manufacture 152 x 15m thick set level.

PA3.3 Paintwork

PA3.3.1 Primers

Plastered surfaces must be cleaned down and have one coat alkali resisting primer of an approved brand applied in strict accordance with the manufacturer's instructions, before any undercoats are applied.

Galvanised metal surfaces must be treated with one coat Metal Elch Primer complying with the requirements of SANS 723.

Steel surfaces must be treated with one coat Tupe Zinc Chromate Primer complying with the requirements of SANS 679.

Steel windows and doors and steel door frames, before being built in, must have all loose primer together with all rust spots, dirt, etc. removed and be treated with one coat red oxide zinc chromate primer complying with the requirements of SANS 909.

Wood surfaces to receive paint finish must be cleaned down, all knots treated with knotting and be primer with Type I Wood Primer externally and Type III Wood Primer internally, both complying with the requirements of SANS 678.

PA3.3.2 Emulsion paint for interior use must be Grade I Emulsion Paint complying with the requirements of SANS 663. Emulsion paint for exterior use must be of the Synthetic Polymer Base Type complying with the requirements of SANS 634.

PA3.3.3 High Gloss Enamel Paint shall be used on all surface other than specified above. High Gloss enamel paint must be Grade I paint complying with the requirements of SANS 630 for decorative High Gloss Enamel Paints with a Non-Aqueous Solvent Base, for Interior and Exterior use.

Undercoats for paints, except Emulsion paints, must be Type I undercoat Paint complying with the requirements of SANS 681.

PA3.4 Doors, Windows and Glazing

PA3.4.1 Doors

Unless indicated otherwise on drawings all doors and door frames shall be of solid hardwood. Frames shall be fitted with suitable tie bars and braces at bottom, and lugs for building in, three to each jamb or frames with fanlights. All doors shall be provided with locks to the requirements of SANS 4 and each lock shall be provided with a duplicate key.

PA3.4.2 Windows

Steel windows must be of approved manufacture and design, constructed of rolled mild steel sections, properly mitred and welded at angles with welding cleaned off smooth on all faces and complying with the requirements of SANS 727. Window types and sizes shall be as specified on the drawings.

PA3.4.3 Glazing

Sheeting glass for glazing, unless otherwise specified, must be flat drawn clear glass of the thicknesses indicated below:

For panes not exceeding 0,65 m ²	: 3mm
For panes exceeding 0,65 m ² and not exceeding 1,5 m ²	: 4mm

PA3.5 Tiling

PA3.5.1 Adhesive and Grouts

a) Wall adhesive

A grey, cement-based thin bed, wall tile powder adhesive for fixing tiles to walls.

b) Floor adhesive

A grey, cement-based thick bed, floor tile powder adhesive for fixing heavy tiles to floors or walls.

c) Wall grout

A cement-based, plasticized grouting compound for wall tile installation.

d) Bonding agent

A latex modified for use with adhesives and grouts to improve water resistance.

PA3.5.2 Tiles

Tiles shall be of first grade quality, white in colour, a maximum size of 160mm square, of a minimum thickness of 5mm and shall be glazed ceramic tiles (unless specified to the contrary).

PA3.6 Electrical connection

Electrical wiring and fittings are to comply with the requirements laid down by:

- (i) The latest issue of the "Standard Regulations for wiring of premises" issued by the South African Institute of Electrical Engineers.
- (ii) The Factories, Machinery and Building Works Act of 1941.
- (iii) The local authorities By-laws and any special requirements of the Local Supply Authority.

PA3.7 Sink units

Sink units shall be fitted with one shelf and a stainless steel sink and fluted drainer unit, with tiling key to one or more sides as required, complying with the requirements of the relevant SANS specification and bearing the standardisation mark of the SANS. The stainless steel shall be of Grade 1770 and of such gauge as laid down for the particular size of fitting. Outlet of bowls shall be fitted with chromium-plated brass work fittings with vulcanite plug and chromium-plated chain. Each 1500mm long sink unit shall have a single bowl, either left hand or right hand as shown, size 460 x 350 x 150mm deep. Each sink to be fitted with chromium-plated bibcocks and connected to hot and cold water supply.

PA3.8 Sanitary equipment

PA3.8.1 Pedestal Water Closet Pans

Pedestal water closet pans shall be of wash-down type approximately 450mm high, of white glazed fireclay or vitreous china, complying with the requirements of the relevant SANS specification.

Pans shall be bedded on the floors in 3:1 cement mortar. Pans shall be fitted with approved plastic seats with double flap of size and shape required to fit the pans and each attached to pan with two non-ferrous metal fixing bolts.

PA3.8.2 Flushing Cisterns

Low level P.V.C cisterns, no less than 12mm thick in any part, shall be provided complying with the relevant SANS specification and shall have a capacity of +- 12 litres and shall be of the valve less siphonic type of approved manufacture.

Cisterns shall be fixed to walls with 6mm brass bolts, 150mm long, two to each cistern, built into walls in 3:1 cement mortar, with leather compression washers and brass nuts.

PA3.8.3 Hand wash basins

Hand wash basins shall be of the bracket type of white fireclay or vitreous china, complying with the requirements of the relevant SANS specification and having overflow, fitted with chromium plated grid.

Unless otherwise specified, basins shall be size 585 x 430mm each fitted with 38mm plug and chromium-plated chain, and with two 12mm chromium-plated brass easy clean pattern screw down pillar to PHS. Basins shall be fixed on concealed wall hangers fixed to walls with 6mm brass bolts, 150mm long.

PA4 PLANT

Plant, equipment, tools, scaffolding, etc. utilised in building work shall be of suitable capacity, condition and design to ensure the satisfactory and timeous completion of the Works within the specified period and in terms of these specifications and good building practices.

Only registered artisans (e.g. plumbers, electricians, etc.) shall be employed on any work where this is compulsory building practise.

PA5 CONSTRUCTION

PA5.1 Brick-and-Plasterwork

PA5.1.1 Normal brick walls

Brickwork, wherever practicable, and not otherwise described, must be built in English bond. Half brick walls, walls in two skins and cavity walls must have the separate skins built in stretcher bond. No false headers are to be used and none but whole bricks except where legitimately required to form bond. The bricks are to be well wetted (saturned in hot weather) with water before being laid and the course of bricks last laid is to be well wetted before bedding fresh bricks upon it. All perpend and angles are to be kept plumb. The brickwork is to have the joints flushed up at every course solid throughout the whole width of the course, and each course is to be laid on a solid bed of mortar. Pointing is to be done as the work proceeds.

The joints of all walls to be plastered or tiled are to be raked out 15mm as the work proceeds to form a key for plaster or screed. All walls are to be built up in regular and horizontal courses and carried out so that no part built is more than 1,2m higher than any adjoining walls. Mortar beds generally are not to exceed 12mm thickness.

PA5.1.2 Face brick walls

In all faced brickwork the bond must be set out on the first level course of brickwork, at floor level internally and two courses below ground level externally. The bond, if necessary, is to be broken in the centre of panels under windows or to piers between windows. All perpend must be kept true and all courses must be built to gauge rods. Facings must be carefully protected from damage, mortar droppings, paint splashes, etc. during the whole period of the Contract and, on completion, they must be thoroughly cleaned down and left perfect. The practice of oiling facings on completion will not be allowed.

PA5.1.3 Cavity Walls

Cavity walls are to be built with two brick skins with a cavity between the skins and the two skins tied together with wire ties, four to the metre square, carefully laid and in no case to fall inwards towards the inner skin of the wall.

Care must be taken to keep the cavity free of mortar droppings or other matter by movable boards or other means, and temporary openings must be left at plinth level through which any such droppings, etc. can be removed, and the openings made good on completion.

At door, window and other openings, the cavities shall be stopped 102,5mm back from heads, jambs and sills of openings.

PA5.1.4 Reinforced Brick Lintels

Brick lintels are to be built of normal, sound, well burnt, good quality building bricks, similar to the facings where exposed properly bonded longitudinally and bedded and pointed in cement mortar as described. Special care must be taken to ensure solid bedding, particularly where the reinforcement occurs.

The lintels are to be reinforced with straight continuous mild steel rods of the size and number scheduled. The rods must each extend 300mm on each side of the opening and are to be evenly spaced across its thickness in the first horizontal joint above the soffit.

Brick lintels in cavity walls must have all rods placed below the solid sections of the walls, excepting for those rods specifically scheduled to occur below the cavity.

Cavity walls must be built solid for the number of courses scheduled above the lintel soffit. This solid section must extend the full width of the opening, plus 300mm on each side. Combined brick and concrete lintels may have the reinforcement divided proportionately between the brick and the concrete skins. Where two or more openings are less than 665mm apart, the lintel shall be continuous over all such openings and the dividing piers, plus 300mm bearing at each extreme end as before, shall have such height and reinforcement as scheduled for widest openings spanned.

Span in mm	Min. height of lintels above soffit course, in brick courses	Reinforcement per half-brick thickness of wall above for solid walls		Additional reinforcement for cavity, placed below cavity	
		No. of Rods	Dia. mm	No. of Rods	Dia. mm
600	2	1	6	1	6
900	3	2	6	2	6
1200	3	3	6	1	6
1500-1800	4	2	10	1	10
2100-2400	5	3	10	1	10

PA5.1.5 Damp proof courses

The sheeting is to be cut into strips of the required width and laid on all foundation walls to the full thickness of the walls to the full thickness of the walls and without any longitudinal joints. At ends, angles and intersections the sheeting must be lapped 150mm and sealed. In cavity walls the sheeting must be laid across the full width of the wall, including the cavity, and must be stepped up one course in the cavity, over a cement triangular fillet, so that the sheeting under the inner skin of the wall is higher than that under the outer skin of the wall.

Under all window sills exposed to the weather, the sheeting must be laid to form damp proof course as detailed above for solid walls and cavity walls.

PA5.1.6 Reinforcing in Brick walls

Reinforcing (brickforce) on an approved manufacture shall be place on every fourth course in all brick walls. In half-brick and cavity walls 80mm wide reinforcing mesh shall be used and 150mm wide mesh in the case of the one-brick walls.

PA5.1.7 Plasterwork

All chases must be cut and electrical conduiting and boxes fixed before any plastering is done. On no account will chasing be allowed in finished plaster work, and if such chasing is necessary, the entire wall surface must be hacked off and re-plastered.

Except where otherwise described, all external plaster is to be finished with a wooden float and all internal plaster is to be finished with steel trowel, all to perfectly true and even surfaces, free from tool marks and other defects on completion.

All finished surfaces are to be protected from injury. All joints in brickwork are to be well raked out, all surfaces, brickwork and concrete, to be plastered must be brushed down to remove all dirt and dust and be thoroughly wetted directly before plastering.

Concrete surfaces must be roughened or hacked as necessary to give a proper key for plaster. The surfaces must then be sloshed with coarse cement grout before plastering is commenced. The surfaces of all internal plaster must be steel trowelled to a smooth even and true finish. External plaster must be finished to a true and even surface with a wood float. Plaster must be returned into reveals and soffit of openings and all angles and edges must be true and straight. All plaster surfaces must be free from blemish and any cracks, blisters, or other defects must be cut out and made good and the whole left perfect at completion. Plaster on walls must be not less than 12mm or more than 20mm in thickness, and plaster on concrete work must be not less than 10mm or more than 15mm in thickness, except where specifically otherwise described.

PA5.1.8 Slip Joints

Slip joints shall be provided between brickwork and concrete slabs and beams by levelling up and steel trowelling smooth the bearing surfaces of brickwork with 3:1 mortar and covering the bearing surface before concrete is cast with 2 layers of 500m five hundred micron) black general purpose sheeting membrane.

The ends and sides of beams and edges of concrete slabs shall be separated from the brickwork with 12mm polystyrene placed vertically against the brickwork before the concrete is cast.

PA5.1.9 Beam Filling

Unless otherwise specified, beam filling shall be half brick thick, built in cement mortar, cut in between roof timbers and carried hard up to underside of roof covering and flushed up in mortar with a groove formed between covering and mortar to the satisfaction of the Employer's Agent.

PA5.1.10 Securing of Roofs

Roof plates shall be fixed to walls with bands of 1,6mm thick galvanised hoop iron, 32mm wide, built six (6) courses deep into brickwork or embedded 300mm deep into concrete, at not exceeding 1,5 metre centres, and well lapped and spiked to plates and to roof trusses where adjacent, otherwise taken up to a lapped round the nearest purlin and well spiked thereto. A layer of brick force shall be provided at each alternate course above the building in of the hoop iron to fix the roofs.

PA5.2 Rainwater Goods

All gutters, downpipes and flashings shall be 0,6mm thick galvanised sheet iron. Rates for sheet iron eaves gutter and rainwater pipes shall include for short lengths and for lapped, riveted and soldered joints. Eaves gutters are to be screwed or welded to fascia boards or roof timbers/beams with 38 x 3mm galvanised mild steel gutter brackets at approximately 900mm centres, or as otherwise described. Rainwater pipes are to be fixed with sheet iron ears to and including 25 x 76 x 150mm chamfered hardwood blocks, plugged to brickwork or concrete and oiled, or with 38 x 14-gauge galvanised hoop iron

straps build into walls not more than 2 meter apart, bent around pipe and bolted at back.

Finishings shall be properly cut, lapped and shaped to render a waterproof finish. Flashings turned up against walls must be finished with cover flashing bent to shape, dressed over the under flashing and with top edge wedged into joint of brickwork and pointed or secured by other approved means.

PA5.3 Paintwork

All surfaces not being painted such as face brickwork, sills, floors and stained woodwork, must be covered up and protected against paint and distemper sports before any painting is commenced. All floors must be swept clean and walls dusted down before any paintwork is commenced and no sweeping or dusting must be done while painting is in progress.

All plastered wall; ceiling and similar surfaces must be perfectly dry and in a fit state to receive the finishings, before the work is put in hand.

All coats of paints, etc. must be thoroughly dry before subsequent coats are applied, and rubbed down where necessary.

All work must be finished to colours approved by the Employer's Agent.

The tints of undercoats must approximate those of the finishing colour and in order to indicate the number of coats applied and to avoid misses when applying a succeeding coat a slight difference shall be made in the tint of each coat.

The Contractor must provide all necessary dust sheets, covers, etc. and shall exercise all necessary care to prevent marking the surfaces of joinery, walls, floors, glass, electrical fittings, etc. and must keep all parts of the works perfectly clean and free at all times from spotting, accumulation of rubbish, debris or dirt arising from the painting operations. Any surface disfigured or otherwise damaged must be completely renovated or replaced as necessary, by the Contractor at his own expense. The premises must be left clean and fit for occupation at the completion of the work.

PA5.4 Floor Finishes

Where a floated concrete floor finish is specified on the drawings, the requirements of SANS 1200G or GA, whichever is irrelevant, shall apply.

Granolithic finish to floors, treads and risers of steps, thresholds, landing etc. must be composed of two parts hard stone chippings; half part sand and one part cement, steel trowelled to a true and even surface. The granolithic must be laid before the concrete surface bed has matured, otherwise the surface of the concrete must be thoroughly cleaned with a wire brush and a coat of neat cement grout applied immediately before the granolithic is laid. The granolithic must be laid in panels not exceeding 6 m² in areas,

and jointed to lines of panels and lined into smaller square as directed with sunk V-joint. The joints between the panels should coincide with joints in the concrete surface bed, where these occur. No dusting on of colouring pigment will be allowed.

Terrazzo floor tiles shall be even in size and shape, free from cracks, chips, twists, blemished or other defect uniform in colour and equal to samples to be submitted to and approved by the Employer's Agent. Special care must be taken to preserve arises and faces during transit and handling.

Pointing, etc.: Terrazzo floor tiles are to be bedded and jointed solidly in cement mortar and unless otherwise described, flush pointed on all exposed faces with semi-dry cement mortar pressed in. On no account must liquid grout be poured in. Terrazzo floor tiles work must be well protected to prevent all possibility of damage or discoloration and thoroughly off cleaned on completion.

Vinyl floor tiles shall be fixed on to a screed of thickness at least 25mm. The screed shall have a wood floated finish and shall be smooth with no obstruction greater than 3mm protruding and with the screeded surface level in such a way that no gap greater than 5mm would show underneath a 3m straight-edge or part thereof.

Vinyl tile adhesives shall carry the same product name as the vinyl tiles and the adhesives shall be applied as stipulated by the suppliers.

The acceptable tolerance of the final tiled floor shall be similar to that specified for the screeded surface underlying the tiles.

PA5.5 Tiling Work

The area to be tiled, shall first be plastered as described under plasterwork leaving a wood float finish. The plastered surface shall be left for two weeks to cure before any tiling may start.

Tiles shall only be cut by approved tungsten tile cutters, or for irregular shapes by approved tile saws. The use of nibblers shall not be permitted.

A tiled panel shall be planned beforehand to minimise cuts. An initial perpendicular tiling configuration shall be laid against perpendicular fixed battens. A clear space of 1 to 2mm shall be left between tiles by inserting positive temporary spacers.

Prior to the application of any adhesives the rendering shall be vacuum cleaned. Adhesives shall be mixed with a bonding agent and not with water. The mixing proportions shall be as specified by the supplier. Adhesives shall be applied within a 15minutes period after mixing with those adhesives or used during such time to be thrown away.

Adhesives shall be applied in a solid bed, some 6mm thick and then struck with an approved serrated steel trowel. Adhesives shall not be applied by "the fire point tiling method".

Grouting of the joints shall only start 48 hours after a tiled section has been completed. The grout shall also be mixed with the bonding agent as specified by the supplier. The grout shall be worked off leaving a neat superficial rut in the joint centre. All the faces shall be cleaned directly after grouting.

No tiling shall be done over a structural joint. In large tiled panels, a movement joint shall be left every 3 metres in the horizontal and vertical direction as detailed. At a structural joint (contraction or expansion joint) the rendering, adhesive and tiles shall be interrupted over the joint and the joint sealed at the surface.

The permissible deviation on the final surface shall be a maximum gap of 3mm measured under a 3m straight edge or part thereof.

PA6 TOLERANCES

Where tolerances are not specified in the clauses above those generally accepted as representing good workmanship in the building trades shall apply.

PA7 TESTING

The Employer's Agent reserves the right to order any tests, whether at place of manufacture or on site, necessary to evaluate the quality of the work and to ensure the finished building conforms to all the specified requirements.

PA8 MEASUREMENT AND PAYMENT

PA8.1 Schedule items

PA8.1.1 Brickwork

Brickwork, if measured as a separate item, shall be measured in square metre of the nett brick walled area (with the wall width and type of brick-finish, indicated). No adductions will be made for small openings such as air bricks, etc. The tendered price per square metre of brickwork shall include also for the following, if such items are not listed separately:

- (a) Plaster work as indicated
- (b) Damp proofing
- (c) Brick forcing (every fourth layer)
- (d) Reinforcing of lintels
- (e) Miscellaneous items built into brickwork shown on the drawings such as air bricks.

PA8.1.2 Wall, ceiling, roof and floor finishes

Cement plaster on walls and ceilings, roof screeds, floor screeds, paint and any other finish described or specified, shall if measured as separate item be measured in square metre of the nett surface are. No deductions shall be made for small openings nor shall additions be made for small protrusions and reveals. No separate payment shall be made for the processes involved and material supplied for the complete painting of all fixtures and fittings, as specified herein and the cost thereof shall be included in the tendered price for the supply, manufacturing and erection of all such items to be erected.

PA8.1.3 Miscellaneous

- (a) Timber doors and windows shall be measured per unit of door or window complete with door frame, lock keys, glazing, painting, etc., for each type and size of door or window or as a lump sum payment for all doors and windows included in the door and window schedule of the Works.
- (b) Other items of building work, fixtures and fittings, shall be measured and paid for in the units of measurements listed in the Schedule of Quantities.

PB FENCING

PB1 SCOPE

This sub-section includes all work in connection with the erection of shockproof, vermin proof, residential or security fencing as shown on the drawings or as directed by the Employer's Agent. It also includes any work necessary on the lifting and re-erecting of existing fences. The standard of fencing, the positioning of the gates and the quantities shown in the Schedule of Quantities against each item under this section, may be subject to variation and the Contractor shall ascertain from the Employer's Agent, the exact location of, and specification to which the fencing shall be constructed, before placing any orders for material. The minimum standards of fencing required are indicated on the drawings.

PB2 MATERIALS

PB2.1 Vermin, Shockproof and Residential Fencing

Straining posts and stays, standards, and droppers shall be either of timber or steel sections. All sections shall be to the dimensions and masses indicated on the drawings. Timber sections shall be of creosote impregnated hardwood. Steel sections shall be either galvanised or painted to the specifications indicated on the drawings.

All plain wire, barbed wire, wire netting, diamond mesh and binding wire shall be according to the diameters and specifications indicated on the drawings.

PB2.2 Security Fencing

All posts, standards and droppers for security fencing shall be galvanised steel sections to the dimensions and details indicated on the drawings. Plain and diamond wire and other fencing materials shall all be according to the details indicated on the drawings.

Gates

All gates shall be to the details indicated on the drawings and components shall either be galvanised or painted according to the specifications on the drawings.

PB2.3 Bolts

Bolts shall be galvanised steel bolts of the required length and diameter which shall not be less than 12mm. Eyebolts to gates of 18mm diameter. All the necessary bolts together with nuts and washers, shall be supplied with each post or gate.

PB3 CONSTRUCTION

PB3.1 Clearing of Fence Site

All brush scrub and other obstructions which may interfere with the proper construction of the fences shall be removed and surface irregularities shall be graded so that the fence will conform to the general contour of the ground.

No separate payment will be made for this clearing and full provision for these costs must be made in the tender.

PB3.2 Connections

Existing cross fences shall be connected to the new fences. Straining posts with stays for every direction of strain shall be placed at the junction with existing fences and the wires in both fences properly fastened to the posts.

PB3.3 Placing of Posts

All posts, struts and standards shall be firmly planted into the natural ground, be it soil, gravel or rock to the depths detailed. Gate posts and struts shall be erected at all gates and straining posts and struts shall be erected at all ends and corners or bends in the line of the fence and at all junctions with other fences. Intermediate straining posts and struts, and standards shall be spaced at the intervals indicated on the drawings.

All posts (except struts), standards and droppers shall be placed in a vertical position except in unusual locations where, in the opinion of the Employer's Agent, it will be more satisfactory to place such member perpendicular to the slope of the ground. All posts, struts, standards and droppers shall be set in holes dug to the specified depth even in rock where blasting might be necessary to obtain the required depth. All gate posts shall be set in concrete and other members shall either be set in concrete or in well compacted backfill as indicated on the drawings. No concreting or backfilling shall be done until all members have been properly aligned.

All posts and struts for security fencing shall be set in concrete as shown on the drawings. Steel members are not buckled or otherwise damaged after being driven in, and provided further that the correct alignment or the driven members is maintained.

PB3.4 Attaching Wire

After all posts, struts and standards have been set firmly and after all concrete has hardened for at least four days the fence wire shall be attached according to the details indicated on the drawings. All wire shall be attached to the sides of the posts and standards furthest from the object being fenced. Wire shall be carefully stretched and strung in true alignment and without sag. Wire shall be attached to each post and standard by one of the following methods:

- a) by notching the member and securing the wire by means of binding wire or,
- b) by drilling holes through the member and stapling the wire with plain iron staples passing completely through the member, or

- c) where iron members are used, by securing the wire by means of binding wire must pass through the hole in the standard.

Droppers shall be placed parallel to the standards at the intervals detailed on the drawings. Droppers shall be fixed to each fence wire with binding wire in such a manner as to prevent any slipping.

PB3.5 Attaching Wire Netting or Diamond Mesh

Wire netting and diamond mesh covering shall be securely fixed to the fence according to the details on the drawings. In addition, the wire netting on vermin proof fencing shall be fixed according to the Employer's Agent's instruction by one of the following methods:

- a) by packing stones, placed end to end, on both sides of the fence so that no gaps exist beneath the fence, or
- b) by folding back the bottom 150mm of wire netting so that it lies flat on the ground, and packing stones end to end on this flap, or
- c) by embedding the lower part of the wire netting at least 100mm into the ground and ramming the earth thoroughly to secure the netting.

PB3.6 Installing Gates

Gates shall be installed in the position indicated by the Employer's Agent. The gates shall be erected so as to swing in a horizontal plane at right angles to gate post clear of the ground in all positions.

PB4 FINISHING: TRIMMING AND PAINTING

Where timber posts have been used, the tops of the posts shall be trimmed after the fencing has been erected, such that the top of the completed fence has a pleasing profile. The cuts shall be liberally painted with creosote. An un-galvanised metal components of fencing has been erected, any chipped or damaged paint work shall be touched according to the same paint specifications.

PB5 MEASUREMENT AND PAYMENT

PB5.1 Vermin proof, Shock proof, Residential and Security Fencing

This fencing shall be measured in metres between the centres of gate and end posts along the general slope of the ground. Payment shall include full compensation for the clearing of the line, for the supply, painting and erection of all standards, intermediate straining posts and stays, droppers, plain wire, barbed wire, binding wire and all other components on the drawings but shall specifically exclude corner, end and gate posts and their stays. Payments shall also include for the concreting of posts where specified.

PB5.2 Corner, Bends and Ends

Corners, bends and ends shall be measured by the number and shall include compensation for the supply, painting and erection of all posts and stays required at such ends, corners or bends and shall include for any concreting where so specified.

PB5.3 Gates

Gates shall be measured by the number. A double gate as required for security fencing shall be measured as one number double gate. Payment shall include full compensation for the supply, painting and erection of the gate and ancillary components, as well as for the supply, painting and erection of gate posts and struts and for the concreting of such posts and struts (where required).

PB5.4 Pay Items

1.	Vermin proof Fencing	:	m
2.	Shockproof Fencing	:	m
3.	Residential Fencing	:	m
4.	Security Fencing	:	m
5.	Corners, bends and ends (shall distinguish between the different type of fencing)	:	no
6.	Gates (shall distinguish between the different type of fencing and between the different types and dimensions of gates)	:	no

PC FINISHING AND CLEANING UP

PC1 GENERAL

No section of the work will be regarded as satisfactorily completed until the final cleaning up has been performed.

PC2 SCOPE

All completed work shall be trimmed and all the debris of construction, such as unsuitable or rejected materials and spillage, shall be removed. The site and its environs shall be rehabilitated, where practically possible, by taking the following measures: -

- * The site of work shall be cleaned of all rubbish, excess materials, falseworks, temporary structural installations and abandoned equipment.
- * All construction scars resulting from this contract shall be treated to blend with the contour and vegetation of the surroundings.
- * All trench subsidence shall be made good and surcharged backfill materials shall be removed unless otherwise directed.

PC3 ACCEPTANCE

Three weeks before the anticipated date of completion of any section to be handed over, the Contractor shall formally request a check list of defects from the Employer's Agent.

Within one week the Employer's Agent will detail in writing the particulars of the work to be done in finishing the Works, and the general standard of aesthetics to be observed in trimming and cleaning.

Before offering the work for acceptance on a completion certificate the Contractor shall satisfy the Employer's Agent's site representative that all the work scheduled on the checklist has been attended to.

PC4 PAYMENT

Payment shall be the tendered lump sum and shall become due on the date of signature of the Certificate of Completion.

PH TANKS AND TANKSTANDS

PH1 APPLICABLE STANDARDS

The latest issues of the following standards form part of this specification:

- SANS 136: ISO metric precision hexagon-head bolts and screws and hexagon nuts (coarse thread medium fit series);
- SANS 0162: The structural use of steel;
- BS 4360: Weldable structural steel;
- SANS 62: Steel pipes and pipe fittings up to 150mm nominal bore suitable for screwing to ISO R7 pipe threads;
- SANS 135: ISO metric black bolts, screws and nuts;
- SANS 455: Covered electrodes for the manual arc welding of mild steel and medium high tensile steel;
- SANS 763: Hot-dipped (galvanised) zinc coatings (other than on continuously zinc-coated sheet and wire);
- SANS 1123: Steel pipe flanges;
- SANS 0104: Hand and guard rails (Safety aspects);
- Safety Legislation No. 13A(6)(a) and 13A(6)(b)(i).

PH2 SCOPE

This specification covers the requirements for tanks (with or without covers) intended for the storage of liquids and constructed of bolted square pressed steel plate sections and of depth not exceeding 4880mm.

PH3 REQUIREMENTS

PH3.1 Materials

PH3.1.1 Covers: Sheet piling used for covers shall be of steel having a nominal thickness of at least 2,5mm or of ISCOR Z600 closed profile pre-galvanised steel sheet of thickness of at least 0,8mm (subject to normal milling tolerances).

PH3.1.2 Electrodes: The electrodes shall be of a quality at least equal to that of electrodes complying with SANS 455, and the deposited metal shall have a tensile strength and an elongation of at least equal to the appropriate minimum specified for the parent plate.

PH3.1.3 Plates, stags, cleats and pads: Plates, stags, cleats and pads shall be of mild steel, complying with the relevant requirements of BS4360.

PH3.1.4 Jointing Compound: The jointing compound shall be non-toxic, shall not leach out, shall be insoluble in the liquid to be stored (and in the case of tanks for potable water, shall not impart any off-flavour or off odour to the water), and shall provide an effective seal between the plate flanges under conditions of temperature specified. (The contractor should obtain from

the Supplier a statement of the optimum period that should be allowed for the jointing compound to mature before the tank is put into commission).

PH3.2 Size

The nominal size of a tank, based on dimensions each of which is a multiple of 1220mm, 1200mm or 1000mm, as relevant and subject to a maximum depth of 4880mm.

PH3.3 Components

PH3.3.1 Plates

(a) Size

The nominal overall size of plates (after flanging) shall be 1220mm x 1220mm, 1200mm x 1200mm, or 1000mm x 1000mm, appropriate to the size of the tank specified.

(b) Thickness

In the case of tanks of stored liquids of nominal density not exceeding 1000kg/m², the nominal thickness of the plates shall conform to the appropriate value(s) given in Table 1.

Table 1: Plate Thickness

Depth of Tank (mm)	Plates	Plate Thickness (mm) min
1000 – 1220	Bottom; sides; ends	3
2000 – 2440	Bottom; sides; ends	3
3000 – 3660	Bottom; first tiers of sides and ends	4,5
	Second and top tiers of sides and ends	3,0
4000 - 4880	Bottom, first tier of sides and ends	6,0
	Second tier of sides and ends	4,5
	Third end top tiers of sides and ends	3,0

Strengthening

The plates shall be strengthened by suitable embossment (i.e. a pattern pressed into the plates) or by the welding of suitable ribs to the plates.

Flanges

The plates shall have flanges of width of at least 44mm and of the following form and arrangement:

- A combined double flange at angles of 45 degrees and 90 degrees to the plane of the plate, pressed on each side of the plate.

- A single flange at an angle of 90 degrees to the plane of the plate, pressed on two, three or four sides (depending on the position of the plate in the tank) and with flanged corners welded.

The flanges shall have bold holes of diameter such as to provide a bolt clearance of 1,5mm evenly spaced at a pitch of 75 plus minus 1,5mm.

PH3.3.2 Connections

Connections shall be one of the following types:

- Flanged bolted type connections complying with the relevant requirements of SANS 1123 for flanges for nominal pressures of 600 kPa;
- Screwed type connections complying with the relevant requirements of SANS62.

PH3.3.3 Covers

When so specified, tanks shall be supplied complete with covers. Each cover shall be so fitted as to prevent the ingress of water and any foreign matter into the tank.

Each cover shall have a clear opening of diameter or smallest dimension, as relevant of at least 450mm, and shall be so constructed that it can be fitted with a lock.

Unless otherwise specified, each tank that is provided with a cover shall be equipped with a vent fitted with a cowl. The vent shall be so screened as to prevent the entry of rodents, other small animals and mosquitoes.

PH3.3.4 Access ladders and safety platforms

Access ladders and safety platforms shall be provided as follows and the design and construction of the rails shall be such as to comply with the relevant requirements for safety in SANS 0104.

External ladders and platforms; Each tank shall be supplied with an external access ladder and safety platform. It shall comply with the relevant clauses of the Occupational Health and Safety Act and possess a safety cage from 2,5m above ground level and landing stages at 9m intervals.

Internal Access Ladders: Each tank of depth exceeding 1220mm shall be provided with an internal access ladder. In the case of a tank that is not provided with a cover, the ladder shall be located as specified and in the case of a tank that is supplied with a cover, the holder shall be located below the manhole.

PH3.4 Construction

PH3.4.1 Design Strength: The design strength of the tank and of all members (stags, cleats, bolts, cover-frame members, etc.) shall comply with the relevant requirements of SANS 0162 and shall include allowances as relevant for the following:

- Exposure of the tank to corrosive conditions
- Eccentric loading
- Fatigue stresses caused by turbulence of the stored liquid.

PH3.4.2 Flanging: Tanks shall be constructed of externally flanged plates, unless otherwise agreed upon.

PH3.4.3 Attachment of connections: Connections shall be supplied in the positions specified and shall be welded to the tank. Flanged bolted connections shall be as follows:

- Where the size of the connection and the specified location are such that the connection can be welded to a plate that is free from embossment, single-stooled flanges shall be provided for connections that are to be made in one side of the plate only and double-stooled flanges for connections that are to be made on both sides of the plate, as specified.

PH3.4.4 Staying: When necessary, the sides and ends of the tank shall be supported by stays. Each end of each stay shall be bolted to a cleat. Cleats shall be bolted or welded to the plates.

The connections of stays shall be arranged in one or more of the following ways, as necessary:

- Sides to bottom
- Ends to bottom
- Sides to sides
- Sides to ends

PH3.4.5 Welding: All welds shall be acceptable fusion welds. The weld metal, the heat-affected zone and the surrounding parent shall be free of cracks. Weld faces shall be free of porosity, cavities and trapped slag, shall show now pronounced humps or craters and shall merge smoothly into the adjacent surfaces of the parent plate without overlap or excessive undercut. The throat thickness of fillet welds shall be at least 4,5mm. In the case of corner welds, the leg length shall be equal to the plate thickness.

PH3.5 Workmanship

The workmanship of all components shall be such that they are free from defects that are detrimental to the ease of assembly or the performance of the tank in service, or both.

PH3.6 Finish

Unless a different type of protective coating is specified, all components shall be protected from corrosion by hot-dip galvanising that complies with the relevant requirements of SANS 763.

PH4 FOUNDATIONS AND STANDS

PH4.1 Design, Drawings and Quantities

The Contractors must submit the design and workshop drawings for the steel tank and stand to the Employer's Agent for approval prior to commencement of the work.

The foundations for the tank and stand will be designed by the Employer's Agent, while the design for the stand shall be designed by the supplier and checked by the Engineer.

The cost for the design of the steel tank and stand must be included in the tender sum and rates.

PH4.2 Lighting Protection

The stand shall be earthed using a suitable approved copper connector between the bottom of the tank leg and an on-earth spike.

PH5 DISINFECTION OF THE TANK

On completion of construction, but before commencement of testing, the reservoir shall be disinfected as follows:

- a) The reservoir shall be flushed with clean water until all sediment and other foreign matters have been removed.
- b) Potable water treated with sodium hypochlorite or calcium hypochlorite or chlorine gas shall be introduced into the reservoir. On completion of filling with chlorinated water, the chlorine concentration in water sampled at any point shall not be less than 3 mg/l free available chlorine.

After 24 hours retention of chlorinated water in the reservoir, samples drawn at any point shall contain not less than 0,5 mg/l free residual chlorine. Where necessary, additional chlorine shall be injected to maintain chlorine residuals.

PH6 TESTING OF TANK

The complete tank shall be watertight and the work will not be certified until the tank has been proven by testing to be watertight.

Upon completion of the erection and when so agreed by the Employer's Agent, the tank shall be filled by gradual admission of water until level reaches the overflow level. The tank shall be allowed to remain filled for 24 hours upon which a visible inspection will be done on the tank. If at any time during the test, visible leaks appear, the test will be discontinued and remedial work done. Upon completion of the remedial work, the 24 hours test will restart. The tank will be deemed watertight if no leaks are present at the end of test and so noted by the Engineer.

PH7 MEASUREMENT AND PAYMENT

PH7.1 Galvanised Stand

The Contractor shall tender a sum under appropriate schedule in the Schedule of Quantities to allow for the complete stand and all charges and profit.

PH7.2 Galvanised Pressed Steel Tank

The Contractor shall tender a sum appropriate schedule in the Schedule of Quantities for the tank to allow for all charges and profit.

PLN MANUFACTURE, SUPPLY AND TESTING OF STEEL PIPES

PLN 1 SCOPE

This specification covers the manufacture and supply of bare, electric welded low carbon steel pipes and steel pipe special items for the conveyance of water at ambient temperatures and at medium pressures.

PLN 2 STANDARDS

Pipes and specials shall be manufactured, tested and inspected in accordance with the latest issues of the following standard specifications unless amended in subsequent clauses in this specification.

a) Pipes

SABS 719 : Steel Grades A, B and C

SABS 1431 : Steel Grades 350 WA

API 5L : Steel Grades, X42, X46, X52, X56 and X60

b) Specials

- Specials of 150 mm nominal diameters and smaller to be manufactured with pipe conforming to SABS 62 (heavy duty) or ASTM Schedule 40 to suit specified pressures.
- Specials larger than 150 mm nominal diameter shall be manufactured from pipes complying with this specification.
- The radiographic technique, adjudication of radiographs and repair of defects shall be in accordance with API 1104.

c) Qualifications of Welders

All manual or semi-automatic welds and repair welds shall only be undertaken by welders qualified under the tests laid down in accordance with API 1104.

d) Non-destructive Tests and Adjudication

- Radiographic inspection: API 1104
- Ultrasonic inspection: API 5L

e) In this Specification reference is made to the latest issues of the following specifications:

SABS	719
API	5L
API	1104

ASME	Section V
BS	2971
BS	2633

PLN 3 STRESSES

- a) All pipes shall be hydrostatically tested as described in PLN 6.5 to a pressure such as to produce a circumferential tensile stress in the steel of not less than 85% of the minimum yield stress.
- b) The design stress for pipes subjected to the specified design pressures shall be 60% of the minimum yield stress of the steel.

PLN 4 PROCESS OF MANUFACTURE FOR PIPES

PLN 4.1 Pipes shall be manufactured by an approved semi-automatic submerged-arc welding process or shall be electric resistance welded. Where semi-automatic submerged-arc welding is employed, at least one pass shall be made on the inside and at least one pass on the outside. The number of longitudinal weld seams shall not exceed:

- a) one seam for pipes up to 1 000mm nominal diameter
- b) two seams for pipes larger than 1 000mm and up to 2 000mm nominal diameter

Circumferential welds by semi-automatic submerged-arc welding method for factory double jointed pipes shall have at least one pass on the inside and at least one pass on the outside.

PLN 4.2 Welds

SABS 719, BS 2971 and BS 2633 shall generally apply.

For fusion welded pipes and specials, the internal weld bead shall not protrude more than 1mm into the bore of the pipe or special.

For electric resistance welded pipes, the height of upset metal and flash on the inner surface shall not exceed 1,0mm.

For pipes to be joined by butt welding, the internal weld bead shall be ground flush with the pipe body for a length of 200mm from ends to be jointed.

For pipes to be coupled by flexible couplings, external weld reinforcement or upset metal and flash shall be ground flush with the pipe body for a length of 200mm from the end to be coupled.

PLN 5 DIMENSIONAL REQUIREMENTS

PLN 5.1 Pipes

All dimensions will be in accordance with SABS 719 clause 4.

PLN 5.2 Specials

The tolerances on specials will be in accordance with BS 534, Section 4.

Unless shown otherwise, branch and manifold sections of Tees to have a common centre line and of Scour Tees to have a common invert line.

All dimensions on layout drawings or item details are outer face to outer face, i.e. overall.

Position dimensions for puddle flanges and restraining flange refers to centre of flanges.

PLN 6 TESTING AND INSPECTION AT MANUFACTURER'S WORKS AND AT SITE

PLN 6.1 General

Factory and Site inspection, supervision of tests and adjudication of test records shall be carried out by an independent Inspectorate.

All tests and inspections at the factory and on site shall be at the expense of the Contractor who shall provide all necessary testing facilities, labour, instruments, equipment and samples that might be required, free of charge.

The Inspectorate shall be afforded every facility during the course of manufacture and testing to enable the inspection to be carried out effectively.

All test samples shall be selected by the appointed Inspectors and all instruments used for testing purposes shall be approved by the Inspectors and if in the opinion of the Inspectors any instrument should require calibration, such instruments shall be calibrated at the expense of the Contractor by the SABS or such other body as may be approved by the Inspectorate.

No mechanical working or straining of pipes and specials shall be allowed after testing and inspection.

PLN 6.2 Visual Inspection

All finished pipes and specials shall be visually examined and shall be free of injurious defects as defined in API 5L Section 10.7.

PLN 6.3 Non-destructive Inspection

PLN 6.3.1 Ultrasonic Inspection

Pipes shall be made by an approved welding process and 100 percent of all longitudinal or spiral welds on straight pipes shall be checked with an approved ultrasonic method capable of continuous and uninterrupted inspection of the weld seam in accordance with API 5L Section 9.10, 9.11 and 9.12 except that the equipment shall be checked with an applicable reference standard at least twice every working run.

PLN 6.3.2 Radiographic Inspection

a) Longitudinal Weld Pipe

All electric fusion welded pipes, shall be inspected by radiological methods for a distance of 200 mm from each pipe end.

b) Spiral Weld Pipe

All electric fusion welded pipes shall be inspected by radiological methods for a distance of 100 mm from each end of each length of pipe and of the complete "H" at all scalp and welds including 150 mm of the spiral welds in both directions away from the intersection points with the scalp and welds.

c) Circumferential Butt Welds

100 percent of the length of circumferential butt welds shall be examined unless consistently acceptable results are obtained. Then the number of welds so to be tested may be reduced by mutual agreement between the Engineer, the Inspectorate and the Contractor.

d) Specials

100 percent of all manual or semi-automatic welds in specials shall be examined radiographically unless consistently acceptable results are obtained. Then the number of welds so to be tested may be reduced.

Where specials cannot be hydrostatically tested, all welds shall be liquid penetrate tested as per ASME Section V.

e) Repairs

Straight Piping:

100 percent of the total length of all repairs shall be examined radiographically unless repairs are done prior to ultrasonic inspection and such repairs pass ultrasonic inspection. Then no radiographic inspection of same is required.

f) Pipes for Rail, Road and River Crossings: 100 percent of the total length of all welds shall be examined radiographically.

PLN 6.4 Hydrostatic Testing

- a) Each individual straight pipe shall be subjected to a hydrostatic test in accordance with the methods described in API 5L, Section 5. Test pressures shall be such as to produce tensile fibre stresses in the pipe wall of not less than 85% of the minimum specified yield strength of the steel or shall be 9 MPa whichever is the lesser. Leaks or sweats shall be considered injurious defects.
- b) Should it not be possible to hydrostatically test straight piping and/or specials the through liquid penetrate test as per ASME Section V shall be done on all welds over and above the non-destructive tests specified above. This shall only be applicable with the prior written approval of the Engineer.

PLN 6.5 Repair of Injurious Defects

Injurious defects found by non-destructive testing of welds, visual examination, hydrostatic testing or determined by any other means to exceed the limitations in API 5L, Section 10.7 shall be repaired in accordance with API 5L Section 10.8 and 10.9 but subject always to the requirements of this specification.

PLN 6.6 Destructive Testing

PLN 6.6.1 The following destructive tests shall be performed in accordance with SABS 719 clause 7.2 on the first pipe and thereafter on one pipe of each 500 subsequent pipes.

- a) Transverse Tensile Test
- b) Root Bent Test (Electric Fusion Welds)
- c) Flattening Test (Electric Resistance Welds)

PLN 6.6.2 Sampling for Destructive Tests

a) **First Sample**

A section long enough to provide all the test specimens and material shall be cut from the selected pipe.

b) **Second Sample**

If the test specimens and material from the first selected pipe fail to pass any of the tests, a section long enough to provide the appropriate specimens for the tests failed by the first sample shall be cut from two further pipes.

c) **Third Sample**

If the test specimen from the second sample fails to pass the test(s) a similar section shall be cut from each of a further ten pipes.

d) **Compliance**

The piping shall be considered as complying with the specification if after testing of the first or the second or the third sample no defect is found.

PLN 7 FLANGES

- a) Material shall be steel plates to conform to the requirements of SABS 1123 (1977), unless otherwise specified.
- b) Dimensions and drilling shall be in accordance with SABS 1123 (1977) unless otherwise specified. Flanges for 64 bar working pressure shall be in accordance with BS4504:1969. Dimensions not covered by SABS 1123 and BS4504, shall be in accordance with NWS 1676 Revision 0.
- c) All flanges shall be of the steel-plate for welding type and shall have flat joint faces unless otherwise specified.
- d) Connecting surfaces shall be in accordance with SABS 1123 clause 4.5.
- e) Puddle flanges need not be drilled. Where puddle flanges are slanted to an item, special flanges are required. Such flanges need not be circular, but shall meet the specified pressure rating and must protrude at least 100 mm outside item outer wall.
- f) Provide appropriate bolt units, consisting of a standard-length bolt, nut and two washers of a material to conform to the requirements of SABS 1123 where applicable, otherwise to the requirements of the Engineer for each set of flanges and for flange adaptor to flange installations.

NB: The shortest standard bolt or stud that protrudes beyond the nut by a minimum of two threads, when the assemblies are fully tightened, shall be used. A washer shall be fitted under all bolt/screw heads and nuts.

- g) Gaskets for flanged connections shall be of aramid and glass fibre with nitrile rubber binder to BS 7531, ring type with a minimum thickness of 3 mm, unless otherwise specified.
- h) Should certain equipment e.g. valves, etc. only be supplied with specific flange drilling, the Contractor must arrange for adjacent flanged items to have the same drilling prior to the manufacture of such items.
- i) Some flexible couplings to be restrained by means of a restraining flange. The diameter, number and length of the long restraining bolts as well as any possible pipe wall thickening to be designed by manufacturer for specified pressures. The seal retaining flange on the flexible coupling may be factory machine scalloped to accommodate the long bolts. Provide all the necessary nuts, washers, etc. for the restraining bolts.

Restraining flanges need not have all the bolt holes specified in the applicable flange drilling table. Only those required for the long restraining bolts need to be provided; these holes should, however, comply with the applicable flange drilling table and be spaced equally on the flange PCD and symmetrically around the flange centre lines.

Restraining bolts to be positioned so as to not clash with any stubs specified for an item.

- j) Blank flanges for pipes equal to or greater than 400 dia. to be provided with two approved lifting handles.

PLN 8 FLEXIBLE COUPLINGS AND FLANGE ADAPTORS

Flexible couplings and flange adaptors shall be the Viking Johnson or Klamflex type.

Manufacture of straight and stepped couplings (SR-C + ST-C) as well as flange adaptors (FA) to be approved by Engineer. Couplings must be able to withstand hydrostatic test pressures of 1.5 times the specified design pressures and coupling flanges must be designed to withstand all stresses due to tightening of the bolts. Rubber rings shall generally comply to SABS 974 Class F. Flexible couplings shall be supplied complete with all necessary bolts, nuts and rubber jointing rings.

Coupling installation gaps to be to approved supplier's specification.

Applicable to all flange adaptors:

- Studs may not be welded onto flange.
- Flange to be drilled and tapped for threaded studs where applicable.
- Drilling to suit connecting flange.

PLN 9 MARKING OF PIPES

All pipes and specials shall be clearly hand stamped alongside a longitudinal or spiral weld on one end of the pipe with the following.

- a) Grade and thickness of steel
- b) Serial number of the pipe or specials
- c) Nominal diameter
- d) Hydraulic test pressure

PLQ CORROSION PROTECTION OF PIPES AND FITTINGS

PLQ 1 SCOPE

This specification covers various corrosion protection systems for cast iron, steel and stainless steel pipes and fittings for the conveyance of water at ambient temperatures.

PLQ 2 CORROSION PROTECTION SYSTEMS

The following corrosion protection systems shall apply unless otherwise specified on the drawings, project specifications and schedule of quantities.

PLQ 2.1 Buried steel pipework

- a) Pipe diameter up to 150mm

Pipework shall be hot-dipped galvanized unless otherwise specified.

After installation, the pipework shall be protected with a Denso HT Petrolatum tape wrapping system as specified in this specification.

- b) Pipe diameter larger than 150mm

Specials, fittings and couplings shall be lined and coated with epoxy paint.

After installation the specials and fittings shall be protected with the Denso Ultraflex 1250/300 and MDP 032 tape wrapping system as specified in PLQ 11.1.

Standard pipe lengths shall be lined with epoxy paint and coated with fusion bonded medium density polyethylene (MDPE) or Bituguard or 3LPE as specified in this specification unless otherwise specified in the Project Specifications or the Bill of Quantities or on the Drawings.

PLQ 2.2 Pipework inside chambers

- a) Pipe diameter up to 150mm

Pipework shall be hot-dipped galvanized.

The outside end of fittings cast into the walls of the chamber shall be protected with a Denso HT Petrolatum tape wrapping system.

- b) Pipe diameter larger than 150mm

Fittings, specials and couplings shall be coated and lined with epoxy paint.

The outside end of the fitting cast into the wall as well as couplings outside the chamber shall be protected with a Denso HT Petrolatum tape wrapping system.

PLQ 2.3 Pipework exposed to sunlight

- a) Pipe diameter up to 150mm

Pipework shall be hot-dipped galvanized.

Pipe surface shall be prepared for re-coatable silver polyurethane acrylic site application.

After installation the pipe shall be painted with re-coatable silver polyurethane acrylic.

- b) Pipe diameter larger than 150mm

Pipework shall be lined with epoxy paint.

Pipes shall be coated in the factory with two component inorganic zinc silicate primer (100 micron) plus one coat of silver polyurethane acrylic (60 micron).

A second coat of polyurethane acrylic (60 micron) must be applied on site. The inorganic zinc silicate must be repaired with "single pack zinc rich epoxy primer".

PLQ 2.4 Exposed pipework inside buildings

- a) Pipe diameter up to 150mm

Pipework shall be hot-dipped galvanized.

Pipe surface shall be prepared for re-coatable polyurethane site application.

After installation the pipe shall be painted with re-coatable polyurethane to the Employers colour coding specification.

- b) Pipe with diameter larger than 150mm Pipes, fittings and couplings shall be lined and coated with epoxy paints.

After installation the pipework shall be painted with re-coatable polyurethane to the Employers colour coding specification.

PLQ 2.5 Pipework inside water retaining structures

All stainless steel pipework inside water retaining structures and cast into the walls or floor of water retaining structures shall be lined and coated with epoxy paint.

All stainless steel shall be 316L.

PLQ 3 SURFACE PREPARATION

Contractors must submit information on the cleaning methods to be used in meeting the specified requirements. Contractors must further provide the Engineer with the manufacturer's guarantee that the requirements have been met.

PLQ 3.1 Surface preparation of steel surfaces

All projections, sharp edges, layers that have formed and tool marks must be removed from the surface so that the surface is smooth, and it must be abrasive blast cleaned in accordance with sections 2, 3 and 4 of SABS Code of Practice 064 so that it meets the following requirements:

- (a) A grade of cleanliness of Sa 3 of ISO 8501-1 when tested by SABS test method 767.
- (b) A surface profile between 60mm and 85mm when tested by SABS test method 772.
- (c) Free from dust and debris to at least 0,2% when tested by SABS test method 769.

PLQ 3.2 Surface preparation of galvanized surfaces

Surfaces to be coated shall **not** be passivated.

Galvanized steel surfaces shall be degreased prior to coating, using either a water-soluble solvent degreaser in accordance with SABS 1344 and the manufacturer's instructions, or a mild acid-detergent degreasing solution to be approved by the Engineer.

Large areas shall be prepared by sweep-blasting with non-metallic abrasive. Cracking, flaking or any form of de-lamination of the zinc coating due to excessive blast-cleaning shall not be permitted. Removal of zinc by blast-cleaning shall not exceed 10 µm.

Surfaces that cannot be sweep-blasted shall be abraded manually or mechanically with abrasive paper grade 220 or by using non-metallic abrasive pads.

Finally, all dust and debris shall be removed by vacuum-cleaning.

Epoxy primer for galvanised surfaces shall be applied immediately after surface preparation to a minimum dry thickness of 50 µm.

PLQ 3.3 Surface preparation of stainless steel surfaces

Oil and grease contamination shall be removed by:

- Steam-cleaning
- An emulsifiable or aqueous detergent, or
- An alkaline cleaning solution.

Stainless steel surfaces shall be blast-cleaned with stainless steel grit or non-metallic abrasive. The use of steel shot and steel or cast-iron grit is strictly prohibited.

The grade of cleanliness shall be at least Sa 2½.

Surface profile shall be in the range of 30 to 50 µm.

Where blasting is impractical, the surface shall be roughened manually with abrasive paper grade 220, disc grinders or flapper wheel abrasive pads. In all instances, clean, uncontaminated equipment must be used.

Dust and debris shall be removed by vacuum-cleaning.

PLQ 4 HOT-DIP GALVANIZING

Unless otherwise specified, steel pipes up to 150 mm dia. shall be hot-dipped galvanized. Hot-dip galvanizing to be in accordance with SABS 763 – 1988 except that minimum thickness shall be 55 micron. Cut ends and small damaged areas shall be repaired by the application of a zinc-rich epoxy (single pack) to SABS 763 (ZINC GALV 1 – Dulux or POLY GALV – Plascon).

Only heavy-duty galvanising will be approved and all items to be provided with a SABS approval certificate.

PLQ 5 EPOXY PAINTS

Epoxy paint shall comply to SABS 1217. Surface preparation shall be abrasive blast cleaning to Sa 3 of ISO 8501-1.

The following will be applicable where epoxy paint is specified:

- Lining of pipes with nominal diameter equal or larger than 600 mm and standard pipe lengths of 9,144 m, 12,192 m and 18,288 m:

Solvent free epoxy (Sigmaline 523 or Pipecoat SF or similar approved by Engineer), with a minimum dry film thickness of 400 micron and a maximum dry film thickness of 500 micron.

- Lining and coating if all other pipes, specials and fittings, except where multi-purpose epoxy coating is specified:

Solvent borne epoxy (Carboguard 891 or Sigmaguard 720 or similar approved by Engineer) with a minimum dry film thickness of 400 micron.

Epoxy paint and the repair kit for the repair of epoxy shall be from the same manufacturer.

Edges with epoxy paint shall have a radius of 3 mm or 50 % of the pipe wall thickness (smaller of two).

Where another type of coating is specified, epoxy paint lining shall continue around pipe edge for each of the following:

- *Flanged end*

Onto both flange faces, extending for 50 mm (min) onto pipe outer wall beyond flange.

- *Ends suitable for straight or stepped couplings or flange adapters*

Onto pipe outer wall for 250 mm (min) from pipe end.

- *Ends suitable for flange adapters, incorporating a restraining flange*

Onto pipe outer wall from pipe end, up to and including both faces of the restraining flange as well as 50 mm (min) beyond the restraining flange.

The following specification shall be applicable to pipes, specials and fittings to be painted with epoxy.

- In the factory:

Abrasive blast cleaning of complete steel surface to Sa 3 of ISO 8501-1. Apply epoxy paint to 100mm from pipe end.

- On site:

Abrasive blast cleaning of steel surface to Sa 3 of ISO 8501-1 and 50 mm of painted surface to a surface profile of 60 – 85 microns.

Apply epoxy repair kit from the same manufacturer as the factory applied epoxy to a minimum dry film thickness of 400 micron. The type of epoxy repair kit shall be subject to the approval of the Engineer.

The painted area shall be tested for pinholes and thickness.

PLQ 6 UV-RESISTANT MULTI-PURPOSE EPOXY PAINT

Multi-purpose epoxy shall be of the high build, modified aluminium epoxy mastic type, containing at least 90% solids.

PLQ 7 RE-COATABLE POLYURETHANE

The area to be over-coated shall be abraded with abrasive paper grade 220 to a uniform matt finish.

The surface shall be vacuum-cleaned to remove dust and debris.

Over-coat with a 40 µm minimum layer of Re-coatable Polyurethane in accordance with the Employer's colour code.

PLQ 8 FUSION BONDED, MEDIUM DENSITY, POLYETHYLENE COATINGS (MDPE)

An uniform MDPE coating must be obtained by dipping the already prepared and heated pipe into a fluidified bed of MDPE powder which then fuses directly on to the heated surface.

A coating thickness of between 1,8 mm to 2,3 mm depending on the outside diameter (OD) of the pipe and the service for which it is required must be obtained with the coating extending around the ends of the pipe to underlap the concrete lining for Sinta Joint pipes by a minimum of 25 mm.

- OD < 508 mm : coating thickness = 1,8mm
- 508 mm ≤ OD ≤ 762 mm : coating thickness = 2,0mm
- OD > 762 mm : coating thickness = 2,3mm

Fusion bonded MDPE coatings shall comply to AS 4321 and must meet the applicable SABS requirements for this type of pipe protection. Surface preparation shall be abrasive blast cleaning to Sa 3 of ISO 8501-1.

PLQ 9 POLYMER MODIFIED BITUMEN (BITUGUARD)

Bitugard coating shall be in accordance with SANS 1178 and BS EN 10300, Type A Heavy Duty with a minimum thickness of 4mm.

Surface preparation shall be abrasive blast cleaning to Sa3 of ISO 8501-1.

PLQ 10 THREE LAYER POLYETHYLENE COATING (3LPE)

3LPE coating to be in accordance with CSA Z245.20 - 21 with the following minimum thicknesses:

- Fusion bonded epoxy (FBE) layer: 300 micron

- Adhesive layer: 200 micron
- High density polyethylene layer:
 - Nominal pipe diameter up to and including 250 mm – 2,0 mm
 - Nominal pipe diameter greater than 250 mm but less than 600 mm – 2,5 mm
 - Nominal pipe diameter of 600 mm and greater - 3,0 mm

A polyethylene layer cut back shall be provided at pipe ends as follows:

Pipe ends shall be supplied as bare steel, free of all coating, for a distance of 100 mm (+25/-0mm) from the pipe end. In addition, each pipe end shall be left without polyethylene / adhesive coating so that a 20 mm (+10/-0mm) FBE toe protrudes on the steel beyond the cutback polyethylene coating layer.

The ends of the coating shall be bevelled at 30° to 45°.

Surface preparation shall be abrasive blast cleaning to Sa3 of ISO 8501-1.

After blast cleaning and prior to the application of the FBE layer, the pipe surface shall be pre-treated by acid wash. A method statement for the acid wash supported by product data and the PQT results shall be provided for the review of the Engineer before commencement of the coating process.

PLQ 11 JOINT COATING SYSTEMS

PLQ 11.1 MDPE and three-layer polyethylene (3LPE) coating

The unprotected area at welded joints shall be protected as follows:

- The cutback of the coating shall be 100 mm from the pipe ends.
- Chamfer any raised edges or steps in the existing coating.
- The factory applied polyethylene pipe surface to which the cold tape wrapping is to be applied shall be abraded with 40 grit abrasive paper or sweep blasted for 100mm beyond the steel surface toe.
- Abrasive blast cleans the steel surface to Sa 3 of ISO 8501-1.
- For 3LPE apply Denso Protal 7200 liquid epoxy to the blast cleaned surface and adjacent prepared factory FBE coating to a minimum dry film thickness of 400 micron.
- The entire joint surface to be wrapped shall be primed with Denso Primer D.

Priming shall not be carried out further ahead of physical tape wrapping than a

maximum of 4 hours.

Ensure the primer is dust free prior to application of a tape wrap system. If the primer has become severely contaminated with dust, a re-prime shall be carried out. Heavy contamination with sand or dirt shall require cleaning of the surface with a manufacturer recommended cleaning solvent (e.g. Denso Cleaning Solvent) and re-application of the primer.

Allow approximately 30 minutes drying time or until the primer is tacky to the touch.

- The inner wrap shall consist of a 100 mm wide conformable polyethylene backed modified bitumen mastic tape, compliant with the requirements of SANS 1117 type C (DENSO ULTRAFLEX 1250/300)

Peel back approx. 0,5 m of interleaving. Align the edge of the 100 mm wide tape 50 mm onto the primed, factory applied, polyethylene pipe coating. Press down firmly.

Before spiral wrapping commences, a full circumferential wrap of tape is applied by hand with sufficient tension to narrow the width of tape between 1 and 2 mm.

Whilst maintaining tape tension as described above, the tape shall be applied spirally. Remove interleaving as wrapping proceeds.

The tape shall be applied to ensure that a minimum 25 mm overlap shall be achieved.

- The outer wrap shall consist of a 100 mm wide medium density adhesive polyethylene compliant with the requirements of SANS 1117 Type B&D (DENSO MDP 032).

Centre 100 mm wide outer-wrap tape on the edge of the applied inner wrap tape on the factory applied coating. Press down firmly. Before spiral wrapping commences, a full circumferential wrap of tape is applied by hand with sufficient tension to narrow the width of tape between 1 and 2 mm. Whilst maintaining tape tension as described above, the tape shall be applied spirally.

The tape shall be applied to ensure that a minimum 55% overlap shall be achieved.

The tape shall be applied to a minimum width of 50 mm beyond the applied inner tape-wrapped area onto the primed shop applied coating.

Ensure that the tape is in full contact with the underlying surface with no wrinkles, fish-mouths or bubbles.

- Holiday detection shall be carried out in accordance with NACE RP0188. Damaged areas on MDPE coatings shall be repaired in accordance with the specifications and guidelines of the coating manufacturer.

PLQ 11.2 Polymer Modified Bitumen (Bituguard) Coating

The unprotected area at welded joints to be coated with Denso Primer D and wrapped with Densotherm HD heat applied bitumen wrapping with a minimum thickness of 5 mm.

Surface preparation shall be abrasive blast cleaned to Sa3 of ISO 8501-1.

PLQ 12 DENSO HT PETROLATUM TAPE WRAPPING SYSTEM

Denso HT Petrolatum tape wrapping system shall be used for the wrapping of buried flange and flexible joints and buried galvanized pipes and where specified in the Specifications, Bill of Quantities or Drawings.

PLQ 12.1 General

Surface preparation shall be abrasive blast cleaning to Sa3 of ISO 8501-1.

Chamfer any raised edges or steps in the existing coating.

Apply Denso Priming Solution.

Apply Denso HT Tape of appropriate width uniformly in a spiral fashion to give a 55% overlap on the pipe and for not less than 200 mm along the length of the intact factory coating.

Apply uniform tension to ensure the tape is smooth and free from wrinkles. Do not apply excessive tension that will stretch the tape nor insufficient or uneven tension that will give rise to air bubbles and wrinkles.

PLQ 12.2 Flexible couplings and flanges

Apply Denso Mastic so as to create a smooth profile suitable for over-wrapping. Wrap a suitable width of Denso HT Tape over the coupling. Ensure that there are not air voids under the tape. Apply a double layer of Denso Layflat polyethylene sheeting over the whole length of the repair and for 100mm beyond each end of the repair. Tape the ends of the Layflat with two complete turns of 100 mm wide adhesive Denso PVC tape to seal the ends.

Denso fabric backed mastic blanket can be used as an alternative for Denso HT Tape. After priming, pack potential air void areas such as under the bolts with Denso Mastic. Place the mastic Blanket in position and press it into all air voids. Start under the pipe and work upwards. Over wrap the Mastic Blanket with two layers of Denso Layflat sheeting and secure the ends with 100mm wide adhesive Denso PVC tape.

If the pipe runs through very wet soils, it is recommended that Denso S105 Paste be used in preference to Denso Priming Solution and the couplings be wrapped with Denso PVC Self Adhesive Tape using a 55% overlap in place of the Layflat Sheeting.

PLQ 12.3 Welded joints and straight pipe lengths

After completion of Denso HT Tape wrapping and approval by the Engineer, apply 0,3mm adhesive PVC outer wrap with 55% overlap over the whole length of the wrapping and for 100mm beyond each end.

PLQ 13 CUT BACK AT PIPE ENDS

The exposed grit blasted bare steel surface at the ends of pipes, specials and fittings to be welded on site shall not be painted with any product in the factory and shall be protected against corrosion after installation.

PLQ 14 ADDITIONAL EXTERNAL PROTECTION FOR PIPES CAST INTO CHAMBER WALLS

After the concrete has cured for 7 days, wire brush or scabble the exterior and interior surfaces of the wall to remove laitance. Dry brush to remove all loose powder.

Mix ABE Super Laykold and water (1:1 ratio) and apply as a primer to the concrete and the pipe surfaces. After 1 hour apply a thick coat of ABE Super Laykold to the concrete and the pipe and immediately embed 250mm wide ABE non-woven polyester membrane "SBP" into the Super Laykold. After 3 hours apply another coat of Super Laykold.

This additional protection is required on the inside and outside of chamber walls.

There must be no contact between the steel pipe and the chamber reinforcement.

PLQ 15 MEASUREMENT AND PAYMENT

Corrosion protection and painting shall not be measured separately. The price for corrosion protection and painting shall be deemed to be included in the price for the pipe, fitting or special.

PLT: FLOW METERS (GENERAL)

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PLT FLOW METERS

PLT 1 SCOPE

This section of the Specification deals with the supply, delivery, installation and commissioning of:

- (a) in line ultrasonic flow meters;
- (b) clamp on ultrasonic flow meters
- (c) flanged mechanical turbine meters
- (d) electromagnetic flow meters.

PLT 2 IN-LINE ULTRASONIC FLOW METERS

PLT 2.1 General Requirements

An in-line ultrasonic flow meter will consist of:

- i) Two machined, stainless steel, weld-on sockets with inserted perspex windows, which are held by two plastic flanges secured with stainless steel bolts and spring washers.

The tenderer shall be responsible for the welding of the sockets on to the pipeline, as well as making good all corrosion protection according to applicable specifications.

- ii) Two 1 MHz sensing units, connected via co-axial cables of 50 ohms, with a minimum length of 12 m, to the transmitter.

The sensing units are to be removable under full pressure, while the pipeline is operating.

Both sensing units shall be electrically isolated from the pipeline.

- i) A transmitter that shall have two output circuits:
 - (1) One circuit for the 4-20 mA output signal to drive an indicator, and if later required a recorder, with maximum load capacity of 1 000 ohm.
 - (2) The second circuit to drive a 24 V integrator, with a 2% zero flow cut off.

All power requirements other than 230 V will have to be provided for by the successful Tenderer. The transmitter shall have facilities to adjust for the various pipe diameter and flow rates.

PLT 3 CLAMP-ON ULTRASONIC FLOW METERS

PLT 3.1 General Requirements

Single channel flow meters operated in transit time or time-of-flight mode shall be provided unless otherwise specified. The flow meter provided shall be capable of measuring the instantaneous flow in a pipeline and give the accumulated flow. The installation shall comprise at least two (2) sensing units (transducers) that are connected via co-axial cables and connected to a signal conversion unit. The signal unit shall be locally programmable and shall be supplied complete with programmer unit. The signal converter shall further more have a LCD display for instantaneous flow and totalize flow and shall have a 4-20 mA and pulsed output for remote indications. The signal converter unit will be mounted in an outdoor type cubicle, which will be supplied and installed under the electrical portion of the Contract.

Welding of transducers onto the pipe will not be allowed.

The IP rating for the housing of the transducers shall be *submersible*.

The mountings on the transducers shall be manufactured by stainless steel.

The location of the flow meter installation shall be indicated on the relevant drawings, together with the following general information:

- Pipe outer diameter
- Pipe material
- Pipe wall thickness
- Internal lining
- Average thickness of internal lining
- Fluid to be measured
- Distance between transducers and signal converter

The operating temperature for all equipment shall be minimum -10°C and maximum 55°C.

PLT 3.2 Flow Accuracy

The flow accuracy (velocity) shall be $\pm 1\%$ of reading for pipe diameter greater than 150mm and flow velocities greater than 0.3 m/s. For pipe diameters smaller than 150mm, the flow accuracy shall be $\pm 3\%$.

The overall rangeability or turn-down ration shall be at least 400:1. The repeatability for clamp-on transducers shall be 0.2 to 0.5% of full scale reading.

PLT 3.3 Calibration

The Contractor shall allow for the calibration of the flow meter one month after installation by Technology Services International of Eskom enterprises. A certificate of calibration shall be submitted to the Engineer, acceptance of which signifies final completion of the installation.

PLT 3.4 Guarantee Period

The ultrasonic flow meter shall be guaranteed for a period of at least **24 Months** from date of **successful commissioning**.

PLT 4 FLANGED MECHANICAL TURBINE METERS

PLT 4.1 Equipment Preferred

All mechanical turbine meters shall be type Sensus or similar and approved.

PLT 4.2 Accuracy

All mechanical meters supplied in terms of this Contract shall perform to an accuracy of better than $\pm 2\%$ error over the meters operating range i.e. between Q_t (transitional flow) and Q_n (continuous flow). The performance characteristics of the meters offered shall be equal to or better than the values tabled below:

Size (DN) (mm)	Q_{min} (m ³ /h)	Q_t (m ³ /h)	Q_n (m ³ /h)	Q_{max} (m ³ /h)
40	0.3	0.8	40	60
50	0.3	0.8	50	90
80	0.5	0.8	120	200
100	0.8	1.8	230	300
150	1.8	4	450	600
200	4	6	800	1200
250	6	11	1250	1600
300	12	15	1400	2000
400	25	50	2000	3000
500	45	60	3000	4500
600	100	180	3300	6500
800	210	320	6000	12000

PLT 4.3 General Requirements

Meters must be fitted with dry dial registers, which comprise 6-digit cyclometer-type totalizers, registering in kilo-litres (kl) or m³. These registers must be sealed to prevent ingress of dirt or moisture. The registers, which are to be fitted as standard, must be able to provide one high frequency opto-type pulse output function and two low frequency reed-type pulse output functions. All flow meters shall be provided complete with frequency converter unit and Opto coupler. The frequency converter unit will be mounted in an outdoor type cubicle, which will be supplied and installed under the electrical portion of the Contract.

No consideration will be given to meter types, which necessitate the use of special tools or fitment of any form of gland in the process of connecting pulser units, or, meters which require a register-change to switch from one volume unit per pulse to another. Dismantling of registers for this purpose will not be acceptable. Tenderers are to provide full details of these aspects with their tenders.

Cover bolts must be of stainless steel material to facilitate easy removal of mechanisms. Meter bodies must be coated with a high-quality sintered epoxy powder coating, both internally and externally, to provide maximum protection against corrosion.

Although most of the meters will be installed horizontally, it must be possible to install the meters vertically (with flow in the upward direction) or in an inclined position (with flow in the upward direction), should site conditions make this necessary.

Tenderers must provide full details of the minimum lengths of straight pipe required upstream and downstream for each size of meter offered, to ensure that the accuracy of the meters remain within the stated limits, under normal operating conditions. Preference will be given to meter types requiring a minimum of straight pipe upstream and downstream, as installation space and lay lengths are at a premium.

The performance of the meters offered shall not be affected by outside magnetic influences.

Details of head loss across the meters offered shall be provided by the Tenderer.

PLT 5 ELECTROMAGNETIC FLOW METERS

PLT 5.1 General Requirements

All electromagnetic flow meters supplied under this contract shall be for high measuring accuracy i.e. $\pm 0.5\%$ of reading plus 0.05% of full scale. The repeatability or reproducibility of measurement

shall be $\pm 0.1\%$ of full scale. The meter shall have a long term zero stability of $\pm 0.2\%$ and linear variation shall be less than 0.2% .

Electrodes shall be manufactured from a high quality metal and shall be removable for cleaning purposes. Removal of electrodes with the line under pressure is preferred.

The minimum downstream and upstream unrestricted straight pipe run required for the specified measurement accuracy shall be stated by the Tenderer.

Although most of the meters will be installed horizontally, it must be possible to install the meters vertically (with flow in the upward direction) or in an inclined position (with flow in the upward direction), should site conditions make this necessary.

The flow meter shall be equipped with a separate mountable signal converter unit complete with sufficient length of signal cable. The signal converter shall be locally programmable and shall be supplied complete with programmer unit. The signal converter shall further more have a LCD display for instantaneous flow and totalized flow and shall have a 4-20 mA and pulsed output for remote indications. The signal converter unit will be mounted in an outdoor type cubicle supplied under the electrical scope of the Contract.

Electromagnetic meters and converters shall be suitable for outdoor installation and shall be adequately protection against lightning.

PLT 6 DIGITAL INDICATOR/INTEGRATOR

The display shall be a 6-digit, 0.56" (14.2mm) High Red L E D, giving a maximum display of 999999. The decimal point shall be selectable.

A flashing display shall be given during totaliser overflow.

The indicator/integrator shall be powered by 230 V AC at 50 Hz.

The indicator/integrator shall be constructed in such a way that it can be calibrated to the required flow and also by means of a selector button, display the accumulated quantity of water released.

The front bezel shall meet NEMA 4/IP65 requirements

The manufacturer of the indicator/integrator shall comply with ISO 9001 and proof of this to be submitted with the tender documents.

The indicator/integrator shall have a lock-out facility to limit operator entry to the programmable settings and totaliser.

The totaliser shall have a programmable time base with a scale factor of 0.001 to 100.0 and a low-end cut-out.

The remote indicator/integrator if required is to be fitted into an IP 66 enclosure in such a way that the flow reading is clearly visible with space available for the labelling and surge protection as specified.

PLT 7 INSTRUMENT PANELS

All panels will comply with the minimum requirements for an IP 65 rating.

All cable entries will be fitted with the appropriate cable gland. All cable glands will comply with IP 68.

Each enclosure is to be fitted with an M10 brass bolt and two nuts that will act as an earth bar. All surge protection in the enclosure to be grounded onto this bolt.

a) Local indicator/integrator

An instrument panel is required to house the flow meter power supply unit if required, indicator/integrator and surge protection and shall comply with the following:

1. At least 500 mm high, 400 mm wide and 200 mm deep.
2. Constructed from polycarbonate.
3. The door shall be removable and have concealed hinges and captive, stainless steel hinge pins.
4. Be fitted with a plain painted metal chassis of at least 2.5 mm thick.
5. Be fitted with a polyester internal door for mounting of the totaliser.
6. The external door shall be fitted with a window that allows sight of the totaliser.
7. The external door shall have an extruded polyurethane seal fitted to a groove.

8. Only two closure points that are situated outside the sealed area. At least one of the closure points shall be lockable with a cylindrical barrel type lock and two keys shall be supplied for this lock.
9. Shall be wall mountable with 4 stainless steel brackets giving a space of at least 10 mm between the enclosure and the wall.

b) Remote indicator/integrator (if required)

An instrument panel is required to house the remote indicator/integrator and surge protection and shall comply with the following:

1. Constructed from polycarbonate.
2. The door shall be removable and have concealed hinges and captive, stainless steel hinge pins.
3. Fitted with a polyester internal door or stand-offs for mounting of the totaliser.
4. The external door shall be fitted with a window that allows sight of the totaliser.
5. The external door shall have an extruded polyurethane seal fitted to a groove.
6. Only two closure points which are situated outside the sealed area. At least one of the closure points shall be lockable with a cylindrical barrel type lock and two keys shall be supplied for this lock.
7. Shall be wall mountable with 4 stainless steel brackets giving a space of at least 10 mm between the enclosure and the wall.

PLT 8 SURGE PROTECTION

Single phase 230 V AC medium protection units that are certified to withstand surges of up to 75kA.

Two wire, 230 V AC fine protection units that are certified to withstand surges of up to 40kA.

Two wire, 24 V AC fine protection units that are certified to withstand surges of up to 40kA.

Two explosion proof, pipeline spark gaps rated to withstand surges of up to 100kA, complete with pipeline mounting brackets and a fly lead of at least 300mm.

All surge protection units must be grounded to a common earth point in the panel that houses the ultra sonic flow meter. If a nut and bolt arrangement is used it shall be at least an M10 and shall be made of brass. Care has to be taken to ensure that the nut and bolt do not negate the IP 65 rating of the enclosure.

PLT 9 SIGNAL CABLE

All signal cable to be 1,5 mm², 4 core, twisted pair, braided screened cable.

PLT 10 EARTHING

The successful Tenderer is to supply 70 mm², stranded copper cable as well as lugs that will fit the cable and an M10 bolt to connect between the equipotential bar and earth mat.

The successful Tenderer is to supply 16 mm², green PVC insulated, stranded copper cable to connect between the common earth at the instrument panel and the equipotential bar.

PLT 11 EQUIPOTENTIAL BAR

An equipotential bar with cover must be suitably mounted within each flow meter chamber. Modular terminals should be provided to accommodate 3 connections of up to 16 mm², 3 connections of 16 - 95 mm² and 3 for flat connections up to 30 mm wide.

PLT 12 LABELS

Two types of labels are required. One for the site and installation name, the other giving details of the flow meter characteristics.

Labels to be manufactured from plastic engraved stock with white lettering on a black base.

Lettering to be 10 or 6 mm high x 5 and 3 mm wide and labels to be at least 105 mm X 30 mm.

All labels to be fitted with at least two strips of 12 mm wide double sided tape that run for the total length of the label.

PLT 13 GENERAL REQUIREMENTS

All screws, brackets, cable saddles, nuts, bolts, washers etc. used in the installation of the equipment shall be from stainless steel.

Before delivery to site all equipment and all parts supplied under this contract will be checked and certified at the supplier's workshop to ensure that they are in working condition by a delegated representative of the client.

PLT 14 COMMISSIONING

The equipment as supplied under this Contract shall be commissioned after **one fault free month** of operation.

If during this month the equipment or any part thereof should fail the successful Tenderer shall repair the equipment at his own expense and once again leave the equipment to operate for one fault free month before commissioning. All costs incurred shall be for the successful Tenderer's account. This cycle to continue until one fault free month has been attained.

PWB SETTING OUT

PWB1 GENERAL

This Particular Specification describes the requirements for setting out of the Works. No separate payment will be made for work described in this section.

PWB2 FIELD WORK

- (a) All survey shall be based on the appropriate Lo system of the national triangulation.
- (b) All points to be set out by the Contractor shall be located in the X, Y and Z directions according to land-survey methods generally accepted in the Republic of South Africa so as to ensure that the required degree of accuracy is achieved.
- (c) The Contractor shall identify and list the beacons that he used as traverse terminals, or for the fixing of points by trigonometrical survey methods.

PWB3 SURVEY RECORDS AND CALCULATIONS

- (a) All records shall be neat, orderly, fully annotated and cross-referenced, adequately checked and shall include the following:
 - general report,
 - all field placings and checks,
 - final co-ordinate list and differences between polars,
 - levels and check levels, and
 - a summarised list of final X, Y and Z values on all pegs.
- (b) Plans, field books and all calculations shall bear the field surveyor's and the Contractor's signatures, be fully dated and numbered sequentially.
- (c) Only originals shall be submitted.
- (d) The calculations are required to follow basically the principles in common use in the Republic of South Africa, as described in the Annexures to the Survey Regulations framed under the Land-Survey Act of 1927 (as amended).

PWB4 SURVEY BEACONS

Beacons that have been or will be erected by the Engineer are shown on the Drawings, generally at inflexion point and 400m maximum spacing. Additional survey beacons shall be

provided by the Contractor at intermediate points in order to provide line of sight at all points and for the proper construction of the Works.

PWB5 REFERENCE PEGS

- (a) Reference pegs have been placed approximately every 400m and at all inflexion points. Two references have been placed per point to be referenced.
- (b) The Contractor shall protect these references, and place further references as may be necessary to secure the position of the pipeline at all times. All reference peg positions shall be determined by means of a double polar or by traverse.
- (c) Reference pegs placed by the Contractor shall at least consist of a steel peg (Y10 or Y12) cast into a concrete block of 300mm diameter and 200mm depth. The Contractor shall note that the value of the survey depends largely on the permanence of its reference points. The Contractor shall apply suitable additional measures in unstable soils to assure the permanence of points.
- (d) Reference pegs shall be numbered consecutively with a 10mm stamp on an aluminium tag cast into the concrete, in accordance with the node numbering sequence indicated on the Drawings.
- (e) The allowable error is 0,02m in the XY plane.

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(CONTRACT C)

C3.5 MANAGEMENT

C3.5.1 Management of the Works

C3.5.1.1 Concurrent Construction Contracts

Refer to Section C3.4.1 (PS10.1.)

C3.5.1.2 Construction Programme

Refer to Section C3.4.1 (PS5.)

C3.5.1.3 Drawings, Operation and Maintenance Manuals

Refer to Section C3.4.1 (PS11.)

C3.5.1.4 Site Administration

Acceptance control, record keeping and payment certificates shall be done in accordance with the Employer's Agent's standard system except if the Employer's Agent approves that the Contractor's standard system may be used.

C3.5.1.5 Daily Site Diary

The daily site diary shall be kept up to date by the Contractor's Site Agent and will be signed on a daily basis by the Employer's Agent's Representative.

C3.5.1.6 Information in Respect of Plant

Information relating to plant on Site shall be recorded in the daily site diary. In addition, the Contractor shall deliver to the Employer's Agent, on a monthly basis, a detailed summary of construction plant kept on the Site, full particulars given for each day of the month. Distinction shall be made between plant in working order and plant out-of-order. Such inventory shall be submitted by the first day of the month following the month to be reported.

C3.5.1.7 Information in Respect of Employees

Information relating to labour and management on Site shall be recorded in the daily site diary. In addition, the Contractor shall deliver to the Employer's Agent, on a monthly basis, a detailed summary of supervisory staff, labour employed (own and local labour) by category, and sub-contractors (both local and imported) for each day of the month. Such return shall be submitted by the first day of the month following the month to be reported.

C3.5.1.8 Rainfall Records

Rainfall records for the period of construction shall be taken on Site and recorded in the daily site diary. The Contractor shall provide and install all the necessary equipment for accurately measuring the rainfall. The Contractor shall also provide, erect and maintain a security fence plus gate, padlock and keys at each measuring station, all at his own cost. The Employer's Agent or his Representative shall take and record the daily rainfall readings. The Contractor shall be permitted to attend these readings, in the company of the Employer's Agent's Representative. Access to the measuring gauge(s) shall at all times be under the Employer's Agent's control.

C3.5.1.9 Site Instructions

Site instructions by the Employer's Agent, addressed to the Contractor at his office on the Site, will be numbered consecutively and will be deemed to have been received by the Contractor's Representative unless a break in the sequence of numbers is brought to the notice of the Employer's Agent in writing immediately.

C3.5.1.10 Site Meetings

The Contractor and his authorised representative shall attend all meetings held on the Site with the Employer and the professional team at dates and times to be determined by the Employer's Agent. Such meetings will be held to evaluate the progress of the Contract, and to discuss matters pertaining to the Contract which any of the parties represented may wish to raise. It is not the intention to discuss day-to-day technical matters at such meetings.

C3.5.1.11 Payment Certificates

Monthly Progress Payment Certificates shall be submitted to the Employer's Agent's Representative on Site not later than the 20th of each month (or on the last working day prior to this date) in order to allow for checking and reconciliation of all quantities, rates, extensions and additions in the certificate. Each progress payment certificate shall include work executed or reasonably expected to be executed up to the 30th day of the specific month. The Employer's Agent's Representative shall have a period of five (5) calendar days to review the draft certificate in collaboration with the Contractor.

Upon agreement by the Employer's Agent's Representative, the certificate shall be submitted by the Contractor in a neat typed form in accordance with the prescribed format, and with the correct spelling, to the Employer's Agent by not later than the 25th of each month (or on the first working day thereafter), together with four additional copies, for certification.

Where dayworks have been instructed by the Employer's Agent, the Contractor shall submit the returns to the Employer's Agent for signature and approval within twenty-four (24) hours of the end of the working day on which the work was executed. Daywork returns shall be submitted on forms following the standard format as per Section C3.5.1 for this purpose. Failure to comply with the terms of this clause will result in non-payment for such dayworks.

The tax invoice submitted with the certificate shall be dated the 1st of the month following the period certified. All costs for the preparation and submission of progress certificates shall be borne by the Contractor.

C3.5.1.12 Workmanship and Quality Control

Refer to Section C3.4.1 (PS9.)

C3.5.1.13 Features requiring Special Attention

Refer to Section C3.4.1 (PS10.)

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C3.5.2 Health and Safety Specification

PHS OCCUPATIONAL HEALTH AND SAFETY SPECIFICATIONS

PHS 1 SCOPE

Occupational Health and Safety Act, Act 85 of 1993 shall apply to this Contract. The Construction Regulations promulgated on 7 February 2014 and incorporated into the said Act by Government Notice R. 10113, published in Government Gazette 37305 apply to any person involved in construction work.

This specification covers the requirements for Occupation Health and Safety aspects for the project.

PHS 2 NOTIFICATION OF CONSTRUCTION WORK

The Principal Contractor / Contractor is to notify the Local Department of Labour of any construction work to be carried out in the area. (IN WRITING).

A signed, stamped copy of the Notification of Construction Work is to be kept available in the Safety File at all times.

PHS 3 HEALTH AND SAFETY PLAN

The Principal Contractor / Contractor shall submit a Health and Safety Plan for the relevant construction work to be carried out. The Health and Safety Plan shall be submitted to the client for approval by the Client / appointed Safety Agent BEFORE commencement of any work.

PHS 4 RISK ASSESSMENT

The Principal Contractor / Contractor shall submit to the client a Preliminary Task Risk Assessment for approval BEFORE commencement of any work.

The Preliminary Task Risk Assessment can be modified as work progresses and all safe work procedures are to be communicated with all relevant parties. The Risk Assessment is to be compiled by a competent person and appointed in writing in the Safety Plan.

PHS 5 APPOINTMENTS OF PRINCIPAL CONTRACTORS / CONTRACTOR'S RESPONSIBLE PERSONS REGARDING HEALTH AND SAFETY ON SITE.

The legal appointments of all responsible persons are to be conducted in writing, signed by relevant parties and kept available in the Safety File at all times. Legal Appointments are to be updated with any change of responsible persons.

PHS 5.1 Attention must be given to the following appointments:

- Designation of Contractor
- Designation of Risk assessor and Plan Developer
- Emergency Coordinator
- First Aider
- Fire Fighting Inspector
- Person Responsible for Construction Work
- Electrical Installation and Equipment Inspector
- Construction Vehicles and Mobile Plant Operator
- Construction Vehicles and Mobile Plant Inspector
- Welding Supervisor
- Excavations Inspector and Supervisor
- Designation of Fall Protection Plan Developer
- Ladder Inspector
- Appointment of Concrete Mixer Operator / Inspector
- Hand Tools Inspector
- Stacking Supervisor
- CEO Responsible for Health and Safety
- 16 (1) Appointment
- 16 (2) Appointment
- Incident / Accident Investigator
- Health and Safety Coordinator
- Chairman of Health and Safety Committee
- Health and Safety Representative

PHS 6 HEALTH AND SAFETY REPRESENTATIVE

The Principal Contractor / Contractor shall ensure that the appointed Health and Safety Representatives are on site at all times to oversee employee's activities. Daily / Weekly / Monthly inspection registers are to be completed, all deviations noted and reported to the responsible persons to ensure that appropriate action is taken. All inspection registers will be audited by the Safety Agent / Safety Consultants. Copies Health and Safety Records are to be handed over to the Client upon completion of the construction work.

PHS 7 PROOF OF TRAINING

The Principal Contractor / Contractor shall make available all proof of training conducted with employees during the project period.

PHS 7.1 This will include:

- Health and Safety Representative

- First Aiders
- Mobile Plant Operators (medical certificates of fitness and competency licenses)
- All induction training and "Tool Talks."
- Attendance register of Community Safety Induction (Conducted by CLO, when required).

PHS 8 EMERGENCY PROCEDURE / FIRST AID

The Principal Contractor / Contractor is to ensure that a fully stocked First Aid Box is available on site at all times. Site Supervisors / First Aiders / Health and Safety Representatives are to be familiar with all emergency telephone numbers listed in the Safety Plan and must be able to communicate to the relevant parties in the event of an emergency. All First Aid treatment is to be documented.

PHS 9 HAZARDS ON SITE

Daily inspection of the work place is to be conducted by Health and Safety Representatives. Potentially hazardous situations are to be identified, documented and communicated to employees.

PHS 10 COMPENSATION FOR OCCUPATIONAL INJURIES AND DISEASES ACT (COIDA)

The Principal Contractor / Contractor is to be in possession of a valid Letter of Good Standing and a copy to be forwarded to the Client before commencement of work. The Letter of Good Standing is to be updated as required and all copies to be kept in the Safety File.

PHS 11 SUBCONTRACTORS

A number of subcontractors will be used on this project.

In reference to the OHS Act 85 of 1993, each subcontracting company must apply themselves to the requirements and regulations of the OHS Act.

Each subcontractor must present his own Safety Plan which must be approved by the Principal Contractor in writing before commencement of the works.

Subcontractors must be in possession of a valid Letter of Good Standing before commencement of works.

Subcontractors must sign an agreement form in terms of section 37 (2) of the OHS Act 85 of 1993 as well as complying with all other relevant documentation.

Each subcontractor will appoint a full-time competent person in writing as the construction site supervisor.

Subcontractors will be used for:

- Possible elevated tank installations
- Blasting procedures
- Pump mains installations

PHS 12 THE COMPANY'S POLICY ON EXCAVATION WORK

PHS 12.1 The Company shall ensure that all excavation work is carried out under the supervision of a competent person who has been appointed in writing.

PHS 12.2 The Company shall evaluate as far as reasonably practicable the stability of the ground before excavation work begins.

PHS 12.3 The Company, when performing excavation, shall:

- a. take suitable and sufficient steps in order to prevent as far as reasonably practicable any person from being buried or trapped by a fall or dislodgement of material in an excavation;
- b. not require or permit any person to work in an excavation, which has not been adequately shored or braced. Provided that shoring and bracing may not be necessary where:
 - (i) the sides of the excavation are sloped to at least the maximum angle of repose measured relative to the horizontal plane; or
 - (ii) such an excavation is in stable material. Provided that:
- c. where any uncertainty pertaining to the stability of the soil still exists, the decision from a professional technologist competent in excavations shall be decisive and such a decision shall be in writing and signed by both the competent person contemplated in sub-regulation (1) and the professional engineer or technologist as the case may be;
- d. take steps to ensure that the shoring or bracing contemplated in paragraph (b) is designed and constructed in such a manner rendering it strong enough to support the sides of the excavation in question;
- e. ensure that no load, material, plant or equipment is placed or moved near the edge of any excavation where it is likely to cause its collapse and thereby endangering the

safety of any person unless precautions such as the provision of sufficient and suitable shoring or bracing to prevent the sides from collapsing:

- f. ensure that where the stability of an adjoining building, structure or road is likely to be affected by the making of an excavation, steps are taken that may be necessary to ensure the stability of such building structure or road and the safety of persons:
- g. cause convenient and safe means of access be provided to every excavation in which persons are required to work and such access shall not be further than 6m from the point where any worker within the excavation is working:
- h. ascertain as far as reasonably practicable the location and nature of electricity, water, gas or other similar services which may in any way be affected by the work to be performed and shall before commencement of excavation work that may affect any such service, take the steps that may be necessary to render the circumstances safe for all persons involved:
- i. cause every excavation including all bracing and shoring, to be inspected:
 - (i) daily, prior to each shift;
 - (ii) after every blasting operation;
 - (iii) after an unexpected fall of ground;
 - (iv) after rain, by the competent person contemplated in sub-regulation (1), in order to pronounce the safety of the excavation to ensure the safety of persons and those results are to be recorded in a register kept on site and made available to an inspector, client, client's agent, contractor or employee upon request.
- j. cause every excavation which is accessible to the public or which is adjacent to public roads or thoroughfares, or whereby the safety of persons may be endangered to be:
 - (i) adequately protected by a barrier or fence of at least one meter in height and as close to the excavation as is practicable; and
 - (ii) provided with warning illuminates or any other clear boundary indicators at night or when visibility is poor;
 - (iii) ensure that all precautionary measures are stipulated for confined spaces as determined in the General Safety Regulations promulgated by Government Notice No. R1031 of 30 May 1986 as amended, are complied with when entering any excavation.

- k. ensure that, where the excavation work involves the use of explosive, a method statement is developed in accordance with the applicable explosives for excavation work and that the procedures therein are followed; and
- l. cause warning signs to be positioned next to an excavation within which persons are working or carrying out inspections or tests.

(Regulation 11 of the Occupational Health and Safety Act 1993)

PHS 13 THE COMPANY RULES ON CONSTRUCTION VEHICLES AND MOBILE PLANT

PHS 13.1 The Company shall ensure that all construction vehicles and mobile plants:

- a. are of an acceptable design and construction;
- b. are maintained in a good working order;
- c. are used in accordance with their design and the intention for which they were designed. Having due regard to safety and health:
- d. are operated by worker who:
 - (i) have received appropriate training and been certified competent and been authorised to operate such machinery; and
 - (ii) are physically and psychologically fit to operate such construction vehicle and mobile plant by being in possession of a medical certificate of fitness.
- e. have a safe and suitable means of access;
- f. are properly organised and controlled in any situation by providing adequate signalling or other control arrangements to guard against the dangers relating to the movement of vehicles and plant, in order to ensure their continued safe operation;
- g. are prevented from falling into excavations, water or any other area lower than the working surface by installing adequate edge protection which may include guardrails and crash barriers;
- h. where appropriate, are fitted with structures designed to protect the operator from falling material or from being crushed should the vehicle or mobile plant overturn;
- i. are equipped with electricity operated acoustic signalling device and a reversing alarm; and

- j. are on a daily basis inspected prior to use by a competent person who has been appointed in writing and the findings of such inspection is recorded in a register.

PHS 13.2 The Company shall furthermore ensure that:

- a. no person rides or be required or permitted to ride on any construction vehicle or mobile plant otherwise than in a safe place provided thereon for that purpose;
- b. every construction site is organised in such a way that, as far as reasonably practicable, pedestrians and vehicles can move safely and without risks to health;
- c. the traffic routes are suitable for the persons using them sufficient in number, in suitable positions and of sufficient size;
- d. every traffic route is, where necessary indicated by suitable signs for reasons of health and safety;
- e. all construction vehicles and mobile plant left unattended at night adjacent to a freeway in normal use or adjacent to construction areas where work is in progress shall have appropriate lights or reflectors, or barricades equipped with appropriate lights or reflectors in order to identify the location of the vehicles or plant;
- f. bulldozers, scrapers, loaders and other similar mobile plant are, when being repaired or when not in use fully lowered or blocked with controls in a neutral position, motors stopped and brakes set;
- g. whenever visibility conditions warrant additional lighting, all mobile plant are equipped with at least two headlights and two taillights when in operation;
- h. tools and material are secured in order to prevent movement when transported in the same compartment with employees;
- i. vehicles used to transport employees have seats firmly secured and adequate for the number of employees to be carried; and
- j. when workers are working on or adjacent to public roads, reflective indicators are provided and worn by the workers.

(Section 20 of the Construction Regulations read with the Occupations Health and Safety Act 1993)

PHS 14 FALL PROTECTION PLAN – REGULATION 8

This plan has been prepared in terms of Section 8 of Construction Regulations R1010 of 18 July 2003.

1. A contractor shall cause –
 - a. the designation of a competent person, responsible for the preparation of a fall protection plan;
 - b. the fall protection plan contemplated in paragraph (a) to be implemented, amended where and when necessary and maintained as required;
 - c. steps to be taken in order to ensure the continued adherence to the fall protection plan;
2. The fall protection plan contemplated in sub regulation (1), shall include –
 - a. a risk assessment of all work carried out from an elevated position which shall include the procedures and methods used to address all the risks identified per location.
 - b. the processes of evaluation of the employees' physical and psychological fitness necessary to work at elevated positions and the records thereof;
 - c. the programme for the training of employees working from elevated positions and records thereof; and
 - d. the procedure addressing the inspection, testing and maintenance of all fall protection equipment.
3. A contractor shall ensure that the construction supervisor appointed in terms of regulation 6 (1), is in possession of the most recently updated version of the fall protection plan.
4. The Company shall ensure that:
 - a. all unprotected openings in floors, edges, slabs, hatchways and stairways are adequately guarded, fenced or barricaded or that similar means are used to safeguard any person from falling through such openings;
 - b. no persons works in an elevated position unless such work is performed safely as if working from scaffold or ladder;
 - c. notices are conspicuously placed at all openings where the possibility exists that a person might fall through such openings;

- d. fall prevention and fall arrest equipment is:
 - (i) suitable and of sufficient strength for the purpose or proposes for which it is being used having regard to the work being carried out and the load, including any person it is intended to bear; and
 - (ii) securely attached to structure or plant and the structure or plant and the means of attachment thereto is suitable and of sufficient strength and stability for the purpose of safely supporting the equipment and any person who is liable to fall;
 - e. fall arrest equipment shall only be used where it is not reasonably practicable to use fall prevention equipment; and
 - f. suitable and sufficient steps shall be taken to ensure as far as reasonably practicable that in the event of a fall by any person the fall arrest equipment or the surrounding environment does not cause injury to the person.
5. Where roof work is being performed on a construction site the Company shall ensure that in addition to the items set out in paragraph 4 that:
- a. that the roof has been properly planned:
 - b. that the roof erectors are competent to carry out the work:
 - c. that no employees are permitted to work on roofs during inclement weather conditions or if weather conditions are hazard to the health and safety of the employees:
 - d. that permanent warning notices are to be placed where covers of openings are not of sufficient strength to withstand any imposed loads and where fragile material exists:
 - e. that the areas mentioned in paragraph (d) are to be barricaded off to prevent persons from entering:
 - f. that suitable and sufficient platforms, covering or other similar means of support have been provided to be used in such a way that the weight of any person passing across or working on or from fragile material is supported: and
 - g. that there is suitable and sufficient guardrails or barriers and toe - boards or other similar means of protection to prevent so far as is reasonably practicable, the fall of any person, material or equipment.

PHS 15 STRUCTURES – REGULATION 9

1. A contractor shall ensure that –

- a. all reasonably practicable steps are taken to prevent the uncontrolled collapse of any new or existing structure or any part thereof, which may become unstable or is in a temporary state of weakness or instability due to the carrying out of construction work; and
- b. no structure or part of a structure is loaded in a manner which would render it unsafe.

2. The designer of structure shall –

- a. before the contract is put out to tender, make available to the client all relevant information about the design of the relevant structure that may affect the pricing of the construction work;
- b. inform the contractor in writing of any known or anticipated dangers or hazards relating to the construction work, and make available all relevant information required for the safe execution of the work upon being designed or when the design is subsequently altered;
- c. subject to the provisions of paragraph (a) and (b) ensure that the following information is included in a report and made available to the contractor –
 - (i) a geo-science technical report where appropriate;
 - (ii) the loading the structure is designed to withstand; and
 - (iii) the methods and sequence of construction process;
- d. not include anything in the design of the structure necessitating the use of dangerous procedures or materials hazardous to the health and safety of persons, which could be avoided by modifying the design or by substituting materials;
- e. take into account the hazards relating to any subsequent maintenance of the relevant structure and should make provision in the design for that work to be performed to minimise the risk;
- f. carry out sufficient inspections at appropriate times of the construction work involving the design of the relevant structure in order to ensure compliance with the design and a record of those inspections is to be kept on site;

-
- g. stop any contractor from executing any construction work which is not in accordance with the relevant design;
 - h. conduct a final inspection of the completed structure prior to its commissioning to render it safe for commissioning and issue a completion certificate to the contractor; and
 - i. ensure that during commissioning, cognisance is taken of ergonomic design principles in order to minimise ergonomic related hazards in all phases of the life cycle of the structure.
- 3. A contractor shall ensure that all drawings pertaining to the design of the relevant structure are kept on site and are available on request by an inspector, contractors, client, client's agent or employee.
 - 4. Any owner of a structure shall ensure that inspections of that structure upon completion are carried out periodically by competent persons in order to render the structure safe for continued use: Provided that the inspections are carried out at least once every six months for the first two years and thereafter yearly and records of such inspections are kept and made available to an inspector upon request.
 - 5. Any owner of a structure shall ensure that the structure upon completion is maintained in such manner that the structure remains safe for continued use and such maintenance records shall be kept and made available to an inspector upon request.

PHS 16 FORMWORK AND SUPPORT WORK – REGULATION 10

A contractor shall ensure that –

- a. all formwork and support work operations are carried out under the supervision of a competent person who has been appointed in writing for that purpose;
- b. all formwork and support work structures are adequately designed, erected, supported, braced and maintained so that they will be capable of supporting all anticipated vertical and lateral loads that may be applied to them and also that no loads are imposed onto the structure that the structure is not designed to withstand;
- c. the designs of formwork and support work structures are done with close reference to the structural design drawing and where any uncertainty exists, the structural designer should be consulted;

- d. all drawings pertaining to the design of formwork or support work structures are kept on the on the site and are available on request by an inspector, contractor, client, client's agent or employee;
- e. all equipment used in the formwork or support work structure are carefully examined and checked for suitability by a competent person, before being used;
- f. all formwork and support work structures are inspected by a competent person immediately before, during and after the placement of concrete or any other imposed load and thereafter on a daily basis until the formwork and support work structure has been removed and the results have been recorded in a register and made available on site;
- g. if, after erection, any formwork and support work structure is found to be damaged or weakened to such a degree that its integrity is affected, it shall be safely removed or reinforced immediately;
- h. adequate precautionary measures are taken in order to -
 - (i) secure any deck panels against displacement; and
 - (ii) prevent any person from slipping on support work or formwork due to the application of formwork or support work release agents;
- i. as far as is reasonably practicable, the health of any person is not affected through the use of solvents or oils or any other similar substances;
- j. upon casting concrete, the support work or formwork structure should be left in place until the concrete has acquired sufficient strength to support safely, not only its own weight, but also any imposed loads and not removed until authorisation has been given by the competent person contemplated in paragraph (a);
- k. provision is made for safe access by means of secured ladders or staircases for all work to be carried out above the foundation bearing level;
- l. all employees required to erect, move or dismantle formwork and support work structures are provided with adequate training and instruction to perform these operations safely; and
- m. the foundation conditions are suitable to withstand the weight caused by the formwork and support work structure and any imposed loads such that the formwork and support work structure is stable.

PHS 17 SUSPENDED PLATFORMS – REGULATION 15

1. A contractor shall ensure that all suspended platform work operations are carried out under the supervision of a competent person who has been appointed in writing, and that all suspended platform erectors, operators and inspectors are competent to carry out their work.
2. No contractor shall use or permit the use of a suspended platform, unless –
 - a. the design, stability and construction thereof comply with the safety standards incorporated for this purpose into these Regulations under section 44 of the Act;
 - b. he or she is in possession of a certificate of system design issued by a professional engineer, certificated engineer or a professional technologist for the use of the suspended platform system; and
 - c. he or she is, prior to the commencement of the work, in possession of an operational compliance plan developed by a competent person based on the certificate of system design contemplated in paragraph (b) and applicable to the environment in which the system is being used, this must include proof of the –
 - (i) competent person who has been appointed for supervision;
 - (ii) competency of erectors, operators and inspectors;
 - (iii) operational design calculations which should comply with the requirements of the system design certificate;
 - (iv) performance test results;
 - (v) sketches indicating the completed system with the operational loading capacity of the platform;
 - (vi) procedures for and records of inspections having been carried out; and
 - (vii) procedures for and records of maintenance work having been carried out;

Provided that sub regulation (2) shall only become applicable six months from the date of promulgation of these regulations.

3. A contractor making use of a suspended platform system shall forward a copy of the certificate of system design issued by a professional engineer, certificated engineer or professional technologist including a copy of the design calculations, sketches and test results, to the provincial director before commencement of the use of the system and must further indicate the intended type of work the system would be used for.
4. A contractor need not re-submit a copy of the certificate of system design contemplated in sub regulation (3) for every new project: Provided that the environment in which the system is being used does not change to such an extent

that the system design certificate is no longer applicable and, should uncertainty exist of the applicability of the system design certificate, the decision of a professional engineer, certificated engineer or professional technologist shall be decisive.

5. A contractor shall ensure that the outriggers of each suspended platform –
 - a. are constructed of steel or any other material of similar strength and have a safety factor of at least four in relation to the load it is to carry; and
 - b. have suspension points provided with stop devices or other effective devices at the outer ends to prevent the displacement of ropes.
6. A contractor shall ensure that -
 - a. the parts of the building or structure on which the outriggers are supported, are checked by means of calculations to ensure that the required safety factor is adhered to without risk of damage to the building or structure;
 - b. the suspension wire rope and the safety wire rope are separately connected to the outrigger;
 - c. each person on a suspended platform is provided with and wears a safety harness as a fall protection device which must at all times, be attached to the suspended platform or to the anchorage points on the structure whilst on the suspended platform;
 - d. the hand or power-driven machinery to be used for the lifting or lowering of the working platform of a suspended platform is constructed and maintained in such a manner that an uncontrolled movement of the working platform cannot occur;
 - e. the machinery referred to in paragraph (d) is so situated that it is easily accessible for inspection;
 - f. the rope connections to the outriggers are vertically above the connections to the working platform; and
 - g. where the working platform is suspended by two ropes only, the connections of the ropes to the working platform are of such height above the level of the working platform as to ensure the stability of the working platform.
7. A contractor shall ensure that the suspended platform -

- a. is suspended as near as possible to the structure to which work is being done and, except when light work is being done, is secured at every working position to prevent horizontal movement between the suspended platform and the structure;
 - b. is fitted with anchorage points to which workers shall attach the lanyard of the safety harness worn and used by the worker and such anchorage connections shall have sufficient strength to withstand any potential load applied to it; and
 - c. is fitted with a conspicuous notice easily understandable by all workers working with the suspended platform, showing the maximum mass load which the suspended platform can carry.
8. A contractor shall cause -
 - a. the whole installation and all working parts of the suspended platform to be thoroughly examined in accordance with the manufacturer's specifications;
 - b. the whole installation to be subjected to a performance test as determined by the standard to which the suspended platform was manufactured;
 - c. the performance test contemplated in paragraph (b) to be done by a competent person appointed in writing with the knowledge and experience of erection and maintenance of suspended platforms or similar machinery and who shall determine the serviceability of the structures, ropes, machinery and safety devices before they are used, every time suspended platforms are erected;
 - d. the performance test contemplated in paragraph (b), of the whole installation of the suspended platform to be subjected to a load equal to that prescribed by the manufacturer or, in the absence of such load, to a load of 110 percent of the rated mass load, at intervals not exceeding 12 months and in such a manner that every part of the installation is stressed accordingly.
9. Notwithstanding the provisions of sub regulation (8), the contractor shall cause every hoisting rope, hook or other load-attaching device which forms part of the suspended platform to be thoroughly examined in accordance with the manufacturer's specification by the competent person contemplated in sub regulation (8) before they are used following every time they are assembled, and, in cases of continuous use, at intervals not exceeding three months.

-
10. A contractor shall ensure that the suspended platform supervisor appointed in terms of the provisions of sub regulation (1), or the suspended platform inspector mentioned in sub regulation (1), carries out a daily inspection of all the equipment prior to use, including establishing whether -
- a. all connection bolts are secure;
 - b. all safety devices are functioning;
 - c. all safety devices are not tampered with or vandalised;
 - d. the maximum mass load of the platform is not exceeded;
 - e. the occupants in the suspended platform are using safety harnesses which have been properly attached;
 - f. there are no visible signs of damage to the equipment; and
 - g. all reported operating problems have been attended to.
11. A contractor shall ensure that all inspection and performance tests records are kept on the construction site at all times and made available to an inspector, client, client's agent or employee upon request.
12. A contractor shall ensure that all employees required to work or to be supported on suspended platform are -
- a. physically and psychological fit to work safely in such an environment by being in possession of a medical certificate of fitness;
 - b. competent in conducting work related to suspended platforms safely;
 - c. trained or had received training which include at least -
 - (i) how to access and egress the suspended platform safely;
 - (ii) how to correctly operate the controls and safety devices of the equipment;
 - (iii) information on the dangers related to the misuse of safety devices; and
 - (iv) information on the procedures to be followed in the case of -
 - (aa) an emergency;
 - (bb) the malfunctioning of equipment;

- (cc) the discovery of a suspected defect in the equipment; and
- (v) instructions on the proper use of safety harnesses.

13. Where the outrigger is to be moved, the contractor shall ensure that only persons trained and competent to affect such move, perform this task and that an inspection be carried out and the results thereof be recorded by the competent person prior to re-use of the suspended platform.
14. A contractor shall ensure that the suspended platform is properly isolated after use at the end of each working day such that no part of the suspended platform will present a danger to any person thereafter.

PHS 18 CRANES – REGULATION 20

Notwithstanding the provisions of the Driven Machinery Regulations promulgated by Government Notice No. R.533 of 16 March 1990, as amended, a contractor shall ensure that where tower cranes are used -

- a. account is taken of the effects of wind forces on the structure;
- b. account is taken of the bearing capacity of the ground on which the tower crane is to stand;
- c. the bases for the tower cranes and tracks for rail-mounted tower cranes are firm and level;
- d. the tower cranes are erected at a safe distance from excavations;
- e. there is sufficient clear space available for erection, operation and dismantling;
- f. the tower crane operators are competent to carry out the work safely; and
- g. the tower crane operators are physically and psychologically fit to work in such an environment by being in possession of a medical certificate of fitness.

16 BARRICADING AND DEMARCATION

The construction site shall be barricaded completely to prevent pedestrians and vehicles to enter the construction area.

Protection around the site must be in the form of a physical barrier and appropriate signage, to prevent public from entering the area.

It is advised to use 1.2m high Dayglo Mesh (barrier netting) to prevent pedestrians on pavements to enter the construction area.

17 LADDERS

You are only to use ladders that are undamaged and are of sound construction.

Ladders must be placed on a register and inspected on a monthly basis by an appointed person. Ladders are to be secured during use. If it is necessary to use a ladder before it can be secured, a second person must hold it steady at all times. Place the ladder's feet on a level base. (wooden blocks or bricks are not to be used).

Ladders are not to be used as scaffolds or work platforms.

When used as access to trenches and work areas, the ladder must extend one meter above the step off point and be placed at an angle where the base of the ladder is one quarter of the ladder height away from the base of the structure and must be fitted with non-skid devices.

Ladders must not be used nearer than 3 metres to any exposed electrical power source and never in substations or on electrical installation work.

Ladders are not to be used in a horizontal position.

Maintain 3-point contact by keeping two hands and one foot or two feet and one hand on the ladder at all times.

Do not carry objects in your hands while on a ladder.

Ladders must be fitted with non-skid devices at the bottom ends and hooks or similar devices at the upper ends.

Ladders with damaged stiles, or damaged or missing runs should never be used.

Ladders must never be fastened together to increase the reach.

Wooden ladders must never be painted.

18 CONCRETE MIXERS – REGULATION 18

The Contractor shall ensure that all concrete mixers are operated and supervised by a competent person who has been appointed in writing.

The Contractor shall ensure that all devices to start and stop the concrete mixers are provided and that these devices are

1. placed in an easily accessible position; and
2. constructed in such a manner to prevent accidental starting

All dangerous moving parts of a mixer must be placed beyond the reach of persons by means of covers.

No person shall be permitted to remove or modify any guard or safety component unless authorized to do so by the appointed person

A Contractor shall ensure that all persons authorized to operate the concrete mixers are fully:

1. aware of all dangers involved in the operation thereof
2. conversant with the precautionary measures to be taken in the interest of health and safety

No person supervising or operating a concrete mixer shall authorize any other person to operate the plant, unless such a person is competent to operate such machinery.

19 SCAFFOLDING – REGULATION 14

All scaffolding must be in compliance to SABS 085.

A competent person shall be appointed in writing to supervise the erection of all scaffolding operations. The Scaffolding erector shall have the required accredited qualifications for scaffold erecting.

A competent scaffold inspector shall be appointed in writing to inspect the erected scaffolds and shall not be the same person as the erector.

An Inspection Register on scaffolding shall be kept in the Health and Safety File.

A copy of SABS 085 as amended shall be available on site and kept in the Health and Safety File.

20 HOUSE KEEPING AND CONSTRUCTION SITES – REGULATION 25

The Contractor shall at all time carry out the Works in a manner to avoid the risk of bodily harm to persons or risk of damage to any property. The Contractor shall take all precautions, which are necessary and adequate to eliminate any conditions, which contribute to the risk of injury

to persons or damage to property. The Contractor shall continuously inspect all work, materials and equipment to discover and determine any such conditions and shall be solely responsible for the discovery, determination and elimination of such conditions.

During the period of this Contract, the Contractor shall be responsible for the safe storage of all materials and equipment required for execution of the Contract, and for disposal of all non-usable waste material in an orderly manner.

All materials, whether stored on the construction site or within the Contractor's designated area, shall be stored neatly and safely to prevent possible injury to any personnel. The material shall be stored to facilitate safe access to, and removal of the material from the storage area.

Any flammable material, such as paint, diesel fuel and oil, shall be stored in lockable non-combustible structures, which shall be clearly marked to indicate the hazardous nature of the materials stored within. The flammable materials stores shall be located in safe areas away from hazardous surroundings and adequate and suitable fire-fighting equipment shall be provided within easy reach of the materials stores.

Loose material need for use shall not accumulate so as to obstruct means of access to and egress from the workplace.

Scrap and waste shall not be allowed on site and must be removed daily.

The construction sites adjacent to build up area or public way shall be effectively fenced and controlled with access points.

21 STACKING AND STORAGE ON CONSTRUCTION SITES – REGULATION 26

A Competent person shall be appointed in writing with the duty of supervising all stacking and storage of material on site. Adequate storage areas shall be provided which includes demarcated areas. All storage areas shall be kept neat and under control. Registers and checklist on housekeeping shall be kept on site

22 FALL PROTECTION – REGULATION 8

A contractor shall cause-

- a) the designation of a competent person, responsible for the preparation of a fall protection plan;
- b) the fall protection plan contemplated in paragraph (a) to be implemented, amended where and when necessary and maintained as required;

- c) steps to be taken in order to ensure the continued adherence to the fall protection plan.

The fall protection plan contemplated in sub regulation (1), shall include-

- a) a risk assessment of all work carried out from an elevated position which shall include the procedures and methods used to address all the risks identified per location;
- b) the processes for evaluation of the employees' physical and psychological fitness necessary to work at elevated heights.

- **Safety Harness:**

The wearing of an approved type of safety harness fitted with a shock absorber and correctly secured to any approved anchorage, is compulsory for personnel working at heights.

Safety harnesses must be worn where a leaning bar cannot be installed, where handrails are not available, in instances where there is a risk of injury due to falling, and generally whenever work is undertaken at a height of more than "a person's height".

Where roof work is undertaken, harnesses must be attached to a lifeline or other substantial support.

The single support waist type safety belts should not be used; therefore a full parachute type harness of an approved type is required.

It is the contractor's responsibility to train his employees on the correct use of harnesses.

Safety belts may only be used as a fall restraint and not as a fall protection device.

- **Identify Risks:**

Lanyards must be used to attach tools and equipment used in elevated positions.

Scaffolding where possible must be provided.

On windy/rain days, special precautions are to be taken especially when working with loose roof sheets.

Walking on asbestos roofs is prohibited unless supporting ladders or crawl boards are placed thereupon.

Consult your supervisor in that area if in any doubt.

32 REGISTERS REQUIRED ON SITE

PPE - Personal Protective Clothing and Equipment issued

MACHINERY

- Daily Checklist - Compaction Machinery – Bowmag
- Daily Checklist - Compaction Machinery – Plate Compactor
- Daily Construction Vehicle Pre-Ignition Checklist – Tractors
- Daily Checklist - Compaction Machinery – Tipper
- Daily Checklist - Compaction Machinery – Excavator
- Daily Construction Vehicle Pre-Ignition Checklist – TLB
- Daily Checklist - Compaction Machinery – Material Handler
- Daily Checklist - Compaction Machinery – Water Lorry
- Daily Checklist - Compaction Machinery – Bowmag
- Daily Checklist - Compaction Machinery – Mini Excavator
- Daily Checklist - Compaction Machinery – Bobcat
- Daily Checklist - Compaction Machinery – Concrete Mixer
- Operators on Construction Vehicles and Mobile Plant
- Training and Fitness Register

EQUIPMENT

- Ladder Inspection Register
- Scaffold Inspection Register
- Safety Harness Inspection Register
- Gas Cutting and Welding Inspection Register

TOOLS

- Monthly Checklist on Hand Tools
- Monthly Checklist on Portable Electrical Equipment

HOUSE KEEPING

- Stacking Inspection Register
- Excavations Inspection Register
- Monthly Environmental Checklist and Deviation
- Monthly Hygiene Facility Inspection Register – Mobile Ablutions and Eating areas

INCIDENTS

- Incident Register (Injury/ occupational disease record book Recording and investigation of incidents)
- Motor Vehicle Accident Report

FIRE

- Fire Extinguishing Equipment Register
- Register of Trained Employees in Fire Fighting
- Fire Awareness Attendance Training Register

FIRST AID

- First Aid Box and Equipment Checklist
- Register of Trained Employees in Basic First Aid
- First Aid Awareness Attendance Training Register

TRAINING

- Induction Training Attendance Registers
- Risk Assessment Communication Registers

PERMITS

- Lock-out Request Forms (Water and Electricity)
- Lock-out Permits (Water and Electricity)

INSPECTIONS

- SHE Coordinator Inspection Register – Monthly checklist and deviations
- Minutes of Safety Committee Monthly meetings

33 SAFE WORK PROCEDURES REQUIRED IN HEALTH AND SAFETY FILE

- Stacking of material
- Working with angle grinders
- Excavating of trenches
- Loading and transport of material
- Working with cement and concrete mixers
- Driving company vehicles
- Approaching Construction Vehicles
- Maintaining Scaffolding
- Form work repair guide
- Roof work
- Correct use of Fire Extinguishers
- Engaging and working with Contractors
- Heat Stress
- Electrical Safety
- Maintenance of Ladders
- Silica

- Trenches and open excavations

36 EQUIPMENT ON SITE

First Aid Kit (basic)
Fire Extinguishers

37 PERSONAL PROTECTIVE CLOTHING

The Contractor shall provide the necessary personal protective clothing for its employees in hazardous areas, appropriate to the nature of the hazard.

37.1 Hard Hats

All employees of the Contractor shall wear hard hats in areas where appropriate hazard notices are displayed. The Engineer shall have the right to ban certain colours if they are similar to the Employer's identifying colours. Hard hats shall not be painted or otherwise defaced.

37.2 Eye Protection

Suitable eye protection shall be worn in areas where appropriate hazard notices are displayed, or when grinding, chipping, breaking, drilling, arc-welding, cutting with oxy-acetylene equipment or similar activities are taking place.

37.3 Hearing Protection

Suitable hearing protection shall be worn in areas where appropriate hazard notices are displayed.

37.4 Foot Wear

All employees of the Contractor shall wear undamaged, laced-up safety boots or safety shoes, suitable for the intended purpose, in prescribed areas where appropriate hazard notices are displayed.

37.5 Gloves

All employees of the Contractor shall wear suitable protective gloves in areas where appropriate hazard notices are displayed, or when handling hot or hazardous materials or chemicals.

37.6 Clothing

All employees of the Contractor shall wear suitable protective clothing when working in proximity of machinery, power tools, hazardous materials or chemicals.

Proposed Personal Protective Equipment required on this project:

	TYPE	WHEN TO WEAR
1.	Hard Hats	Always
2.	400mm Shoulder Length PVC Gloves	Working with cement
3.	Plastic Trousers	Working with cement
4.	Safety Goggles	Grinding, Cutting Cement
5.	Gumboots	Working in water
6.	Welding helmet	Welding
7.	Gas welding safety goggles	Gas Welding
8.	Safety shoes	Offloading and positioning of materials
9.	Dust Masks	Grinding
10.	Ear Muff	Grinding
11.	Leather apron	Welding/ gas welding

AGREEMENT IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, NO. 85 OF 1993

The Employer and the Contractor hereby agree, in terms of the Provisions of Sections 37(2), 9 and 8(2) of the Occupational Health and Safety, Act No. 85 of 1993, hereinafter referred to as 'the Act', that the Contractor as an employer in its own right and in its capacity as Contractor for the execution of the works, shall have certain obligations and that the following arrangements shall apply between them to ensure compliance by the Contractor with the provisions of the Act, namely:-

- i) The Contractor undertakes to acquaint the appropriate officials and the employees of the Contractor with all relevant provisions of the Act, and the regulations promulgated in terms of the Act, and
- ii) The Contractor undertakes that all relevant duties, obligations and prohibitions imposed in terms of the Act and regulations will be fully complied with, and
- iii) The Contractor hereby accepts sole liability for such due compliance with the relevant duties, obligations and prohibitions imposed by the Act and regulations and expressly absolves the Employer and the Employer's Consulting Engineers from being obliged to comply with any of the aforesaid duties, obligations and prohibitions.
- iv) 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 on behalf of the Employer, and shall, on written demand, provide full details in writing of such investigation, complaint or criminal charge.

SIGNED at on this day of

..... 20.....

For and on behalf of the **Contractor**:

Print Name: _____

AS WITNESSES:

1. _____

2. _____

Print Name: _____

Print Name: _____

For and on behalf of the **Employer**:

Print Name: _____

AS WITNESSES:

1. _____

2. _____

Print Name: _____

Print Name: _____

MANDATORY NOTIFICATION OF CONSTRUCTION WORK
IN TERMS OF REGULATION 3 OF THE CONSTRUCTION REGULATIONS (2014)
OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, NO. 85 OF 1993

This document is to be forwarded by the Contractor to the Office of the Department of Labour **prior to commencement** of the Works. The Contractor shall ensure that all Sub-Contractors accountable to him forward similar documents to the mentioned Authority **prior to commencement with the Works**.

A. Particulars of Contractor

Name:

Postal Address :

Compensation Fund Registration No.

B. Particulars of Contractor's MD/ CEO/Managing Member of cc

Name:

ID No.

Postal Address:

Tel No. Cell phone No.

C. Particulars of Contractor's designated Construction Safety Officer appointed in terms of Clause 6(1) as the Construction Supervisor, with the duty of supervising health and safety at the Works:

Name:

ID No.

Postal Address:

Tel No. Cell phone No.

D. Particulars of Contractor's sub-ordinate supervisors at the Works, appointed in terms of Clause 6 (2):

Name	ID No.	Postal Address	Tel No.	Cell phone no.

E. Physical address of the Works (Construction Site)

.....
.....

Co-ordinates (if available) Latitude (S)

Longitude (E)

F. Nature of the construction work:

.....
.....

G. Expected commencement date:

H. Expected completion date:

I. Estimated maximum number of persons on the construction site.

J. Planned number of Sub-Contractors on the construction site accountable to Principal Contractor:

.....

Name(s) of Sub-Contractors.

.....

.....

.....

K. Particulars of Employer (client)

Name:

Postal Address:

.....

Name of Employer's designated Representative / Agent.

.....

Tel No. Cell phone No.

L. Particulars of Design Engineer

Name:

Postal Address:

Tel No. Cell phone No.

Signed at on this day of 20.....