GAMAGARA LOCAL MUNICIPALITY

CONTRACT NUMBER:GM2022/48

GROUNDWATER SUPPLY IN OLIFANTSHOEK: CONSTRUCTION OF BULK LINK LINE FROM 4 BOREHOLES TO 7ML RESEVIOR: PHASE 3

Employer's Agent	Employer
CONSULTING ENGINEERS METSWEDING CONSULTING ENGINEERS 28 Dick King Street Vanderbijlpark 1911 Mr. Thato Mashinini	**DEPT OF PUBLIC WORKS AND BASIC SERVICES** GAMAGARA LOCAL MUNICIPALITY Cnr Frikkie Meyer & Hendrik Van Eck Roads Civic Centre Kathu Mr. Kagiso Ositang

CONTRACTOR : .....

TEL NUMBER : .....

FAX NUMBER : .....

CSD NUMBER _____

FOR: **GROUNDWATER SUPPLY IN OLIFANTSHOEK: CONSTRUCTION OF BULK LINK LINE FROM 4 BOREHOLES TO 7ML RESEVIOR: PHASE 3**

SUMMARY FOR CONTTRACT PURPOSES

NAME OF ENTITY: ……

.....

PHYSICAL STREET ADDRESS:	POSTAL ADDRESS:

TELEPHONE NUMBER : .....

FAX NUMBER : .....

E-mail ADDRESS : .....

CONSTRUCTION PERIOD……

CONTRACT PRICE

SECTION 1 : R .....
(Amount brought forward from the Form of Offer and Acceptance) *

Signed by authorised representative of the Bidding Entity: .....

DATE: ……

- Should any discrepancy occur between this figure and that stated in the Form of Offer and Acceptance, the latter shall take precedence and apply.

NOTICE TO BIDDERS INCLUDED IN ALL BID DOCUMENTS

VERY IMPORTANT NOTICE ON DISQUALIFICATIONS:

A bid not complying with the peremptory requirements stated hereunder will be regarded as not being an “Acceptable bid”, and as such will be rejected.

The municipality shall adjudicate and award Bids in accordance with the Revised Preferential Procurement Policy Framework Act 5/2000 and revised Preferential Procurement Regulation, as published on the 20 January 2017, based on 100 points functionality and on a 80/20 points system, where 80 points are for the price and 20 points for B-BBEE according to the said legislation. Bidders are required to submit valid B-BBEE status level verification certificates.

1. Proof of registration on the National Treasury Supply database (CSD) should be attached with a valid reference number. A copy of a tax compliance status pin, printed from the South African Revenue Services (SARS) website, must accompany the bid documents. The onus is on the bidder to ensure that their tax matters with SARS are in orders (in the case of a joint venture, all the partners in the joint venture must submit their tax compliance status pins) has to be submitted with the bid document on closing date of the bid.
2. If any pages have been removed from the bid document, and have therefore not been submitted, or a copy of the original bid document has not been submitted.
3. Failure to complete the schedule of quantities as required, i.e. only lump sums provided.
4. Scratching out, writing over or painting out rates, without initialling next to the amended rates or information, affecting the evaluation of the bid.
5. The use of correction fluid (i.e. tippex) or any erasable ink, e.g. pencil.
6. Non-attendance of mandatory/compulsory:
    - Site inspections or;
    - Information/Clarification meetings
7. The Bid has not been properly signed by a person having the authority to do so. **(Refer to Declaration)**
8. Particulars required in respect of the bid have not been completed, except if information required on Preferential Schedule in respect of HDI Equity and Equity Ownership Forms, is not completed, the bid will not be disqualified but no preference points will be awarded.
9. **Very important notice, Bidders** must note that only information filled in at the spaces provided in the bid document will be considered for evaluation purposes unless additional space is required and then only if the location of the additional information in the attachments is properly referred to by page number and section heading. Information supplied anywhere else will be disregarded which **may** lead to the rejection of the bid.

The attachment or inclusion of information not specifically asked for is not desirable and lead to delays in the awarding of bids.

10. The bidder attempts to influence, or has in fact influenced the evaluation and/or awarding of the contract
11. The bid has been submitted either in the wrong bid box or after the relevant closing date and time
12. If any municipal rates and taxes or municipal service charges owed by the bidder or any of its directors/members to the municipality, or to any other municipality or municipal entity, are in arrears for more than three months. (Copies of all relevant municipal accounts to be attached to this bid)
13. If any bidder who during the last five years has failed to perform satisfactorily on a previous contract with the municipality, municipal entity or any other organ of state after written notice was given to that bidder that performance was unsatisfactory.
14. The accounting officer must ensure that irrespective of the procurement process followed, no award may be given to a person –
    (a) who is in the service of the state, or;
    (b) if that person is not a natural person, of which any director, manager, principal shareholder or stakeholder, is a person in the service of the state; or;
    (c) who is an advisor or consultant contracted with the municipality in respect of contract that would cause a conflict of interest.
15. **The bidder will be rejected if they are not registered in the required CIDB contractor grading designation 4CEPE/5CE or higher as required in the bid documentation**
16. Bid offers will be rejected if the bidder or any of his directors is listed on the Register of Bid Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector.
17. Bid offers will be rejected if the bidder has abused the GAMAGARA LOCAL MUNICIPALITY's Supply Chain Management System and action will be taken in terms of the GAMAGARA LOCAL MUNICIPALITY SCM Policy (As attached).
18. Form of offer not completed and signed by the authorised signatory.
19. Non submission of financial statements if required **(SEE BID DATA OR PRICING SCHEDULE)**

NOTE:

IN THIS DOCUMENT AND OTHER DOCUMENTS REFERRED TO BUT NOT ATTACHED, THE FOLLOWING WORDS ARE SYNONYMOUS WITH EACH OTHER.

1. CLIENT, EMPLOYER, GAMAGARA LOCAL MUNICIPALITY
2. BID, TENDER AND VARIATIONS THEREOFF
3. JOINT VENTURE / CONSORTIUM

GAMAGARA LOCAL MUNICIPALITY

DEPARTMENT NAME: **PUBLIC WORKS AND BASIC SERVICES**

TENDER NO: **GM2022/48**

FOR: **GROUNDWATER SUPPLY IN OLIFANTSHOEK: CONSTRUCTION OF BULK LINK LINE FROM 4 BOREHOLES TO 7ML RESEVIOR: PHASE 3**

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GAMAGARA LOCAL MUNICIPALITY

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PART T1 BIDDING PROCEDURES PAGE(S)

TENDER No GM2022/48
FOR

GROUNDWATER SUPPLY IN OLIFANTSHOEK: CONSTRUCTION OF BULK LINK LINE FROM 4 BOREHOLES TO 7ML RESEVIOR: PHASE 3

T1.1 TENDER NOTICE AND INVITATION TO TENDER

Gamagara Local Municipality hereby invites tenders for the **GROUNDWATER SUPPLY IN OLIFANTSHOEK: CONSTRUCTION OF BULK LINK LINE FROM 4 BOREHOLES TO 7ML RESEVIOR: PHASE 3.** It is estimated that prospective tenderers should have a CIDB contractor grading of **4CEPE/5CE** or higher. Only tenderers who conform to the criteria stated in the Tender Data and Tender conditions are eligible to submit tenders ***Tender documents will be available on eTender portal and Municipal website. Tender documents enquiry can be directed to Mrs. Josephine Nampa at 053 7236000.*** *No tender documents will be made available during the compulsory clarification meeting.*

A compulsory clarification meeting with representatives from the Employer will take place at the municipal Town Hall of Gamagara Municipality in Kathu on **Wednesday, 16 November 2022 starting at 10:00.** Only tenderers who attend the clarification meetings shall be eligible to submit tenders.

This tender will close on Thursday, 08 December 2022 at 10:00. Completed tender documents, sealed in an envelope and clearly marked with **"GM2022/48**: **"GROUNDWATER SUPPLY IN OLIFANTSHOEK: CONSTRUCTION OF BULK LINK LINE FROM 4 BOREHOLES TO 7ML RESEVIOR: PHASE 3."** must be placed in the tender box in the foyer of Gamagara Local Municipality, corner Hendrik van Eck & Frikkie Meyer Road, Kathu, and **No** Tenders will be accepted after the closing time or per facsimile or per e-mail.

Gamagara Local Municipality does not bind itself to accept the lowest or any tender and reserves the right to accept the whole or part of a tender. Furthermore, Gamagara Local Municipality reserves the right to reduce or increase the scope of works in accordance with available funding. All tenders will remain valid for a period of 90 days after the time and date of opening. This tender will be evaluated according to the **80/20**-point system and the PPPFA.

Technical enquiries relating to this tender should be addressed to Mr. Goitsemodimo Olifant at Tel: +27 53 723 6000
e-mail: olifantg@gamagara.co.za

Mr. KP Leserwane
Municipal Manager

T1.2 BID DATA

The conditions of bid are the **Standard Conditions of Tender** as contained in Annex F of the CIDB Standard for Uniformity in Construction Procurement, as printed in the **Government Gazette 38960 of 10 July 2015.** A copy is attached hereto, immediately after page 15.

The under mentioned items of data and deviations will have precedence over the Standard Conditions of bid conditions in Annex F.

The **Standard Conditions of Bid** for Procurements make several references to the bid data for details that apply specifically to this bid. The bid data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the standard conditions of bid.

Clause number	Data
F.1.1 ACTIONS	The Employer is: The Municipal Manager GAMAGARA LOCAL MUNICIPALITY Cnr Hendrik van Eck &Frikkie Meyer Roads Kathu 8446
F.1.2 TENDER DOCUMENTS	The bid documents issued by the Employer comprise: **THE BID** **Part T1 Bidding procedures** Part T1.1 Bid notice and invitation to bid Part T1.2 Bid data **Part T2 Returnable documents** Part T2.1 List of returnable documents Part T2.2 Returnable schedules **THE CONTRACT** **Part C1 Agreements and contract data** C1.1 Form of offer and acceptance C1.2 Contract data C1.3 Form of Guarantee C1.4 Agreement in terms of Occupational Health and Safety Act, 1993 **Part C2 Pricing Data** C2.1 Pricing Instructions C2.2 Bill of Quantity **Part C3 Scope of Works** C3.1 Scope of Works C3.2 Quality Specifications and drawings **Part C4 Site Information** C4.1 Site Information
F.1.4	The Employer's agent is: METSWEDING CONSULTING ENGINEERS

Clause number	Data
COMMUNICATION AND EMPLOYER'S AGENT	Name: Mr. Thato Mashinini Address: 174 Louis Trichardt Boulevard Vanderbijlpark 1911 Tel: (081) 256 1159 and (071) 893 4382 E-mail: admin@metswedingce.co.za
F.2.1 ELIGIBILITY	Only those bidders who have in their employment, management and supervisory staff satisfying the requirements of the scope of work for labour intensive competencies for supervisory and management staff are eligible to submit bids. Only those bidders who are registered with the CIDB in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered as **4CEPE/5CE** class of construction work. Joint Ventures are eligible to submit bids provided that: (1) each member of the joint venture is registered with the CIDB, (2) the lead partner has a contractor grading designation in the **4CEPE/5CE** class of construction work; and (3) the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations (according to the CIDB website Joint Venture Grading Designation Calculator) is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a **4CEPE/5CE** class of construction work.
F.2.7 CLARIFICATION MEETING	The arrangements for a compulsory clarification meeting are: Location: **Cnr Hendrik van Eck &Frikkie Meyer Roads, Kathu** Date: **16 November 2022** **Starting time: 10h00**
F.2.13.1 SUBMITTING A TENDER OFFER	Bidders may offer to provide any of the parts, or combinations thereof, of the works, services or supply identified in the contract data.
F.2.13.3 SUBMITTING A TENDER OFFER	The ***whole original*** bid document, ***as issued by the GAMAGARA LOCAL MUNICIPALITY***, shall be submitted***. No copies will be accepted.*** Bids may only be submitted on the Bid documentation issued by the GAMAGARA LOCAL MUNICIPALITY.
F.2.13.5 SUBMITTING A TENDER OFFER	The Employer's address for delivery of bid offers and identification details to be shown on each bid offer package are: Physical address: The Municipal Manager GAMAGARA LOCAL MUNICIPALITY Cnr Hendrik van Eck &Frikkie Meyer Roads Kathu 8446 Identification details: Tender Number: **GM2022/48** **GROUNDWATER SUPPLY IN OLIFANTSHOEK: CONSTRUCTION OF BULK LINK LINE FROM 4 BOREHOLES TO 7ML RESEVIOR: PHASE 3**
F.2.15 CLOSING TIME	The closing time for submission of bid offers is: **08 December 2022 at 10:00** Telephonic, telegraphic, telex, facsimile or e-mailed bid offers will **not** be accepted.

Clause number	Data
F.2.16 TENDER OFFER VALIDITY	The bid offer validity period is **90 days**
F.2.18 PROVIDE OTHER MATERIAL	The bidder shall, when requested by the Employer to do so, submit the names of all management and supervisory staff that will be employed to supervise the labour-intensive portion of the works together with satisfactory evidence that such staff members satisfy the eligibility requirements.
F.2.19 INSPECTIONS, TESTS AND ANALYSIS	Access shall be provided for inspections, tests and analysis as may be required by the employer.
F.2.23 CERTIFICATES	The bidder is required to ***submit with his bid.*** **(1) Proof of registration on the National Treasury Supply database (CSD) and a copy of a Tax Compliances Status Pin, printed from the South African Revenue Services; certifying that the bidder's taxes are in order or that suitable arrangements have been made with the SARS** **(2) Copies of all relative municipal accounts of the bidder (or in the case of a joint venture, of all the partners in the joint venture) must be submitted with the bid document.**
F 2.24	The bidder is required to complete his/her bid in full using black ink. The bidder is required to initial all pages of the bid document. Failure to complete the form of offer in full is an automatic disqualification. Other contraventions also constitute an incomplete bid and may result in the bid being disqualification.
F.3.1.0	The bidder must attach the proof of updated municipal rates and taxes, and certified copies of BBBEE Certificate (in the case of a Joint Venture, a combined BBBEE certificate must be submitted), or valid affidavit?. Current municipal rates for the Entity and all Directors of the entity not older than 90 days and not more than 3 months in arrears (submit proof of lease agreement where premises are rented and latest invoice).
F.3.4 OPENING OF BID SUBMISSIONS	The time and location for opening of the bid offers are: Immediately after the closing time for submission of bid. Location: GAMAGARA LOCAL MUNICIPALITY Cnr Hendrik van Eck & Frikkie Meyer Roads Kathu 8446
F.3.5 TWO-ENVELOPE SYSTEM	A two-envelope procedure will **not** be followed.
F.3.9 3.9.1 ARITMETICAL ERRORS	Replace the contents of the clause with the following: "Check responsive tender offers for arithmetical errors, correcting them in the following manner: a) Where there is a discrepancy between the amounts in figures and in words, the amount in words shall govern. b) If bills of quantities (or schedule of quantities or schedule of rates) apply and there is an error in the line item total resulting from the product of the unit rate and the quantity, the rate shall govern and the line item total shall be corrected.

<table>
<tr><th>Clause number</th><th>Data</th></tr>
<tr><td></td><td>c) Where there is an error in the total of the prices either as a result of corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall be adjusted to reflect the arithmetically correct summation of corrected line item totals.

Consider the rejection of a tender offer if the tenderer does not accept the correction of the arithmetical errors in the manner described above.”</td></tr>
<tr><td>F.3.11.1</td><td>The functionality shall be scored as follows:

For a Contractor to qualify it is a requirement that a Contractor score a minimum of 60 out of a maximum of 100 points for functionality.

Functionality

<u>1. Company Experience</u>

(Certified copies of relevant appointment letters and completion certificates of previous work must be attached otherwise zero points will be allocated)

<table>
<tr><th>Description</th><th>No. of Projects</th><th>Points Allocation
(Max-20)</th></tr>
<tr><td rowspan="4">Similar Projects</td><td>4</td><td>20</td></tr>
<tr><td>3</td><td>15</td></tr>
<tr><td>1-2</td><td>10</td></tr>
<tr><td>0</td><td>0</td></tr>
</table>
<u>2. Management and key staff</u>

(Certified copies of academic certificates with a curriculum vitae must be attached otherwise zero points will be allocated)

<table>
<tr><th>Description</th><th>No. of years</th><th>Points Allocation
(Max-25)</th></tr>
<tr><td rowspan="4">Contracts Manager
(BSc, B-Tech, N-Dip)</td><td>10 or more</td><td>10</td></tr>
<tr><td>5 to 9</td><td>7</td></tr>
<tr><td>1 to 4</td><td>3</td></tr>
<tr><td>0</td><td>0</td></tr>
</table>
</td></tr>
</table>

Clause number	Data			
		Site Agent (N-Dip:Civil Engineering)	10 or more	5
			5 to 9	3
			1 to 4	1
			0	0
		Foreman (N6 Civil Engineering, or experience)	10 or more	5
			5 to 9	4
			3	2
			0	0
		OHS Officer (Professionally Registered Safety Officer with SACPCMP)	10 or more	5
			5 to 9	4
			1 to 4	2
			0	0

3. <u>List of Plant 7 Equipment</u>

(Regulation papers of owned plant (NATIS) License disc or letter from registered plant hiring firm must be attached showing relevant plant applicable or intended to be used on the Project.

Description	Plant	Points Allocation (Max-25)
	Loader/TLB	10
	Tipper truck	10
	Wacker (Plate compactor)	5
	None	0

Clause number	Data

4. <u>Financial Means</u>

The Contractor is required to provide adequate proof:

- That the required Performance Guarantee can be obtained (letter of commitment from a reputable financial institution)
- That sufficient working capital is available to commence with an implementation of this project (letter of verification from the bidder's bank that working capital to the value of at least 5% of the value of the bid is readily available on demand for the period of at least two (2) months)
- A "D" bank code/rating or better has been confirmed by a reputable financial institution based on the tenderer's bank details submitted with the bid

Description	Percentage Capital & Rating	Maximum Points (30)
Working capital	5% or more	15 (Max-15)
Bank rating	C or better	15 (Max-15)
	D	10
	Less	0

Bidder offers will only be accepted if:

a) The Bidder has submitted a copy of a valid status pin from South African Revenue Services or the proof has been submitted that arrangements have been made to meet tax obligations. The Bidder has submitted a complete CSD report.

b) The Bidder has submitted the proof of registration with the Construction Industry Development Board in an appropriate contractor grading with the public sector

c) The Bidder or any of its Directors is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corruption Activities Act of 2004 as a person prohibited from doing business with the public sector

d) The Bidder has not:
   i) Abused the Employer's Supply Chain Management System
   ii) Or, failed to perform on any previous contract and has been given a notice this effect

Clause number	Data
	e) Has completed the Compulsory Enterprise Questionnaire and there are no conflicts of interests which may impact on the tender's ability to perform the contract in the best interests of the employer or potentially compromise the tender process.
	Total Points Achievable: **100**
	Minimum Score required: **60**
F.3.11.2	**Scoring Financial Offers** a) Preference points will be claimed as per MBD form 6.1 in terms of the Revised Preferential Procurement regulation 2017 b) The 80/20 system for requirements with a Rand value less than R 50 000 000.00 (all applicable taxes included) will be used to calculate preference points for this bid.
F.3.11.4 EVALUATION OF BID OFFERS	The preference procedure for evaluation of responsive bid offers shall be the **80/20**-point preference system, in full compliance with Form 2.3.3. Technical and general criteria will be evaluated in terms of paragraph 2.3.3.10
F.3.13.1 ACCEPTANCE OF BID OFFER	Bids containing any one or more of the errors or omissions, or bids not having complied with any one of the peremptory bid conditions as detailed on page 2 of this bid document, shall not be considered and shall automatically be rejected.
F.3.18 PROVIDE COPIES OF THE CONTRACTS	The number of paper copies of the signed contract to be provided by the Employer is five **(5).**
ADDITIONAL CONDITIONS APPLICABLE TO THIS BID	The additional conditions of bid are: 1 The Employer/Engineer may also request that the bidder provide written evidence that his financial, labour and other resources are adequate for carrying out the contract. 2 The Employer reserves the right to appoint a firm of chartered accountants and auditors and/or execute any other financial investigations on the financial resources of any bidder. The bidder shall provide all reasonable assistance in such investigations. 3 The Employer reserves the right to appoint a different Contractor for each Section as listed in the Schedule of Quantities. The bidder shall be required to complete the Form of Offer and Acceptance (C1.1) and Bills of Quantity for the Sections for which they intend to bid for. 4 The Employer may appoint more than one Contractor on this project, subject to the specific conditions agreed to in the Form of Acceptance. 5 **The applicable minimum rate for local labour is R 25.00 per hour.** 6 The bid document shall be submitted as a whole and shall **not** be taken apart. 7 **List of returnable documents (PART T2) must be completed in full.** (A bidder's company profile **will not** be used by the GAMAGARA LOCAL MUNICIPALITY to complete PART T2 on behalf of the bidder) **NB: If PART T2 is not completed in full by the bidder, this offer will be rejected.**

ANNEX F

(Normative)

T1.3 STANDARD CONDITIONS OF TENDER

These Standard Conditions of tender that follow below are identical to that contained In Annex F of the CIDB Revised Standard for Uniformity in Construction Procurement, published in terms of the Construction Industry Development Board Act, 2000 (Act No 38 of 2000) published in the Government gazette No 31823 of 30January 2009 which can be obtained from the CIDB web page (cidb.org.za).

F.1 General

F.1.1 Actions

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

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

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

F.1.2 Tender Documents

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

F.1.3 Interpretation

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

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

F.1.3.3 For the purposes of these conditions 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 personnel 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 personnel 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

F.1.4 Communication and Employer's agent

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

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

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

F.1.5.2 The Employer may not subsequent to the cancellation or abandonment of a tender process or the rejection of all 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.

F.1.6 Procurement procedures

F.1.6.1 General

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

F.1.6.2 Competitive negotiation procedure

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

F.1.6.2.2 All responsive tenderers, or not less than three responsive tenderers that are highest ranked in terms of the evaluation method and evaluation criteria stated in the 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 F.2.17, the employer may request that tenders be clarified, specified and fine-tuned in order to improve a tenderer's competitive position provided that such clarification, specification, fine-tuning 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.

F1.6.2.3 At the conclusion of each round of negotiations, tenderers shall be invited by the employer to make a fresh tender offer, based on the same evaluation criteria, with or without adjusted weightings. Tenderers shall be advised when they are to submit their best and final offer.

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

F.1.6.3 Proposal procedure using the two stage-system

F.1.6.3.1 Option 1

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

F.1.6.3.2 Option 2

F.1.6.3.2.1 Tenderers shall submit in the first stage only technical proposals. The employer shall invite all responsive tenderers to submit tender offers in the second stage, following the issuing of procurement documents.

F1.6.3.2.2 The employer shall evaluate tenders received during the second stage in terms of the method of evaluation stated in the tender data, and award the contract in terms of these conditions of tender.

F.2 Tenderer's obligations

F.2.1 Eligibility

F.2.1.1 Submit a tender offer only if the tenderer 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.

F.2.1.2 Notify the employer of any proposed material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used by the employer as the basis in a prior process to invite the tenderer to submit a tender offer and obtain the employer's written approval to do so prior to the closing time for tenders.

F.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 comply with requirements.

F.2.3 Check documents

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

F.2.4 Confidentiality and copyright of documents

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

F.2.5 Reference documents

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

F.2.6 Acknowledge addenda

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

F.2.7 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.

F.2.8 Seek clarification

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

F.2.9 Insurance

Be aware that the extent of insurance to be provided by the Employer (if any) 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.

F.2.10 Pricing the tender offer

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

F2.10.2 Show VAT payable by the Employer separately as an addition to the tendered total of the prices.

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

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

F.2.11 Alterations to documents

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.

F.2.12 Alternative tender offers

F.2.12.1 Unless otherwise stated in the tender data, submit alternative tender offers only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted as well as a schedule that compares the requirements of the tender documents with the alternative requirements that are proposed.

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

F.2.13 Submitting a tender offer

F.2.13.1 Submit one tender offer only, either as a single tendering entity or as a member in 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.

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

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

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

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

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

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

F.2.13.8 Accept that the employer 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.

F.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.

F.2.14 Information and data to be completed in all respects

Accept that tender offers, which do not provide all the data or information requested completely and in the form required, may be regarded by the employer as non-responsive.

F.2.15 Closing time

F.2.15.1 Ensure that the employer receives the tender offer at the address specified in the tender data not later than the closing time stated in the tender data. Accept that proof of posting shall not be accepted as proof of delivery.

F.2.15.2 Accept that, if the employer extends the closing time stated in the tender data for any reason, the requirements of these conditions of tender apply equally to the extended deadline.

F.2.16 Tender offer validity

F.2.16.1 Hold the tender offer(s) valid for acceptance by the employer at any time during the validity period stated in the tender data after the closing time stated in the tender data.

F.2.16.2 If requested by the employer, consider extending the validity period stated in the tender data for an agreed additional period with or without any conditions attached to such extension.

F.2.16.3 Accept that a tender submission that has been submitted to the employer may only be withdrawn or substituted by giving the employer's agent written notice before the closing time for tenders that a tender is to be withdrawn or substituted.

F.2.16.4 Where a tender submission is to be substituted, submit a substitute tender in accordance with the requirements of F.2.13 with the packages clearly marked as "SUBSTITUTE".

F.2.17 Clarification of tender offer after submission

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

Note: Sub-clause F.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.

F.2.18 Provide other material

F.2.18.1 Provide, on request by the employer, any other material that has a bearing on the tender offer, the tenderer's commercial position (including notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the employer for the purpose of a full and fair risk assessment. Should the tenderer not provide the material, or a satisfactory reason as to why it cannot be provided, by the time for submission stated in the employer's request, the employer may regard the tender offer as non-responsive.

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

F.2.19 Inspections, tests and analysis

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

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

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

F.2.21 Check final draft

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

F.2.22 Return of other tender documents

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

F.2.23 Certificates

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

F.3 The employer's undertakings

F.3.1 Respond to requests from the tenderer

F.3.1.1 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.

F.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, wither 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.

F.3.2 Issue Addenda

If necessary, issue addenda that may amend or amplify the tender documents to each tenderer during the period from the date that tender documents are available until 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.

F.3.3 Return late tender offers

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

F.3.4 Opening of tender submissions

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

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

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

F.3.5 Two-envelope system

F.3.5.1 A two-envelope system will **not** be followed.

F.3.5.2 Evaluate the quality of the technical proposals offered by tenderers, then advice 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.

F.3.6 Non-disclosure

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

F.3.7 Grounds for rejection and disqualification

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

F.3.8 Test for responsiveness

F.3.8.1 Determine, 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.

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

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.

F.3.9 Arithmetical errors, omissions and discrepancies

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

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

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

F.3.9.3 Notify the tenderer of all errors or omissions that are identified in the tender offer and invite the tenderer to either confirm the tender offer as tendered or accept the corrected total of prices.

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

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

F.3.10 Clarification of a tender offer

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

F.3.11 Evaluation of tender offers

F.3.11.1 General

Appoint an evaluation panel of not less than three persons. Reduce each responsive tender offer to a comparative offer and evaluate them using the tender evaluation ***method no 4*** below.

F.3.11.2 Method 1: Financial offer

In the case of a financial offer:

a) Rank tender offers from the most favourable to the least favourable comparative offer.
b) Recommend 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.

F.3.11.3 Method 2: Financial offer and preference

In the case of a financial offer and preference:

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

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

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

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

F.3.11.4 Method 3: Financial offer and quality

In the case of a financial offer and quality:

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

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

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

c) Rank tender offers from the highest number of tender evaluation points to the lowest.
d) Recommend 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.

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

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

a) Score each tender in respect of the financial offer made, preferences claimed, if any, and the quality offered in accordance with the provisions of F.3.9.1, rejecting all tender offers that fail to score the minimum number of points for quality stated in the tender data, if any.
b) Calculate the total number of tender evaluation points (T_{EV}) in accordance with the following formula:

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

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

c) Rank tender offers from the highest number of tender evaluation points to the lowest.

d) Recommend the tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.

e) Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with the highest number of tender evaluation points, and recommend the tenderer with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this sub-clause is repeated.

F.3.11.6 Decimal Places

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

F.3.11.7 Scoring Financial Offers

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

$N_{FO} = W_1 \times A$

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

Table F.1: Formulae for calculating the value of A

Formula	Comparison aimed at achieving	Option 1*	Option 2*
1	Highest price or discount	$A = (1 + (\frac{P - Pm}{Pm}))$	$A = P / Pm$
2	Lowest price or percentage commission/fee	$A = (1 - (\frac{P - Pm}{Pm}))$	$A = Pm / P$
* Pm is the comparative offer of the most favourable tender offer. P is the comparative offer of tender offer under consideration.			

F.3.11.8 Scoring preferences

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

F.3.11.9 Scoring quality

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;
M_S is the maximum possible score for quality in respect of a submission; and
W_2 is the number of tender evaluation points awarded for quality offered as stated in the tender data.

F.3.12 Insurance provided by the employer

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

F.3.13 Acceptance of tender offer

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

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

F.3.14 Prepare contract documents

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

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

F.3.15 Issue final contract

Prepare and issue the final draft of contract to the successful tenderer for acceptance as soon as possible after the date of the employer's signing of the form of offer and acceptance (including the schedule of deviations, if any).

F.3.16 Notice to unsuccessful tenderers

F.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.

F.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.

F.3.17 Provide copies of the contracts

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

F.3.18 Provide written reasons for actions taken

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

GAMAGARA LOCAL MUNICIPALITY

DEPARTMENT NAME: **PUBLIC WORKS AND BASIC SERVICES**

TENDER NO: **GM2022/48**

FOR: **GROUNDWATER SUPPLY IN OLIFANTSHOEK: CONSTRUCTION OF BULK LINK LINE FROM 4 BOREHOLES TO 7ML RESEVIOR: PHASE 3**

PART T2 LIST OF RETURNABLE DOCUMENTS PAGE(S)

The bidder must complete the following returnable documents.

NOTE:

Although the documents under Part T2 is headed "Returnable Documents" in line with the CIDB model, these are not the only documents to be returned together with the bid. **All** the documents indicated on Part T1, must be completed and signed where applicable and submitted as a **complete set of documents**.

T2.1 RETURNABLE SCHEDULES REQUIRED FOR BID EVALUATION PURPOSES

CONTENTS

FORM 2.1.1 SCHEDULE OF CONSTRUCTIONAL PLANT

The Bidder shall state below what Constructional Plant will be available for the work should he be awarded the Contract.
NB: **If the contractor owns the plant, proof of ownership should be submitted**.

DESCRIPTION, SIZE, CAPACITY	NUMBER

DESCRIPTION, SIZE, CAPACITY	NUMBER

FORM 2.1.2 SIZE OF ENTERPRISE AND CURRENT WORKLOAD

What was your turnover in the previous financial year? R_____

What is the estimated turnover for your current financial year? R_____

Physical facilities:

Provide information on offices, factories, yards and warehouses occupied by your enterprise (attach details if the space provided is not enough)

Description	Address	Area (m^2)

List your current contracts and obligations:

Description	Value (R)	Start date	Duration	Expected completed date

Do you have the capacity to supply the goods and services described in this bid, should the contract be awarded to you?

FORM 2.1.3 STAFFING PROFILE

Provide information on the staff that you have available to execute this contract (attach a separate list if the space provided is insufficient)

Own staff: gender and race	Number of staff
Staff to be employed for the project: gender and race	**Number of staff**

FORM 2.1.5 PROPOSED KEY PERSONNEL

The Bidder shall list below the key personnel (including first nominee and the second choice alternate), whom he proposes to employ on the project should his Bid be accepted, both at his headquarters and on the Site, to direct and for the execution of the work, together with their qualifications, experience, positions held and their nationalities.
NB: CV's of all key personnel should be submitted with Certified copies of all certificates, otherwise sero (0) points will be awarded.

DESIGNATION	NAME OF **(i) NOMINEE (ii) ALTERNATE**	NATIONALITY	SUMMARY OF **QUALIFICAT-IONS**	**EXPERIENCE AND PRESENT OCCUPATION**	**HDI Status Yes/No**	**NQF 7 Certified Yes/No**
HEADQUARTERS Partner/director						
Project manager						
Other key staff (give designation)						
CONSTRUCTION MONITORING Site Agent						
Engineer on Site						

Construction supervisor (give designation)						
Other key staff (give designation)						

FORM 2.1.6 SCHEDULE OF PREVIOUS WORK CARRIED OUT BY BIDDER

Provide the following information on **relevant previous experience.** Indicate comparable projects of similar or larger size. This information is material to the award of the Contract.

No points will be awarded if reference cannot be reached or if it refuses to supply information. Give at least one (1) name and telephone numbers and e-mail address per reference. COMPLETION CERTIFICATES SHOULD BE SUBMITTED FOR ALL COMPLETED PROJECTS LISTED.

EMPLOYER (Name, tel no and fax no)	**CONSULTING ENGINEER** (Name, tel no and fax no)	**NATURE OF WORK CARRIED OUT PREVIOUSLY**	**VALUE OF WORK**	**YEAR OF COMPLETION**

FORM 2.1.6 FINANCIAL ABILITY.

BANK RATING

Bank Code	Description of Bank Code
A	Undoubted for the amount of enquiry
B	Good for the amount of enquiry
C	Good for the amount quoted if strictly in the way of business
D	Fair trade risk for amount of enquiry
E	Figures considered too high
F	Financial position unknown
G	Occasional dishonours
H	Frequent dishonours

The value on which our Bank Rating of the Bidder is based is R……..
(In words …… only)

The Bank Rating is code: ……

Signature: Manager Financial Institution Print Name_____Date_____

RUBBER STAMP OF INSTITUTION

Letter from the bank will be accepted or the tender document must be taken to the bank for certification and bank stamp.

FORM 2.1.8 AUTHORITY FOR SIGNATORY

All signatories**, excluding sole proprietors**, shall confirm their authority by **attaching to the last page of this bid** a duly signed and ***dated original or certified copy*** of the relevant resolution of their meeting of members or their board of directors, as the case may be, *or by completing one of the following*:

1: COMPANIES / CLOSE CORPORATIONS

EXAMPLE SHOWN BELOW

"By resolution of the board of directors or meeting of members passed on *15 January 2015*,

Mr A. APPLE has been duly authorised to sign all documents in connection with the Bid for

*Contract number GM 2013/42*and any Contract, which may arise there from on behalf of the Bidding

Entity, namely, "ABCD (PTY) LTD"

SIGNED ON BEHALF OF THE BIDDING ENTITY: NAME: *B.J. JONES*

SIGNATURE: _____

IN HIS/HERS CAPACITY AS: *DIRECTOR / MEMBER*

DATE: *15 January 2015*

AUTHORISED PERSON'S SPECIMEN SIGNATURE: SIGNATURE OF*A. APPLE*

AUTHORISED PERSON'S SPECIMEN INITIAL INITIAL OF *A. APPLE*

**AND/OR* _____(SIGNATURE)_____(INITIAL)

*AND/OR_____ (SIGNATURE)_____(INITIAL)

* DELETE WHICH IS NOT APPLICABLE

AS WITNESS: 1. *B. XABA*

PLEASE TURN OVER FOR FORM TO BE COMPLETED

AUTHORITY FOR SIGNATORY

1: COMPANIES / CLOSE CORPORATIONS

FORM TO BE COMPLETED

"By resolution of the board of directors or meeting of members passed on _____
,

*(Mr/Me.).*_____ has been duly authorised to sign all documents in connection

with the Bid for GM …… and any Contract, which may arise there from

on behalf of the Bidding Entity, namely,_____

SIGNED ON BEHALF OF THE BIDDING ENTITY: NAME: _____

SIGNATURE: _____

IN HIS/HERS CAPACITY AS: _____

DATE: _____

AUTHORISED PERSON'S SPECIMEN SIGNATURE: _____

AUTHORISED PERSON'S SPECIMEN INITIAL _____

**AND/OR* _____(SIGNATURE)_____(INITIAL)

*AND/OR_____ (SIGNATURE)_____(INITIAL)

**AND/OR*_____

*AND/OR_____

* DELETE WHICH IS NOT APPLICABLE

AS WITNESS: 1. _____

2: *JOINT VENTURE / CONSORTIUM / PARTNESHIP:*

EXAMPLE SHOWN BELOW

We, the undersigned are submitting this bid and hereby authorize Mr. B. BROOK,

to sign all documents in connection with the bid for *Contract number ……..* and any contract resulting from it on our behalf.

NAME OF FIRMS	ADDRESS, TEL. NO., FAX. NO.	DULY AUTHORIZED SIGNATORY
Name of Firm no1	P.O. Box 111 Springs 1560	Signature:……..……. Name:……..... Designation:……
Name of Firm no 2	Address of 2nd Firm	Signature:……..…… . Name:……..... . Designation:……
Name of Firm no 3	Address of 3rd Firm	Signature:……..……. Name:……..... . Designation:……
Name of Firm no 4	Address of 4TH Firm	Signature:……..…… Name:……..... Designation:……
Name of Firm no 5	Address of 5TH Firm	Signature:……..……. Name:……..... Designation:……

SPECIMEN SIGNATURES AND INITIALS OF PERSON AUTHORIZED TO SIGN ALL DOCUMENTATION

1._____(SIGNATURE)_____(INITIAL)

2._____(SIGNATURE)_____(INITIAL)

3._____(SIGNATURE)_____(INITIAL)

DATE: _____

AS WITNESS: 1. _____

_____

PLEASE TURN OVER FOR FORM TO BE COMPLETED

AUTHORITY FOR SIGNATORY

2: *JOINT VENTURE / CONSORTIUM / PARTNERSHIP*

FORM TO BE COMPLETED

We, the undersigned are submitting this bid and hereby authorize 1)_____,

2)_____, 3)_____

to sign all documents in connection with the bid for …… and any contract

resulting from it on our behalf.

NAME OF FIRMS	ADDRESS, TEL. NO.,FAX. NO.	DULY AUTHORIZED SIGNATORY
	ADDRESS_____ _____ _____ _____ TEL. NO. _____ FAX. NO._____	Signature:……..…… Name:……..... Designation:……
	ADDRESS_____ _____ _____ _____ TEL. NO. _____ FAX. NO._____	Signature:……..…… . Name:……..... . Designation:……
	ADDRESS_____ _____ _____ _____ TEL. NO. _____ FAX. NO._____	Signature:……..…… Name:……..... . Designation:……
	ADDRESS_____ _____ _____ _____ TEL. NO. _____ FAX. NO._____	Signature:……..…… Name:……..... Designation:……
	ADDRESS_____ _____ _____ _____ TEL. NO. _____ FAX. NO._____	Signature:……..…… Name:……..... Designation:……

SPECIMEN SIGNATURES AND INITIALS OF PERSON AUTHORIZED TO SIGN ALL DOCUMENTATION

1._____(SIGNATURE)_____(INITIAL)

2._____(SIGNATURE)_____(INITIAL)

3._____(SIGNATURE)_____(INITIAL)

DATE: _____

AS WITNESS: 1. _____

JOINT VENTURE INFORMATION

(Complete only if applicable)

The parties hereto form a Joint Venture for the purpose of jointly bidding and obtaining the award of contract for " **GROUNDWATER SUPPLY IN OLIFANTSHOEK: CONSTRUCTION OF BULK LINK LINE FROM 4 BOREHOLES TO 7ML RESEVIOR: PHASE 3**" (hereinafter called the "Project") and of jointly performing such contract under joint and several responsibility .

The share of the partners in the Joint Venture shall be :

Full Name and address of Lead enterprise

…….. ……%

……

Full Name and address of 2nd enterprise

……. ……..%

……..

Full Name and address of 3rd enterprise

……. ……..%

……..

The Lead Partner is hereby authorised to incur liabilities, receive instructions, sign all documents in connection with the bid, and to be responsible for the entire execution and administration of the contract for and on behalf of the partners.

Payments will be made to an account that is in the name of the Joint Venture. Proof of this account must be attached to the bid document.

The Lead Partners shall supply a method statement on the processes that will be involved during the contract to train the junior partner

The Lead Partner shall always be present in the contract in a managing and mentoring role

The parties hereto shall make available to the Joint Venture the technical advice and benefit of their individual experience and shall, in all other respects, endeavour to share the responsibility and burden of the performance of the Joint Venture.

To this end the parties hereto shall share, in the above proportions, in all risks and obligations arising out of or in connection with the Contract, especially in the provisions of all necessary working capital and guarantees, in profit and loss and personnel.

The Lead Partners shall supply, in its name, Professional Liability Insurance for the amount and period as stated in the Contract Data.

The Joint Venture may not be terminated by any of the parties hereto until either:

The contract has been awarded to another bidder

or

The work undertaken by the Joint Venture under the contract has been completed and all liabilities and claims incurred by and made by the Joint Venture have been settled, the bid is cancelled or the period of validity of bid extended.

No party to the Agreement shall be entitled to sell, assign or in any manner encumber or transfer its interest or any part thereof in the Joint Venture without obtaining the prior written consent of the other party hereto.

The Parties of the Joint Venture shall cooperate on an exclusive basis. No Party shall during the validity period of the bid submit a bid to or enter into a Contract with the GAMAGARA LOCAL MUNICIPALITY or any other party for the Project, either alone or in collaboration with a third party.

Authorised Signature Lead Partner…….

Name ……..

Designation …….

Signed at…… on ……..

Authorised Signature of 2nd Partner…….

Name ……..

Designation …….

Signed at…… on ……..

Authorised Signature of 3rd Partner…….

Name ……..

Designation …….

Signed at…… on ……..

(ALL SIGNATORIES SHALL CONFIRM THEIR AUTHORITY BY ATTACHING TO THE LAST PAGE OF THE BID, ORIGINAL OR CERTIFIED COPIES OF DATED AND SIGNED RESOLUTIONS OF THE MEMBERS/DIRECTORS/PARTNERS AS THE CASE MAY BE.)

FORM 2.1.9 SCHEDULE OF PROPOSED SUBCONTRACTORS

Provide details on all sub-contractors you intend utilising for this contract:

Type of work to be used for	a % of contract	Name of sub-contractor	b % HDI owner-ship	Female ownership Yes / No	c=a x b/100 Total contribution to HDI ownership
Total % of contract sub-contracted		Total contribution of HDI ownership			

FORM 2.1.10 FINANCIAL REFERENCES

DETAILS OF BIDDING ENTITY'S BANK

If the bidder is a Joint Venture or partnership, the information requested below is required for each member / partner.

I/We hereby authorise the Employer/Engineer to approach all or any of the following banks for the purposes of obtaining a financial reference:

DESCRIPTION OF BANK DETAIL	BANK DETAILS APPLICABLE TO BIDDER
Name of bank	
Contact person	
Branch name	
Branch code	
Street address	
Postal address	
Telephone number	( )
Fax number	( )
Account number	
Type of account, (i.e. cheque account)	

BIDDER'S TAX DETAILS

Bidder's VAT vendor registration number: .....

Bidder's SARS tax reference number: .....

FORM 2.1.11 DETAILS OF ALTERNATIVE BIDS SUBMITTED

See condition of bid.

DESCRIPTION

FORM 2.1.12 AMENDMENTS AND QUALIFICATIONS BY BIDDER

See condition of bid

PAGE	DESCRIPTION

FORM 2.1.13 LABOUR-ENHANCED METHODS: PROPOSED PLANNED ACTIONS OF BIDDER RESULTING IN DEVIATIONS FROM SPECIFIED WORK

ACTIVITY OR PAY ITEM	DESCRIPTION OF PLANNED ACTION RESULTING IN DEVIATION FROM SPECIFIED WORK

Compliance with Employment Equity Act 55 of 1998

Attach a valid certificate from the Department of Labour, **or**a declaration (refer to "Form 2.3.5 – Specific goals") by the **designated employer**, that the employer complies with the relevant chapters of the Employment Equity Act.

Definitions in terms of the last mentioned Act.

"designated employer" means-

a) an employer who employs 50 or more employees;
b) an employer who employees fewer than 50 employees, but has a total annual turnover that is equal to or above the applicable annual turnover of a small business in terms of Schedule 4 to this Act."

"Schedule 4"
TURNOVER THRESHOLD APPLICABLE TO DESIGNATED EMPLOYERS

Sector or sub sector in accordance with the Standard Industrial Classification	Total annual turnover
Agriculture	R 5,00 m
Mining and Quarrying	R 39.00 m
Manufacturing	R 51,00 m
Electricity, Gas and Water	R 51,00 m
Construction	R 26,00 m
Retail and Motor Trade and Repair Services	R 39,00 m
Wholesale Trade, Commercial Agents and Allied Services	R 64,00 m
Catering, Accommodation and other Trade	R 13,00 m
Transport, Storage and Communications	R 26,00 m
Finance and Business Services	R 26,00 m
Community, Social and Personal Services	R 13,00 m

FORM 2.1 14 CONSTRUCTION PROGRAMME (This programme of works should be done by use of Microsoft projects programme, or anything similar)- Compulsory

FORM 2.1.15 CASH FLOW (This part of document is compulsory)

GAMAGARA LOCAL MUNICIPALITY

DEPARTMENT NAME: **PUBLIC WORKS AND BASIC SERVICES**

TENDER NO: **GM2022/48**

FOR: **GROUNDWATER SUPPLY IN OLIFANTSHOEK: CONSTRUCTION OF BULK LINK LINE FROM 4 BOREHOLES TO 7ML RESEVIOR: PHASE 3**

T2.2 OTHER DOCUMENTS REQUIRED FOR BID EVALUATION PURPOSES

CONTENTS

COMPULSORY SITE INSPECTIONS / INFORMATION / CLARIFICATION MEETINGS

Where Compulsory Site Inspections and Compulsory Information, Briefing or Clarification Meetings are to be held, it shall be subject to the following conditions:

1. **Necessity for Compulsory Site Inspection and Compulsory Information / Briefing / Clarification Meetings**

   Compulsory Inspections / Meetings must only be held where the nature of the contract is such that it requires either an inspection of a site or a briefing session. The Bid Specification Committee should indicate to the Bid Office that such a compulsory inspection or briefing is regarded as a necessity.

2. **Attendance Register**

   An attendance register of potential bidders and the firms they represent shall be kept and signed by attendees. A copy of such Attendance Register shall immediately after the inspection/briefing be sent to the Bid Office.

3. **Confirmation Notes of Inspection/Briefing Sessions**

   Confirmation Notes of the Compulsory Inspection or Briefing Session shall be held by or on behalf of the contact person of the Department for whom the Bid is being advertised. A copy of the notes shall be sent to each firm that was represented at the inspection/meeting as soon as possible after the inspection or meeting and before the closing date of the bid. A copy of the notes shall also be sent to the Bid Office. The relevant Department will ensure that the notes are submitted to the Bid Evaluation Committee and to the Bid Adjudication Committee.

4. **Bid Documents**

   The bid documentation shall clearly state that where the inspection of a site or the attendance of a briefing session is compulsory, non-attendance thereof will lead to the disqualification of the bidder in question. The bid documentation shall further clearly state that if bid documents are obtained **after** the compulsory briefing session or site inspection, it will only be made available to firms that were represented at the meeting. The mere fact that a firm that was not represented at a compulsory site inspection/meeting, but nevertheless submitted to the municipality a set of bidding documents, should not be construed as creating any expectations that a bid will be considered by the Municipality.

FORM 2.2.1 CERTIFICATE OF BIDDER'S ATTENDANCE AT THE COMPULSORY SITE/CLARIFICATION MEETING

This is to certify that I, ***(NAME IN PRINT)*** ..... ,

representative of (Bidder) .....

.....

of (address) .....

.....

.....

Telephone number .....

Fax number .....

visited and inspected the Site / Attended Clarification Meeting on (date) .....

in the company of (Engineer/Engineer's Representative) .....

SIGNATURE OF BIDDER'S REPRESENTATIVE: .....

FORM 2.2.2 CSD, SARS TAX COMPLIANCES STATUS PIN AND PROOF OF ADDRESS

(1) Proof of registration on the National Treasury Supply database (CSD) and a copy of a Tax Compliances Status Pin, printed from the South African Revenue Services; certifying that the bidder's taxes are in order or that suitable arrangements have been made with the SARS

(2) The bidder must attach the proof of updated municipal rates and taxes, and certified copies of BBBEE Certificate (in the case of a Joint Venture, a combined BBBEE certificate must be submitted), or valid affidavit? Proof of residential address (Municipal accounts, Letter from the local authorities and lease agreement)

Note:

1. Failure to affix such documentation as prescribed to this page shall result in this bid not being further considered for the award of the contract, by the Bid Evaluation Committee.

FORM 2.2.3 DECLARATION:

I/We, the undersigned:

(a) *bid to supply and deliver to the GAMAGARA LOCAL MUNICIPALITY [hereafter "GAMAGARA LOCAL MUNICIPALITY"] all or any of the supplies and to render all or any of the articles, goods, materials, services or the like described both in this and the other Schedules to this Contract;*

(b) *agree that we will be bound by the specifications, prices, terms and conditions stipulated in those Schedules attached to this bid document, regarding delivery and execution;*

(c) *further agree to be bound by those conditions, set out in, "PARTS T1; T2; C1; C2; C3 and C4", attached hereto, should this bid be accepted in whole or in part;*

(d) *confirm that this bid may only be accepted by the GAMAGARA LOCAL MUNICIPALITY by way of a duly authorised Letter of Acceptance;*

(e) *declare that we are fully acquainted with the Bid document and Schedules, and the contents thereof and that we have signed the Bill of Quantities and completed the Returnable Schedules and declarations, attached hereto;*

(f) *declare that all amendments to the bid document have been initialled by the relevant authorised person and that the document constitutes a proper contract between the GAMAGARA LOCAL MUNICIPALITY and the undersigned;*

(g) *certify that the item/s mentioned in the bid document, qualifies/qualify for the preference(s) shown.;*

(h) *acknowledge that the information furnished is true and correct;*

(i) *accept that in the event of the contract being awarded as a result of preference claimed in this bid document, I may be required to furnish documentary proof to the satisfaction of the GAMAGARA LOCAL MUNICIPALITY that the claims are correct If the claims are found to be inflated, the GAMAGARA LOCAL MUNICIPALITY may, in addition to any other remedy it may have, recover from me all cost, losses or damages incurred or sustained by the GAMAGARA LOCAL MUNICIPALITY as a result of the award of the contract and/or cancel the contract and claim any damages which the GAMAGARA LOCAL MUNICIPALITY may suffer by having to make less favourable arrangements after such cancellation;*

(i) *declare that no municipal rates and taxes or municipal service charges owed by the bidder or any of its directors to the municipality, or to any other municipality or municipal entity, are in arrears for more than three (3) months; and*

(k) *declare that I have not failed to perform satisfactorily during the last five (5) years on a previous contract with the Municipality, Municipal entity or any other organ of state, after written notice was given to me that my performance was unsatisfactory.*

(l) *the signatory to the bid document is duly authorised; and*

(m) *documentary proof regarding any tendering issue will, when required, be submitted to the satisfaction of the GAMAGARA LOCAL MUNICIPALITY.*

Signed at.....……...this.....day of……..... 20……

Name of Authorised Person: ----------

Authorised Signature:_____

Name of Bidding Entity:_____

Date: _____

As witness: **1.** _____

FORM 2.2.4 DECLARATION OF INTEREST

1. No bid will be accepted from persons in the service of the state*.

2. Any person, having a kinship with persons in the service of the state, including a blood relationship, may make 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 of Owner of the Bidding Entity: ……

3.2 Identity Number: ……

3.3 Company Registration Number: ……

3.4 Tax Reference Number: ……

3.5 VAT Registration Number: ……

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

3.6.1 If so, furnish particulars.

……

……

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

If so, furnish particulars.

……

……

3.8 Do you, have any relationship (close family member, partner or associate) with persons in the service of the state and who may be involved with the evaluation and or adjudication of this bid? **YES / NO**

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

(a) a member of –
  (i) any municipal Council;
  (ii) any provincial legislature; or
  (iii) the national Assembly or the national Council of provinces;

(b) a member of the board of directors of any municipal entity;
(c) an official of any municipality or municipal entity;
(d) an employee of any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 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.

3.8.1 If so, furnish particulars.

……

……

3.9 Are you, aware of any relationship (close family member, partner or associate) 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 UNDERSIGNED (NAME) ……**CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT.**

I ACCEPT THAT THE STATE MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

SHOULD THE INFORMATION REQUIRED ON THIS FORM NOT DULY BE SUPPLIED, THIS BID WILL BE REJECTED.

…….. ……..
Signature Date

…… …….
Position Name of Bidding Entity

FORM 2.2.5 DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

1 This Municipal Bidding Document must form part of all bids invited.

2 It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.

3 The bid of any bidder may be rejected if that bidder, or any of its directors have:

a. abused the municipality's / municipal entity's supply chain management system or committed any improper conduct in relation to such system;
b. been convicted for fraud or corruption during the past five years;
c. willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
d. been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).

4 In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

Item	Question	Yes	No
4.1	Is the bidder or any of its directors listed on the National Treasury's database as a company or person prohibited from doing business with the public sector? **(Companies or persons who are listed on this database were informed in writing of this restriction by the National Treasury after the *audialterampartem*rule was applied).**	Yes ☐	No ☐
4.1.1	If so, furnish particulars:		
4.2	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 ☐	No ☐
4.2.1	If so, furnish particulars:		
4.3	**Was the bidder or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?**	Yes ☐	No ☐
4.3.1	If so, furnish particulars:		

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

CERTIFICATION

I, THE UNDERSIGNED (FULL NAME) ……..…….…… CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM TRUE AND CORRECT.
I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT, ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

……... ……..
Signature **Date**

……. ……..……..
Position **Name of Bidder**

FORM 2.2.6 BBBEE CERTIFICATE

With effect from 7 December 2011 contractors must submit their BBBEE Certificates /ratings or a letter from a registered auditor in cases of Exempted Micro Enterprises(EME). IN THE CASE OF A JOINT VENTURE, A COMBINED BBBEE RATING CERTIFICATE MUST BE SUBMITTED

Note:

1. Failure to affix such documentation as prescribed to this page shall result in this bid not being further considered for the award of the contract, by the Bid Evaluation Committee.

GAMAGARA LOCAL MUNICIPALITY

DEPARTMENT NAME: **PUBLIC WORKS AND BASIC SERVICES**

TENDER NO: **GM2022/48**

FOR: **GROUNDWATER SUPPLY IN OLIFANTSHOEK: CONSTRUCTION OF BULK LINK LINE FROM 4 BOREHOLES TO 7ML RESEVIOR: PHASE 3**

T2.3 RETURNABLE SCHEDULES THAT WILL BE INCORPORATED IN THE CONTRACT

CONTENTS

FORM 2.3.1FORM CONCERNING FULFILMENT OF THE CONSTRUCTION REGULATIONS,2003

In terms of regulation 4(3) of the Construction Regulations, 2003 (hereinafter referred to as the Regulations), promulgated on 18 July 2003 in terms of Section 43 of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993) the Employer shall not appoint a contractor to perform construction work unless the Contractor can satisfy the Employer that his/her firm has the necessary competencies and resources to carry out the work safely and has allowed adequately in his/her bid for the due fulfilment of all the applicable requirements of the Act and the Regulations.

1 I confirm that I am fully conversant with the Regulations and that my company has (or will acquire/procure) the necessary competencies and resources to timeously, safely and successfully comply with all of the requirements of the Regulations.

(Tick)

YES	
NO	

2 Proposed approach to achieve compliance with the Regulations (Tick)

Own resources, competent in terms of the Regulations (refer to 3 below)	
Own resources, still to be hired and/or trained (until competency is achieved)	
Specialist subcontract resources (competent) - specify:	

3 Provide details of proposed key persons, competent in terms of the Regulations, who will form part of the Contract team as specified in the Regulations (CVs to be attached):

.....

.....

.....

4 Provide details of proposed training (if any) that will be undergone:

.....

.....

.....

.....

5 Potential key risks identified and measures for addressing risks:

.....

.....

.....

.....

6 I have fully included in my bidded rates and prices (in the appropriate payment items provided in the Schedule of Quantities) for all resources, actions, training and any other costs required for the due fulfilment of the Regulations for the duration of the construction and defects repair period. (Tick)

YES	
NO	

SIGNATURE OF PERSON(S) AUTHORISED TO SIGN THIS BID:

1 ..... ID NO: .....

2 ..... ID NO: .....

FORM 2.3.2 RECORD OF ADDENDA TO BID DOCUMENTS

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

	Date	Title or Details
1		Confirmatory notes of compulsory site/clarification meeting
2		
3		
4		
5		
6		
7		
8		
9		
10		

Attach additional pages if more space is required.

…… ……

Signature of Authorized person: Date:

Name: ……..… Position: ……..

FORM 2.3.3 CONDITIONS PERTAINING TO TARGETED PROCUREMENT

2.3.3.1 PREAMBLE

2.3.3.2 DEFINITIONS

2.3.3.3 LEGISLATIVE BASE

2.3.3.4 SCOPE

2.3.3.5 PURPOSE

2.3.3.6 OBJECTIVES

2.3.3.7 GENERAL PRINCIPLES GOVERNING THE MUNICIPALITY IN ITS INTERACTION WITH BIDDERS

2.3.3.8 ADJUDICATION OF BIDS

2.3.3.9 ADJUDUCATION USING A POINT SYSTEM

2.3.3.10 IMPLEMENTATION FRAMEWORK

2.3.3.11 COMPLAINTS/DISQUALIFICATIONS

2.3.3.12 DISQUALIFICATIONS

2.3.3.13 ADDENDUM: DEFINITION OF A SMALL BUSINESS, SPECIFICALLY AN SMME

GAMAGARA LOCAL MUNICIPALITY

Preferencing Schedule (Contract Participation Goals)

2.3.3 CONDITIONS PERTAINING TO TARGETED PROCUREMENT
THE FOLLOWING IS AN EXTRACT FROM THE SUPPLY CHAIN MANAGEMENT POLICY AND STRATEGY TERMS OF THE PREFERENCE DOCUMENT

2.3.3.1 PREAMBLE
The GAMAGARA LOCAL MUNICIPALITY aims to improve the quality of life of all citizens and to free the potential of each person. Within a framework of facilitating service delivery, through efficient and effective governance, the Municipality wishes to take into account the need for transparent and effective procurement procedures that give effect to the principle of preferential procurement.

2.3.3.2 DEFINITIONS
In this policy, unless the context otherwise indicates:

2.3.3.2.1 **"Acceptable bid"** means any bid which, in all respects, complies with the conditions of bid and specifications as set out in the bid document, including conditions as specified in the Procurement Policy and Strategy Terms of Reference Act (Act 5 of 2000) and related legislation.

2.3.3.2.2 **"Chairperson"** means the chairperson of the Bid Committee.

2.3.3.2.3 "**City Manager**" means the Municipal Manager of the Municipality.

2.3.3.2.4 "**Committee**" refers to the Bid Committee.

2.3.3.2.5 "**Contractor**" refers to bidders who have been successful in being awarded Municipality contracts.

2.3.3.2.6 "**Municipality**" refers to the GAMAGARA LOCAL MUNICIPALITY.

2.3.3.2.7 "**Equity ownership**" refers to the percentage ownership and control, exercised by individuals within an enterprise.

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

2.3.3.2.9 "**Member**" means a member of the Bid Committee.

2.3.3.2.10 "**Historically disadvantaged individuals** (HDIs)" means all South African citizens –

(i) Who, due to the apartheid policy that had been in place, had no franchise in national elections prior to the introduction of the Constitution of the Republic of South Africa, 1983 (Act No 110 of 1983) or the Constitution of the Republic of South Africa, 1993 (Act No 200 of 1993) ("the Interim Constitution"); and / or
(ii) Who is a female; and / or
(iii) Who has a disability:

Provided that a person who obtained South African citizenship on or after the coming to effect of the Interim Constitution, is deemed not to be an HDI. "

2.3.3.2.11 "**SMMEs**" (Small, Medium and Micro Enterprises) refers to separate and distinct business entities, including co-operative enterprises and NGOs, managed by one owner or more, as defined in the National Small Business (Act 102 of 1996). Please note the attached addendum for a definition of SMMEs for different economic sectors (Clause 2.3.3.14).

2.3.3.2.12 "**Bid Advice Centre**" refers to a centre established and operated by Municipality, which provides information and assistance to SMMEs in general, and bidders biding for Municipality goods and services.

2.3.3.2.13 "**Contract**" refers to a legally binding agreement between the Municipality and the Contractor.

2.3.3.3 LEGISLATIVE BASE

This policy is governed by the following legislation and informed by the following policy frameworks:

- Constitution of South Africa (Act 108 of 1996)
- Local Governmental Structures Act (Act 117 of 1998)
- Local Government Systems Act (Act 32 of 2000)
- Local Government Transition Act (Act 209 of 1993), if applicable.
- Preferential Procurement Policy Framework Act (Act 5 of 2000)
- Rationalisation of Local Government Affairs Act (Act 10 of 1998)
- Green Paper on Public Sector Procurement Reform in South Africa
- Ten Point Plan for Public Sector Procurement Reform in South Africa.
- Broad Based Black Economic Empowerment Act (Act No. 53 of 2003)
- Municipal Finance Management Act (Act No. 56 of 2003).

2.3.3.4 SCOPE

This policy applies to all contracts awarded by the Municipality.

2.3.3.5 PURPOSE

The purpose of the policy is to provide a framework within which effect can be given to the principle of preferential procurement, while ensuring that transparent, efficient and effective procurement practices are adhered to.

2.3.3.6 OBJECTIVES

The objectives of the Municipality's procurement policy are to:

2.3.3.6.1 Provide clarity on the Municipality's approach to procurement, particularly with regards to the requirements of preferential procurement.
2.3.3.6.2 Provide access to contracts for historically disadvantaged individuals.
2.3.3.6.3 Promote SMME participation.
2.3.3.6.4. Promote capacity development and skills transfer.
2.3.3.6.5 Promote community empowerment and development.
2.3.3.6.6 Promote job creation.
2.3.3.6.7 Create an enabling contractual environment.

2.3.3.7 GENERAL PRINCIPLES GOVERNING THE MUNICIPALITY IN ITS INTERACTION WITH BIDDERS

In dealing with bidders biding for Municipality work, the Municipality will adhere to the principles of:

2.3.3.7.1 <u>Efficiency</u>

2.3.3.7.1.1 The Municipality undertakes to administer the procurement process in the most efficient manner possible, avoiding time delays and duplication of activities.
2.3.3.7.1.2 Where such delays are unavoidable, the Municipality undertakes to inform all bidders of the nature of the delay and the revised time frames.

2.3.3.7.2 Courtesy

All staff members of the Municipality will deal with bidders in a courteous and respectful manner.

2,3.3.7.3 Transparency

2.3.3.7.3.1 All bidded processes will be open to the scrutiny of the public and interested parties.

2.3.3.7.3.2 The Municipality will take all reasonable steps to ensure that its processes are clearly defined and understandable to all interested parties.

2.3.3.7.4 Access to Information

The Municipality will take reasonable steps to ensure that all bidders have equal access to information on the product or service to be bidded, as well as the bid process itself.

2.3.3.8 ADJUDICATION OF BIDS

Bids are adjudicated in terms of GAMAGARA LOCAL MUNICIPALITY Procurement Policy, and the following framework is provided as a guideline in this regard.

2.3.3.8.1. Technical adjudication and General Criteria

Bids will be adjudicated in terms of inter alia:

- **Compliance with bid conditions**
- **Technical specifications**

If the bid does not comply with the bid conditions and technical specifications, the bid shall be rejected. Refer to page two (2) for examples.

2.3.3.8.2 Infrastructure and resources available

Evaluation of the following in terms of the size, nature and complexity of goods and/or services required:

- Physical facilities
- Plant and equipment available for the contract owned by the bidder
- Plant and equipment the bidder intends renting, should the contract be awarded to him.

2.3.3.8.3 Size of enterprise, and current workload

Evaluation of the bidder's position in terms of:

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

2.3.3.8.4 Staffing profile

Evaluation of the bidder's position in terms of:

- Staff available for this contract being bidded for
- Qualifications and experience of key staff to be utilised on this contract.

2.3.3.8.5. Previous experience

Evaluation of the bidder's position in terms of his previous experience. Emphasis will be placed on the following:

- Experience in the relevant technical field
- Experience of contracts of similar size
- Some or all of the references will be contacted to obtain their input.

2.3.3.8.6 Financial ability to execute the contract

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

- Surety proposed
- Estimate cash flow
- Contact the bid's bank manager to assess the bidder's financial ability to execute the contract and the bidder hereby grants his consent for this purpose.

2.3.3.9 ADJUDICATION USING A POINTS SYSTEM

2.3.3.9.1 Job creation

Bidders that are able to employ labour-intensive work methods (where appropriate) will be given preference.

2.3.3.9.2 Local Content

Bidders that provide products developed, manufactured and assembled and/or distributed in South Africa will be given preference where applicable.

2.3.3.10 IMPLEMENTATION FRAMEWORK

This tender will be adjudicated in accordance with the preference points system described in the Preferential Procurement Policy Framework Act, 2000 (Act 5 of 2000) and the Regulations thereto published in Government Notice No 22549 of 10 August 2001.

2.3.3.10.1 EXAMINATION OF TENDERS AND DETERMINATION OF RESPONSIVENESS

2.3.3.10.1.1 Pre-evaluation investigation of tenders.

Prior to the detailed evaluation of tenders, the Employer will determine whether each tender:

- Meet the requirements of these Conditions of Tender
- Has been properly signed;
- Is responsive to the requirements of the contract documents;
- Provides any clarification and/or substantiation that the Employer may require;
- Complies with the tender submission requirements in all other respects.

2.3.3.10.1.2 Responsive (acceptable) tenders

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

- Could detrimentally affect the scope, quality, or performance of the works;
- Changes the Employer's or the Tenderers risks and responsibilities under the contract; or

- Would affect the competitive position of other Tenders' presenting responsive tender, it was to be rectified.

2.3.3.10.1.3 A person awarded a contract as a result of preference for contracting with, or providing equity ownership to an HDI, may not subcontract more than 25% of the value of the contract to a person who is not an HDI or does not qualify for such preference.

2.3.3.10.1.4 Non-responsive tenders

If the tender does not meet the requirement or is not responsive, it will be rejected by the Employer, and may not subsequently be made acceptable to the Employer by correction or withdrawal of the non-conforming deviation or reservation.

2.3.3.10.2 ADJUDICATION OF TENDERS USING A POINTS SYSTEM

The Employer using the system as set out in the Preferential Procurement Regulations 2001 will adjudicate responsive tenders. Points are awarded on the basis of:

a) the tendered price

b) the tendered Contract Participation Goal.

c) the functionality

The Employer will normally award the contract to the Tenderer obtaining the highest number of points, but will not be subjected to accept any tender.

2.3.3.10.2.1. Points awarded for Price (Ps)

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

Ps	-	80 (1-(Pt-Pmin) / Pmin)
Where Ps	-	adjudication points for price of Tender under consideration
Pmin	-	the Rand value of the lowest responsive tender
Pt	-	the Rand value of the responsive tender under consideration

2.3.3.10.2.2. Points awarded for BBBEE Status

BBBEE STATUS LEVEL OF CONTRIBUTOR	NUMBER OF POINTS
1	20
2	18
3	14
4	12
5	8
6	6
7	4
8	2
Non-Compliant Contributor	0

2.3.3.10.3 TOTAL TENDER ADJUDICATION POINTS

The total number of tender adjudication points awarded is:

N = Ps + Nep
(Nep may not exceed 20 points)

2.3.3.10.4 PROCESS TO BE CONFIDENTIAL

Information supplied by Tenderers relating to the examination, clarification, evaluation and adjudication of tenders and recommendations for the award of a contract will not be disclosed to Tenderers or any other person not officially concerned with such processes.

Any effort by a Tenderer to influence the Employer's processing of tenders or award decision may result in the rejection of his tender.

2.3.3.10.5 PENALTY

Should the Contractor fail to reach his tendered Contract Participation Goal (Nep) at the completion of the contract, he will be penalized by an amount equal to the preference which had been given to him in the tender adjudication and such amount will be subtracted from moneys due to the Contractor.

2.3.3.11 COMPLAINTS/DISQUALIFICATIONS

Should any issues of concern with regard to the procurement process arise, the following steps will apply:

2.3.3.11.1 A bid will be subject to rejection/disqualification when:

2.3.3.11.1.1 A supplier provided false information.

2.3.3.11.1.2 Under pressure or influence was exerted on a person involved in evaluating a bid.

2.3.3.11.1.3 A financial reward was provided to a person involved in evaluating a bid.

2.3.3.11.1.4 A person involved in evaluating a bid has a material interest in the outcome of the application, and has not declared such interest, or has not recused him/herself from the evaluation process of such a bid.

2.3.3.11.2 In such cases the following steps should be taken:

2.3.3.11.2.1 The Municipal Manager will investigate the matter and make recommendations to the Bid Committee.

2.3.3.11.2.2 The Bid Committee will decide or make recommendations to Municipality, for a resolution on the matter.

2.3.3.11.2.3 A written notice will be sent to the bidder or service provider requiring him/her to make a representation to the Bid Committee on how the issues of concern will be addressed, within 14 days of receiving the notice, subject to it being a issue which can in fact be addressed.

2.3.3.11.2.4 The Bid Committee will consider the representation and if they are not satisfied that the issues of concern have been addressed will:

- Disqualify the bid
- Recover any losses or damages suffered by Municipality due to the failure to comply.
- Bar the bidder from being considered for any bid for a defined period of time.

2.3.3.11.2.5 The bidder will be notified in writing on:

- The reasons for the decision.
- His/her right to appeal against the Bid Committee's decision.
- Name of a contact person to discuss the matter.

2.3.3.11.2.6 The Bidder must launch an appeal:

- Within 14 days of the date of notice.
- Setting out the grounds for the appeal.
- Addressed to the Procurement Appeals Tribunal with copies to the City Manager.

2.3.3.11.2.7 The Procurement Appeals Tribunal will hear the appeal.

2.3.3.11.2.7.1 The tribunal will comprise of 3 or 5 (uneven number) arbitrators.

2.3.3.11.2.7.1 Councillors or Municipality employees may not be members of the Tribunal.

2.3.3.11.2.8 The Municipal Manager must produce procedures for administering the appeals process and revise these on an annual basis.

2.3.3.12 DISQUALIFICATIONS

Non-compliance with the Preferential Procurement Policy Framework Act.

2.3.3.13 ADDENDUM:

DEFINITION OF A SMALL BUSINESS, SPECIFICALLY A SMME

A SMME (small, medium or micro enterprise) is defined in terms of the National Small Business Act, Act 26 of 2003, as shown in the following table:

Sector or sub-sectors in accordance with the Standard Industrial Classification	Size or class	Total full-time equivalent of paid employees Less than	Total annual turnover Less than	Total gross asset value (fixed property excluded) Less than
Agriculture	Medium Small Very small Micro	100 50 10 5	R 5.00 m R 3.00 m R 0.50 m R 0.20 m	R 5.00 m R 3.00 m R 0.50 m R 0.23 m
Mining and Quarrying	Medium Small Very small Micro	200 50 20 5	R39.00 m R 10.00 m R 4.00 m R 0.20 m	R23.00 m R 6.00 m R 2.00 m R 0.10 m
Manufacturing	Medium Small Very small Micro	200 50 20 5	R51.00 m R13.00 m R 5.00 m R 0.20 m	R19.00 m R 5.00 m R 2.00 m R 0.10 m

Sector or sub-sectors in accordance with the Standard Industrial Classification	Size or class	Total full-time equivalent of paid employees Less than	Total annual turnover Less than	Total gross asset value (fixed property excluded) Less than
Electricity, Gas and Water	Medium Small Very small Micro	200 50 20 5	R51.00 m R13.00 m R 5.10 m R 0.20 m	R19.00 m R 5.00 m R 1.90 m R 0.10 m
Construction	Medium Small Very small Micro	200 50 20 5	R26.00 m R 6.00 m R 3.00 m R 0.20 m	R 5.00 m R 1.00 m R 0.50 m R 0.10 m
Retail and Motor Trade and Repair Services	Medium Small Very small Micro	200 50 20 5	R39.00 m R19.00 m R 4.00 m R 0.20 m	R 6.00 m R 3.00 m R 0.60 m R 0.10 m
Wholesale Trade, Commercial Agents and Allied Services	Medium Small Very small Micro	200 50 20 5	R64.00 m R32.00 m R 6.00 m R 0.20 m	R 10.00 m R 5.00 m R 0.60 m R 0.10 m
Catering, Accommodation and other Trade	Medium Small Very small Micro	200 50 20 5	R13.00 m R 6.00 m R 5.10 m R 0.20 m	R 3.00 m R 1.00 m R 1.90 m R 0.10 m
Transport, Storage and Communications	Medium Small Very small Micro	200 50 20 5	R26.00 m R13.00 m R 3.00 m R 0.20 m	R 6.00 m R 3.00 m R 0.60 m R 0.10 m
Finance and Business Services	Medium Small Very small Micro	200 50 20 5	R26.00 m R13.00 m R 3.00 m R 0.20 m	R 5.00 m R 3.00 m R 0.50 m R 0.10 m
Community, Social and Personal Services	Medium Small Very small Micro	200 50 20 5	R13.00 m R 6.00 m R 1.00 m R 0.20 m	R 6.00 m R 3.00 m R 0.60 m R 0.10 m

Government Gazette, 26 November 2003

PLEASE REMEMBER:

- **TO ATTACH CSD AND A COPY OF A TAX COMPLIANCE STATUS PIN, PRINTED FROM THE SOUTH AFRICAN REVENUE SERVICES (SARS) WEBSITE, MUST ACCOMPANY THE BID DOCUMENTS**
- **IN THE CASE OF A JOINT VENTURE, A COPY OF A TAX COMPLIANCE STATUS PIN, PRINTED FROM THE SOUTH AFRICAN REVENUE SERVICES (SARS) WEBSITE, OF EACH PARTNER, MUST BE SUBMITTED WITH THE BID DOCUMENT.**
- **TO ATTACH COPIES OF ALL THE LATEST RELEVANT MUNICIPAL ACCOUNTS OF THE BIDDING ENTITY AND ALL OF ITS DIRECTORS OR MEMBERS OF THE BOARD. IF ANY ACCOUNT IS IN ARREARS FOR MORE THAN 3 MONTHS, THE BID WILL BE REJECTED.**
- **IN THE CASE OF A JOINT VENTURE, COPIES OF MUNICIPAL ACCOUNTS NOT OLDER THAN THREE (03) MONTHS OF EACH PARTNER, MUST BE SUBMITTED WITH THE BID DOCUMENT**
- **ATTACH ALL REQUIRED DOCUMENTS TO THE LAST PAGE OF YOUR BID DOCUMENT**

FORM 2.3.4 GENERAL INFORMATION

1. Name of biding entity:

_____

2. Contact details

Contact name and number: _____

Address of bidding entity:

_____

Postal code:

Tel no: ( ) Fax no: ( )

E-mail address:

3. Legal entity: Mark with an X.

Sole proprietor	
Partnership	
Close corporation	
Company (Pty) Ltd	
Joint venture	

In the case of a Joint venture, provide details on joint venture members:

Joint venture member	**Type of entity (as defined above)**

4. Income tax reference number:**(COMPULSORY)**
(In the case of a joint venture, provide for all joint venture members)

_____ _____

_____ _____

5. VAT registration number**(COMPULSORY)**:
(In the case of a joint venture, provide for all joint venture members)

_____ _____

_____ _____

6. Company or closed corporation registration number**(COMPULSORY)**:
(In the case of a joint venture, provide for all joint venture members)

_____ _____

_____ _____

7. Construction Industry Development Board (CIDB) registration number**(COMPULSORY)**
(In the case of a joint venture, provide for all joint venture members)

_____ _____

_____ _____

8. Municipal account numbers of bidding entities and its directors / members **(COMPULSORY)**
(In the case of a joint venture, provide for all joint venture members)

ACCOUNT NUMBERS	LOCAL AUTHORITY
_____	_____
_____	_____
_____	_____
_____	_____

9. Details of proprietor, partners, closed corporation members, or company directors, indicating technical qualifications where applicable (Form on the next page).

10. For joint ventures the following must be attached:

- Written authority ***of each JV partner,*** for authorized signatory.
- The joint venture agreement.
- The major partner to satisfy at least 40 percent of the turnover and credit amount criteria, and each other partner at least 25 percent of the criteria.

SIGNATURE OF AUTHORIZED PERSON : ……

DATE : ……

DETAILS OF PROPRIETOR, PARTNERS, CLOSED CORPORATION MEMBERS OR COMPANY DIRECTORS
(In the event of a joint venture, to be completed by all joint venture partners)

.1.1.1 Name and Surname	.1.1.2 Identity Number	.1.1.3 Relevant qualifications and experience	**Years of relevant experience**

FORM 2.3.5 SPECIFIC GOALS

In the case of joint ventures equity ownership for each of the JV members are determined as above, and the combined HDI ownership is then calculated as follows:

Joint venture members	a **% Contribution to the JV**	B **% BBBEE Points**	c = a * b ÷ 100 **% contribution**
Total HDI contribution			

A COPY OF A VALID SIGNED JOINT VENTURE AGREEMENT MUST BE ATTACHED TO THE BID DOCUMENT.

FAILURE TO COMPLY WITH ABOVE-MENTIONED WILL RESULT IN REJECTION OF THIS BID

NOTE: **See table in paragraph 2.3.3.10 for specific goals and points to be awarded.**

FORM 2.3.6 SOCIAL RESPONSIBILITY

Provide a detailed description and extent of the contractors planned social responsibility contribution for this contract (attach a separate list if the space provided is insufficient)

GAMAGARA LOCAL MUNICIPALITY

TENDER NO: 2020/48

FOR: **GROUNDWATER SUPPLY IN OLIFANTSHOEK: CONSTRUCTION OF BULK LINK LINE FROM 4 BOREHOLES TO 7ML RESEVIOR: PHASE 3**

CONTENTS

GAMAGARA LOCAL MUNICIPALITY

TENDER NO: **2020/48**

FOR: **GROUNDWATER SUPPLY IN OLIFANTSHOEK: CONSTRUCTION OF BULK LINK LINE FROM 4 BOREHOLES TO 7ML RESEVIOR: PHASE 3**

GAMAGARA LOCAL MUNICIPALTY

TENDER NO: **2020/48**

FOR: **GROUNDWATER SUPPLY IN OLIFANTSHOEK: CONSTRUCTION OF BULK LINK LINE FROM 4 BOREHOLES TO 7ML RESEVIOR: PHASE 3**

C1.1 FORM OF OFFER AND ACCEPTANCE

FORM OF OFFER AND ACCEPTANCE
(AGREEMENT)

OFFER

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract in respect of the following works:

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

By the representative of the Bidder, deemed to be duly authorised, signing this apart of this Form of Offer and Acceptance, the Bidder 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

SECTION 1 R_____ In words

_____

_____

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 Bidder before the end of the period of validity stated in the Bid Data, whereupon the Bidder becomes the party named as the Contractor in the Conditions of Contract identified in the Contract Data.

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

FOR THE BIDDER:

Signature(s) _____

Name(s) _____

Capacity _____ Date _____

_____
(Name and address of organisation)

Name and signature of Witness_____

Date _____

ACCEPTANCE

By signing this part of this Form of Offer and Acceptance, the Employer identified below accepts the Bidder'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 Bidder's Offer shall form an agreement, between the Employer and the Bidder 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 Bid Data and any addenda thereto listed in the Bid Schedules as well as any changes to the terms of the Offer agreed by the Bidder and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Agreement. No amendments to or deviations from said documents are valid unless contained in this Schedule, which must be duly signed by the authorised representative(s) of both parties.

The Bidder 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 Bidder receives one fully completed original copy of this document, including the Schedule of Deviations (if any). Unless the Bidder (now Contractor) within five working days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this Agreement, this Agreement shall constitute a binding contract between the parties.

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

FOR THE EMPLOYER:

Signature(s) _____

Name(s) _____

Capacity _____ Date _____

AFRIMAT DEMANENG PROPRIETARY LIMITED

Name and signature of witness_____

Date _____

SCHEDULE OF DEVIATIONS
Notes:

1. The extent of deviations from the bid documents issued by the Employer prior to the bid closing date is limited to those permitted in terms of the Conditions of Bid.

2. A Bidder'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 bid 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 bid documents arising from the above agreements and recorded here, shall also be incorporated into the final draft of the Contract.

1 **Subject** _____

Details _____

2 **Subject** _____

Details _____

3 **Subject** _____

Details _____

4 **Subject** _____

Details _____

5 **Subject** _____

Details _____

6 **Subject** _____

Details _____

By the duly authorised representatives signing this Schedule of Deviations, the Employer and the Bidder agree to and accept the foregoing Schedule of Deviations as the only deviations from and amendments to the documents listed in the Bid Data and addenda thereto as listed in the Bid Schedules, as well as any confirmation, clarification or change to the terms of the offer agreed by the Bidder 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 bid documents and the receipt by the Bidder of a completed signed copy of this Agreement shall have any meaning or effect in the contract between the parties arising from this Agreement.

FOR THE BIDDER:

Signature(s) _____

Name(s) _____

Capacity _____ Date _____

_____

(Name and address of organisation)

Name and signature of witness

_____ Date _____

FOR THE EMPLOYER:

Signature(s) _____

Name(s) _____

Capacity _____

GAMAGARA LOCAL MUNICIPALITY

Name and signature of witness

_____ Date _____

C1.2 CONTRACT DATA

CONDITIONS OF CONTRACT

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

The Bidder is deemed to be in possession and have full knowledge of the abovementioned General Conditions of Contract. Copies of the General Conditions of Contract may be obtained from the South African Institution of Civil Engineering, Tel 011 805 5947.

PART 1: DATA PROVIDED BY THE EMPLOYER

The General Conditions of Contract make several references to the Contract Data for details that apply specifically to this Bid. The Contract Data shall have precedence in the interpretation of any ambiguity or inconsistency between it, the General Conditions of Contract and the Specifications. Each item of data given below is cross-referenced to the clause in the General Conditions of Contract to which it applies.

The following contract specific data are applicable to this Contract:

Clause	
1.1.1.12	"Day" shall mean a calender day.
1.1.1.13	The Defects Liability Period is 12 months.
1.1.1.14	The time for achieving Practical Completion is 4 months.
1.1.1.15	The Employer is: The Municipal Manager GAMAGARA LOCAL MUNICIPALITY Cnr Hendrik van Eck &Frikkie Meyer Roads Kathu 8446 Tel: 053 723 6000 Fax: 053 723 2021
1.1.1.16	The Owner/Beneficiary is the GAMAGARA LOCAL MUNICIPALITY The Employer's address for receipt of written communications is: Physical address: Cnr Hendrik van Eck &Frikkie Meyer Roads Kathu 8446 Tel: (053) 723 2261 Fax: (053) 723 2021
1.1.1.17	The Employer's Agent is METSWEDING CONSULTING ENGINEERS The Engineer's address for receipt of written communications is: Physical (street address) address: 28 Dick King Street Vanderbijlpark 1911 Telephone: +27 81 256 1159 Fax: +27 86 774 4229 E-mail: admin@metswedingce.co.za
1.3	Preliminary and General items described in the SANS 1200 A/AB specifications but not included or shown in the Bill of Quantities are deemed to have been included in other bidded rates.
3.3.3.1	The Engineer is required to obtain the specific approval of the Employer for the following: The Engineer requires Employer's approval in order to authorize any expenditure in excess of the contract Sum excluding contingencies as per Clause 6.4.

Clause	
1.1.1.12	"Day" shall mean a calender day.
4.3 & 4.5.3	**Variations to the Conditions of Contract are:** Add the following after 4.3 "4.3.1 The Employer and the Contractor hereby agree, in terms of the provisions of Section 37(2) of the Occupational Health and Safety Amendment Act, 1993 (Act 85 of 1993), hereinafter referred to as 'the Act', that the following arrangements and procedures shall apply between them to ensure compliance by the Contractor with the provisions of the Act: (i) The Contractor undertakes to acquaint the appropriate officials and employees of the Contractor with all relevant provisions of the Act and the Regulations promulgated in terms of the Act. (ii) The Contractor undertakes that all relevant duties, obligations and prohibitions imposed in terms of the Act and Regulations on the Contractor will be fully complied with. (iii) The Contractor 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 from himself being obliged to comply with any of the aforesaid duties, obligations and prohibitions, with the exception of such duties, obligations and prohibitions expressly assigned to the Employer in terms of the Act and its associated Regulations. (iv) The Contractor agrees that any duly authorized officials of the Employer shall be entitled, although not obliged, to take such steps as may be necessary to monitor that the Contractor has conformed to his undertakings as described in paragraphs (i) and (ii) above, which steps may include, but will not be limited to, the right to inspect any appropriate site or premises occupied by the Contractor, or any appropriate records or safety plans held by the Contractor. (v) The Contractor shall be obliged to report forthwith to the Employer and Engineer any investigation, complaint or criminal charge which may arise as a consequence of the provisions of the Act and Regulations, pursuant to work performed in terms of this Contract, and shall, on written demand, provide full details in writing, to the Employer and Engineer, of such investigation, complaint or criminal charge. 4.3.2 The Contractor shall furthermore, in compliance with Occupational Health and Safety Act (85/1993): Construction Regulations, 2014 to the Act: (i) Acquaint himself with the requirements of the Employer's health and safety specification as laid down in regulation 7(1)(a) of the Construction Regulation 2014, and prepare a suitably and sufficiently documented health and safety plan as contemplated in regulation 7(1) of the Construction Regulation 2014 for approval by the Employer or his assigned agent. The Contractor's health and safety plan and risk assessment shall be submitted to the Employer for approval within fourteen (28) days after receiving a completed copy of the Agreement and shall be implemented and maintained from the Commencement of the Works. (ii) The Employer, or his assigned agent, reserves the right to conduct periodic audits, as contemplated in the Construction Regulations 2014, to ensure that the Contractor is compliant in respect of his obligations. Failure by the Contractor to comply with the requirements of these Regulations shall entitle the Engineer, at the request of the Employer or his agent, to suspend all or any part of the Works, with no recourse whatsoever by the Contractor for any damages incurred as a result of such suspension, until such time that the Employer or his agents are satisfied that the issues in which the Contractor has been in default have been rectified."
4.5.4	Add - The Contractor shall with specific reference to this clause communicate in writing with the GAMAGARA LOCAL MUNICIPALITY should he require to obtain materials under a Deed of Cession. The Contractor shall have no right whatsoever to claim against the GAMAGARA LOCAL MUNICIPALITY should the GAMAGARA LOCAL MUNICIPALITY reject the request or should the GAMAGARA LOCAL MUNICIPALITY delay in any way whatsoever the signing of the Deed of Cession or should the Cessionary fail to supply the materials as and when required by the Contractor. The responsibility for obtaining the correct quantities and quality of materials complying with requirements of the specifications and the safekeeping thereof shall remain at all times with the Contractor.
5.3.1	The Contractor shall commence executing the Works within fourteen (14) days of the Commencement Date. Add the following after "… Commencement date". The following documentation is to be provided by the Contractor before commencement of the actual works: • Health and Safety Plan as per Clause 4.3 • Initial Programme as per Clause 5.6 • Security or guarantee as per Clause 6.2.1 • Insurance as per Clause 8.6 • Quality Assurance Plan as per Clause B1205 (Standard Specifications)
5.3.2	The time to submit the documentation required before commencement with Works execution is 14 days.
5.8.1	Non-working days are Sundays. Special Non-working days are the following statutory public holidays as declared by National or Regional Government:

<table>
<tr><td>Clause</td><td></td></tr>
<tr><td>1.1.1.12</td><td>“Day” shall mean a calender day.</td></tr>
<tr><td></td><td>New Year’s Day, Human Rights Day, Good Friday, Family Day, Freedom Day, Workers day, Youth Day, National Women’s Day, Heritage Day, Day of Reconciliation, Christmas Day and the Day of Goodwill including the construction industry year-end break.
The year-end break commences on the first working day after 12 December and ends on the first working day after 4 January of the next year.</td></tr>
<tr><td>5.12</td><td>Add the following sub-clause “On written motivation and with specific reference to this clause and in exceptional circumstances for delays neither attributable nor within the control of the Employer, the Employer may grant extension of time without compensation for fixed and time related General Items</td></tr>
<tr><td>5.6.1</td><td>Programme to be delivered to the Engineer within 14 days of Commencement Date.
Add – 5.6.6 “Any claim for extension of time shall be based on realistic detailed programmes which shall be kept up to date at regular intervals. Programmes must show all resources and any float or risk allowance. The Contractor shall supply to the Engineer a Works programme revised (if necessary) or not at least once every month.”</td></tr>
<tr><td>5.9</td><td>Engineer shall deliver to the Contractor 3 copies of all approved drawings and revisions thereof and instructions. Cost of additional copies to be for the account of the Contractor</td></tr>
<tr><td>5.12.2</td><td>DELETE THE FIRST TWO LINES AND REPLACE WITH:
“The circumstances are …”</td></tr>
<tr><td>5.12.3</td><td>BETWEEN THE WORDS “the Contractor shall" AND" be paid" IN SUBCLAUSE (4) INSERT THE FOLLOWING:
", subject to such additional provisions (if any) set out in the Scope of Works,"</td></tr>
<tr><td>5.13.1</td><td>The penalty for failing to complete the Works by Completion Date is R5000 per Day.
The penalty for not reaching the job creation as bidded is R 100 per person-day. Person-day is calculated as the total of person-month multiplied by 21.</td></tr>
<tr><td>6.2.1</td><td>Add - Guarantee shall be in the form of cash, a certified cheque, or a bank guarantee from a banking institution registered in terms of the Bank Act, 1990(Act No 94 of 1990) or from an insurer registered in terms of the Insurance Act, 1943 (Act No 27 of 1943).Where bidders in category A cannot rise the required surety of 2.5% ,and it is feasible to deduct the amount from the first payment certificate, such concession may be granted.
Guarantees will be as follows:
<table>
<tr><td>CATEGORY</td><td>PROJECT VALUE</td><td>PERFORMANCE GUARANTEE</td></tr>
<tr><td>A</td><td><R 500000</td><td>2.5%</td></tr>
<tr><td>B</td><td>R 500 001 –R 1000 000</td><td>5%</td></tr>
<tr><td>C</td><td>R 1 000 000-R 2000 000</td><td>7.5%</td></tr>
<tr><td>D</td><td>>R 2 000 000</td><td>10%</td></tr>
</table>
Guarantees from Banks, Financial institutions are to be supplied as per “Form of Guarantee” attached to this document.
The Guarantee is to be delivered to the Employer within 14 (Fourteen) days after the appointment, before any work can commence.
The contract will be terminated at any given time should the employer have proof that the submitted documents deemed to be fraudulent.</td></tr>
<tr><td>6.5.1.3</td><td>The percentage allowances to cover all charges for the Contractor's and subcontractor's profits, timekeeping, clerical work, insurance, establishment, superintendence and the use of hand tools is provided elsewhere in the Contract</td></tr>
<tr><td>6.8.2</td><td>Contract Price Adjustment: Is Not Applicable</td></tr>
<tr><td>6.8.3</td><td>The following are special materials: NIL
The basis for price adjustment for special materials is as follows:
Not applicable</td></tr>
<tr><td>6.9.1.3</td><td>ADDITIONAL SUB-CLAUSE:
“All temporary Works owned by the Contractor and brought on to the Site for the purposes of the Contract.”</td></tr>
<tr><td>6.10.1.5</td><td>The percentage advance on materials on Site not yet built into the Permanent Works is eighty percent (80%).</td></tr>
<tr><td>6.10.1.9</td><td>Add new subclause 6.10.1.9:
"Payment for the labour-intensive component of the works
Payment for work 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 work shall not relieve the Contractor in any way from his obligations either in contract or in delict."</td></tr>
</table>

Clause	
1.1.1.12	"Day" shall mean a calender day.
6.11	Delete this clause and any reference thereto.
6.12	Add the following to Clause 6.12: Notwithstanding the provision of a performance guarantee in terms of Clause 6.2.1, interim payments to the Contractors shall be subject to retention by the Employer of an amount of 10% of the said amounts due to the Contractor, with no limit. The limit of retention money for the defects Liability Period shall be 5% of the Contract Price, including payment for contingencies and Contract Price Adjustment. A guarantee in lieu of retention is not permitted. The limit of retention money is 10% of the Contract Price, including allowances for contingencies and Contract Price Adjustment, if provision is made for a Contract Price Adjustment in the tender data. The limit of retention money for the Defects Liability Period shall be 5% of the Contract Price
7.5.3	*ADD THE FOLLOWING:* "Provided further that if the Works or excavation(s) are not ready for examination or are incorrect or are not in accordance with the drawings or specifications, the fruitless expenditure so incurred by the Engineer will be for the Contractor's account. In such case a further adequate notice shall be given by the Contractor to the Engineer. Deductions for the above fruitless expenditure will be made from the Contractor's monthly statements for payment"
7.8	The Defects Liability Period is twelve (12) calendar months after completion of the whole contract.
8.3.1	Delete the words " or indirectly" from the second line
8.6.1.2	A Coupon Policy for Special Risks is to be issued. (To be approved by the Employer's Claims Management Services Provider)
8.6.3	Add - Insurance cover for subcontractors is deemed to have been included in the insurance cover of the main Contractor."
8.6.1.1.2	The value of materials supplied by the Employer to be included in the insurance sum is R Nil
8.6.1.3	The limit of the liability insurance is R2 000 000,00 for any single claim – the number of claims to be unlimited during the construction and Defects Liability period.
8.6.1.1.3	The amount to cover professional fees for repairing damage and loss to be included in the insurance sum is 5% of Contract Price.
8.6.1.5	The following additional and varied insurances are required: ***Not applicable***
8.6.1.6	*ADDITIONAL SUB-CLAUSE:* "Notwithstanding the provisions of the General Conditions of Contract and without limiting the obligations liabilities or responsibilities of the Contractor in any way whatsoever including but not limited to the provision by the Contractor of any insurances, the Contractor will effect and maintain for the duration of the Contract until the date of the Certificate of Completion - (i) Contract Works Insurance; (ii) Public Liability Insurance; (iii) A Coupon for Special Risk Insurance (SASRIA) issued by the South African Special Risk Insurance Association; in the name of the Contractor (including all Sub-Contractors) and Municipality's insurable interest must be noted in the policy. A copy of the Contract Works Insurance, Public Liability Insurance policies and Coupon for Special Risk Insurance as arranged by the Contractor, must be submitted to Municipality. The Insurances will be maintained from the Commencement Date to the date of the Certificate of Completion.The Contractor shall effect and pay for any supplementary insurance, which in its own interest it may deem necessary. The Contractor shall insure that all potential and appointed Sub-contractors are aware of the whole content of this clause, and enforce the compliance by Sub-contractors with this clause where applicable. Any clarification of the scope of cover to be provided by the Policies arranged by the Contractor or the Municipality should be obtained from the Municipality's Broker.

Clause	
1.1.1.12	"Day" shall mean a calender day.
	The Contractor and its Sub-contractors are deemed to have full knowledge of the terms and conditions under which the required Insurance cover is issued. "
10	Add - "Written claims must fully comply with the requirements of this clause. Claims must clearly specify in terms of which clause sub/clause the claim is made. Claims must be made strictly within the time limits specified."
10.1.2	Delete this clause and any reference thereto.
10.3	Disputes are be settled in terms of the following: Resolution of disputes, objections, complaints and queries (1) The accounting officer must appoint an independent and impartial person, not directly involved in the supply chain management processes – (a) to assist in the resolution of disputes between the Employer and other persons regarding - (i) any decisions or actions taken in the implementation of the supply chain management system; or (ii) any matter arising from a contract awarded in the course of the supply chain management system; or (b) to deal with objections, complaints or queries regarding any such decisions or actions or any matters arising from such contract. (2) The accounting officer, or another official designated by the accounting officer, is responsible for assisting the appointed person to perform his or her functions effectively. (3) The person appointed must – (a) strive to resolve promptly all disputes, objections, complaints or queries received; and (b) submit monthly reports to the accounting officer on all disputes, objections, complaints or queries received, attended to or resolved.(4) A dispute, objection, complaint or query may be referred to the relevant provincial treasury if – (a) the dispute, objection, complaint or query is not resolved within 60 days; or (b) no response is forthcoming within 60 days. (5) If the provincial treasury does not or cannot resolve the matter, the dispute, objection, complaint or query may be referred to the National Treasury for resolution. (6) This paragraph must not be read as affecting a person's rights to approach a court at any time.
10.7	Disputes are to be settled in terms of the conditions as set out above, under 10.3
Contract price adjustment schedule	Notes: Item 3 to be deleted and replaced with" No price adjustment is applicable after Due Completion date" Item 5.-Delete Cession amounts paid by the AFRIMAT DEMANENG PROPRIETARY LIMITED are not subject to price adjustment.

PART 2: DATA PROVIDED BY THE CONTRACTOR

Clause	
1(1)(h) 1(2)	The Contractor is …… The Contractor's address for receipt of communications is: Physical address: Postal address: ……. …… ……. …… ……. …… Telephone: …… Fax: …….. E-mail: ……
37(2)(b)	The percentage allowances to cover all charges for the Contractor's and subcontractor's profits, timekeeping, clerical work, insurance, establishment, superintendence and the use of hand tools is ……%
46(3)	The rate for special materials, exclusive of value-added tax (VAT) are: ……

C1.3 FORM OF GUARANTEE

PRO FORMA
TENDER NO. 2020/48

WHEREAS GAMAGARA LOCAL MUNICIPALITY (hereinafter referred to as "the Employer") entered into, a Contract with_____(hereinafter called "the Contractor") on the _____ day of _____ 20____for the construction of _____at

_____

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

AND WHEREAS _____has/have at the request of the Contractor, agreed to give such guarantee;

NOW THEREFORE WE, _____ do hereby guarantee and bind ourselves jointly and severally as Guarantor and Co-principal Debtors to the Employer under renunciation of the benefits of division and excursion for the due and faithful performance by the Contractor of all the terms and conditions of the said Contract, subject to the following conditions:

1. The Employer shall, without reference and/or notice to us, have complete liberty of action to act in any manner authorized and/or contemplated by the terms of the said Contract, and/or to agree to any modifications, variations, alterations, directions or extensions of the Completion Date of the Works under the said Contract, and that its rights under this guarantee shall in no way be prejudiced nor our liability hereunder be affected by reason of any steps which the Employer may take under such Contract, or of any modification, variation, alterations of the Completion Date which the Employer may make, give, concede or agree to under the said Contract.

2. This guarantee shall be limited to the payment of a sum of money

3. The Employer shall be entitled, without reference to us, to release any guarantee held by it, and to give time to or compound or make any other arrangement with the Contractor.

4. This guarantee shall remain in full force and effect until the issue of the Certificate of Completion in terms of the Contract, unless we are advised in writing by the Employer before the issue of the said Certificate of his intention to institute claims, and the particulars thereof, in which event this guarantee shall remain in full force and effect until all such claims have been paid or liquidated.

5. Our total liability hereunder shall not exceed the sum of

   _____ (R_____)

The Guarantor reserves the right to withdraw from this guarantee by depositing the Guaranteed Sum with the beneficiary, whereupon the Guarantor's liability hereunder shall cease.

We hereby choose our address for the serving of all notices for all purposes arising here from as

_____

IN WITNESS WHEREOF this guarantee has been executed by us at _____

on this _____ day of _____ 20_____

As witnesses:

1. _____ Signature _____

2. _____ Signature _____

Duly authorized to sign on behalf of_____

Address _____

_____

C1.4 AGREEMENT IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993)

THIS AGREEMENT made at _____

on this the _____ day of _____ in the year _____

between **GAMAGARA LOCAL MUNICIPALITY** (hereinafter called "the **Employer**") of the one part, herein represented by

in his capacity as _____

and

_____

(hereinafter called "the Mandatory") of the other part, herein represented by

_____

in his capacity as _____

WHEREAS the Employer is desirous that certain works be constructed, viz GROUNDWATER SUPPLY IN OLIFANTSHOEK: CONSTRUCTION OF BULK LINK LINE FROM 4 BOREHOLES TO 7ML RESEVIOR: PHASE 3 and has accepted a Bid by the Mandatory for the construction, completion and maintenance of such Works and whereas the Employer and the Mandatory have agreed to certain arrangements and procedures to be followed in order to ensure compliance by the Mandatory with the provisions of the Occupational Health and Safety Act, 1993 (Act 85 of 1993);

NOW THEREFORE THIS AGREEMENT WITNESSETH AS FOLLOWS:

1 The Mandatory shall execute the work in accordance with the Contract Documents pertaining to this Contract.

2 This Agreement shall hold good from its Commencement Date, which shall be the date of a written notice from the Employer or Engineer requiring him to commence the execution of the Works, to either

(a) the date of the Final Approval Certificate issued in terms of Clause 5.16 of the General Conditions of Contract 2015 3rd Edition (hereinafter referred to as "the GCC"),

(b) the date of termination of the Contract in terms of Clauses 9 of the GCC 2015 3rd Edition.

3 The Mandatory declares himself to be conversant with the following:

(a) All the requirements, regulations and standards of the Occupational Health and Safety Act (Act 85 of 1993), hereinafter referred to as "The Act", together with its amendments and with special reference to the following Sections of The Act:

(i) Section 8 : General duties of employers to their employees;

(ii) Section 9 : General duties of employers and self-employed persons to persons other than employees;

(iii) Section 37 : Acts or omissions by employees or mandataries, and

(iv) Subsection 37(2) relating to the purpose and meaning of this Agreement.

(b) The procedures and safety rules of the Employer as pertaining to the Mandatory and to all his subcontractors.

4 In addition to the requirements of Clause 3.2.4 of the GCC and all relevant requirements of the above-mentioned Volume 3, the Mandatory agrees to execute all the Works forming part of this Contract and to operate and utilise all machinery, plant and equipment in accordance with the Act.

5 The Mandatory is responsible for the compliance with the Act by all his subcontractors, whether or not selected and/or approved by the Employer.

6 The Mandatory warrants that all his and his subcontractors' workmen are covered in terms of the Compensation for Occupational Injuries and Diseases Act, 1993 which cover shall remain in force whilst any such workmen are present on site. A letter of good standing from the Compensation Commissioner to this effect must be produced to the Employer upon signature of the agreement.

7 The Mandatory undertakes to ensure that he and/or subcontractors and/or their respective employers will at all times comply with the following conditions:

(a) The Mandatory shall assume the responsibility in terms of Section 16.1 of the Occupational Health and Safety Act. The Mandatory shall not delegate any duty in terms of Section 16.2 of this Act without the prior written approval of the Employer. If the Mandatory obtains such approval and delegates any duty in terms of section 16.2 a copy of such written delegation shall immediately be forwarded to the Employer.

(b) All incidents referred to in the Occupational Health and Safety Act shall be reported by the Mandatory to the Department of Labour as well as to the Employer. The Employer will further be provided with copies of all written documentation relating to any incident.

(c) The Employer hereby obtains an interest in the issue of any formal inquiry conducted in terms of section 32 of the Occupational Health and Safety Act into any incident involving the Mandatory and/or his employees and/or his subcontractors.

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

SIGNED FOR AND ON BEHALF OF THE GAMAGARA LOCAL MUNICIPALITY :

WITNESS 1 .....…….

NAME 1 .....…….
(IN CAPITALS)

SIGNED FOR AND ON BEHALF OF THE MANDATORY:

WITNESS 1 .....……. .

NAME 1 .....…….
(IN CAPITALS)

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

The signatory for the company that is the Contractor in terms of the above-mentioned Contract and the Mandatory in terms of the above-mentioned Act shall confirm his or her authority thereto by attaching to this page a duly signed and dated copy of the relevant resolution of the Board of Directors.

An example is given below:

"By resolution of the Board of Directors passed at a meeting held on _____ 20……,

Mr/Ms _____ whose signature

appears below, has been duly authorised to sign the AGREEMENT in terms of THE OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT 85 of 1993) on behalf of _____

SIGNED ON BEHALF OF THE COMPANY : _____

IN HIS/HER CAPACITY AS : _____

DATE : _____

SIGNATURE OF SIGNATORY : _____

WITNESS 1 .....……..

NAME *1 .....…….. .*
(IN CAPITALS)

Note: Health & Safety File to be submitted to Safety Consultant and be approved before any work can commence.

The minimum amount of Local Labourers that will be appointed during this project is 10.

C.1.5 : Occupational Health and Safety Act **Specifications for Construction**

(To be prepared by the Professional Team – See page 181) ……

OHSS Item No.	OHSS Requirement	OHSA Requirement	Submission Date
2.3.1	Notification of Intention to Commence Construction / Building work. This will include relevant permits require according to Construction Regulations 2014	GAR 14 Complete Schedule 1 (Construction Regulations)	Before commencement on site.
2.3.2	Assignment of Responsible Person to Supervise Building Work	All relevant appointments, as per OHSA.	Before commencement on site.
2.3.3	Competency for Responsible Persons	Client Requirement	Before commencement on site.
2.3.4	Compensation of Occupational Injuries and Diseases Act (COIDA) 130 OF 1993	COIDA Requirement	Before commencement on site.
2.3.5	Occupational Health and Safety Policy	S 7 / Client Requirement	At tender stage
2.3.6	Health and Safety Organogram.	Client Requirement	Before commencement on site.
2.3.7	Pre-Hazard Identification and Risk Assessment	Client Requirement	Within 10 days of receipt of letter of acceptance from the Client
2.3.8	Health & Safety Representative.	Section 17	Submit as soon as there are more than 20 employees on site

Abbreviations:

GSR: General Safety Regulations **GAR:** General Administrative Regulations

S: Section of the Occupational Health and Safety Act 85 of 1993

Acknowledgement:

I,_____representing

_____ Contractor / Agent have satisfied myself with the content of the Occupational Health and Safety Specification (OHSS) and shall ensure that the Contractor and his / her personnel comply with all relevant obligations in respect thereof.

_____ _____

Signature of Contractor Date

_____ _____

Signature of Agent Date

Comments:

C.1.6: Goal Declaration Form

1. Executive Summary

Name of the tenderer:……..……

Business legal Status:
……..……
(Sole/ Pty /cc)

Number of shareholders:……..……

Key Person:
……..……

Contact numbers:
……
(Office no. + Cell)

Email Address:……..……..……......

Average Business turnover:…….....

Total Overall Empowerment score (If any)……

Level of contribution……..……

Contribution acceptable……
(Yes / No)

3. Black Economic Empowerment (BEE) Indicators

3.1 Ownership

Name	Equity %	Black Status (Yes/No)	Gender	Active (Yes/No)

3.2 Management & Control

Name	Position	Black (Yes/No)	Qualification/ Experience	Gender

3.3 Employment Equity
(Kindly state in each category the number)

Total	Black Male	Black Female	White Male	White Female	Disabled

3.4 Skills Development
(Staff development plan)

Training / Courses	Black Male	Black Female	White Male	White Female	Disabled

3.5 Enterprise Development
(SME support initiatives)

Contract Number	Description	Value	Status

3.6 Preferential Procurement

Total Expenditure	Amount spent on BEE Companies

3.7 Residual

(Social responsibility programme, sponsor/donations Community based projects funded by the company,
local presence)

Social Responsibility	Description	Value

4. Previous Exposure / Repeat Appointment

(Any prior engagement with the ELIDZ)

Contract Number	Description	Value	Status

I / We undertake to promptly respond to points of clarification regarding my / our Goals, failing
which I / we understand that my / our Tender may be rejected on the grounds of being incomplete.

Signature : .....

Name : .....

Duly authorised to sign on behalf of : .....

Address : .....
.....
.....

Telephone : .....

Fax : .....

Date : .....

DEPARTMENT NAME: **PUBLIC WORKS AND BASIC SERVICES**

TENDER NO: **2020/48**

FOR: **GROUNDWATER SUPPLY IN OLIFANTSHOEK: CONSTRUCTION OF BULK LINK LINE FROM 4 BOREHOLES TO 7ML RESEVIOR: PHASE 3**

.

C2.1 PRICING INSTRUCTIONS

1 The General Conditions of Contract, the Contract Data, the Specifications (including the Project Specifications) and the Drawings shall be read in conjunction with the Bill of Quantities. In case of discrepancies between the General Conditions of Contract, the Contract Data, the Specifications (including the Project Specifications) and the Drawings, the Contract Data shall have preference over the General Conditions of Contract, Specifications and Drawings. The Specifications shall have preference over the Drawings".

2 The Bill comprises items covering the Contractor's profit and costs of general liabilities and of the construction of Temporary and Permanent Works.

Although the Bidder is at liberty to insert a rate of his own choosing for each item in the Bill, he should note the fact that the Contractor is entitled, under various circumstances, to payment for additional work carried out and that the Engineer is obliged to base his assessment of the rates to be paid for such additional work on the rates the Contractor inserted in the Bill.

Clause 8 of each Standardized Specification, and the measurement and payment clause of each Particular Specification, read together with the relevant clauses of the Project Specifications, all set out which ancillary or associated activities are included in the rates for the specified operations.

3 Description in the Bill of Quantities are abbreviated and may differ from those in the Standardized and Project Specifications. No consideration will be given to any claim by the Contractor submitted on such a basis

4 Unless stated to the contrary, items are measured net in accordance with the Drawings without any allowance having been made for waste.

5 The amounts and rates to be inserted in the Bill of Quantities shall be the full inclusive amounts to the Employer for the work described under the several items. Such amounts shall cover all the costs and expenses that may be required in and for the construction of the work described, and shall cover the costs of all general risks, profits, taxes (but excluding value-added tax), liabilities and obligations set forth or implied in the documents on which the Bid is based.

6 The quantities set out in the schedule of quantities are only approximate quantities. The quantities of work finally accepted and certified for payment, and not the quantities given in the schedule of quantities, will be used to determine payments to the contractor.

7 An amount or rate shall be entered against each item in the Bill of Quantities, whether or not quantities are stated. An item against which no amount or rate is entered will be considered to be covered by the other amounts or rates in the Bill.

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

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

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

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

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

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

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

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

mm	=	millimetre
m	=	metre
km	=	kilometre
km-pass	=	kilometre-pass
m^2	=	square metre
m^2-pass	=	square metre-pass
ha	=	hectare
m^3	=	cubic metre
m^3-km	=	cubic metre-kilometre
kW	=	kilowatt
kN	=	kilonewton
kg	=	kilogram
t	=	ton (1 000 kg)
%	=	per cent
MN	=	meganewton
MN-m	=	meganewton-metre
PC Sum	=	Prime Cost Sum
Prov Sum	=	Provisional Sum

Item No	Payment Clause	Short Description	Unit	Quantity	Rate	Amount R c
	SABS 1200A	**SCHEDULE 1 : PRELIMINARY AND GENERAL**				
1.1	8.3	FIXED-CHARGE ITEMS				
1.1.1	8.3.1	Contractual Requirements	Sum	1,0		
1.1.2	8.3.2	Establish Facilities on the Site :				
1.1.2.1	8.3.2.1	a) Facilities for Engineer (SANS 1200 AB)				
a)		Boardroom for meetings (12 people) including conference table and chairs	Sum	1		
b)		One furnished office with carport including aircon and electricty as per details in project specification	Sum	1		
c)		Safety equipment, incl hard hat, removable revolving orange light for vehicle & reflective vest	Sum	1		
d)		One (1) Project Name Boards	Sum	1		
e)		Survey equipment	Sum	1		
		b) Facilities for Contractor				
f)		Offices and storage sheds	Sum	1		
g)		Workshops	Sum	1		
h)		Laboratories	Sum	1		
i)		Living accommodation	Sum	1		
j)		Ablution and latrine facilities	Sum	1		
k)		Tools and equipment	Sum	1		
l)		Water supplies, electric power and communications	Sum	1		
m)		Dealing with water (Subclause 5.5)	Sum	1		
n)		Access (Subclause 5.8)	Sum	1		
o)		Transport arrangements for labour from all communities to and from workplace to central collection / dropoff point	Sum	1		
1.1.3	8.3.3	Other fixed-charge obligations	Prov Sum	1	-	
					-	
a)	8.3.3	Attendance for local subconstractors and targeted enterprise use and development including monitoring, skills transfer, quality assurance and support	Sum	1		
b)		Cellular phone for the sole use of the Employer's Agent or his Representative as per PSAB 4.2	PC Sum	1	2 000,00	R 2 000,00
c)		Computer facilities as per PSAB 4.3	PC Sum	1	5 000,00	R 5 000,00
`						
Carried forward / …						

Brought forward / …						
1.1.4	8.3.4	Remove Engineer's and Contractor's Site establishment on completion	Sum	1		
1.2	8.4	TIME-RELATED ITEMS				
1.2.1	8.4.1	Contractual Requirements	Sum	1		
1.2.2	8,4.2	Operate and maintain facilities on the Site:			-	
a)	8.4.2.1	a) Facilities for Engineer for duration of construction (SANS 1200 AB)				
b)		Boardroom for meetings (12 people) including conference table and chairs (As per PSAB 3.1)	mon	4		Rate Only
c)		One furnished office with carport including aircon and electricty as per details in project specification	mon	4		Rate Only
d)		Safety equipment, incl hard hat, removable revolving orange light for vehicle & reflective vest	mon	4		Rate Only
e)		Two (2) Name Boards (As per PSAB 3.1)	mon	4		
f)		Survey Equipment (As per PSAB 4.2)	mon	4		
g)		b) Facilities for Contractor for duration of construction, except where otherwise stated				
h)		Offices and storage sheds	mon	4		Rate Only
i)		Workshops	mon	4		Rate Only
j)		Laboratories	mon	4		Rate Only
k)		Living accommodation	mon	4		Rate Only
l)		Ablution and latrine facilities	mon	4		Rate Only
m)		Tools and equipment	mon	4		Rate Only
n)		Water supplies, electric power and communications	mon	4		Rate Only
o)		Dealing with water (Subclause 5.5)	mon	4		Rate Only
p)		Access (Subclause 5.8)	mon	4		Rate Only
q)		Transport arrangement for local labour	mon	4		Rate Only
1.2.3	8.4.3	Supervision	mon	4		
1.2.4	8.4.4	Company and head office overhead costs	mon	4		Rate Only
1.2.5	8.4.5	Other time-related obligations	mon	4		R -
1.2.6	8.4.6	Attendance for local subconstractors and targeted enterprise use and development including monitoring, skills transfer, quality assurance and support	Prov Sum	1	20 000,00	**R 20 000,00**
		Overheads, charges and profit on item 1.2.6	%	20000		
1.2.7		Airtime for CLO as per PSAB 4.1	mon	4		
1.2.8		Computer facilities as per PSAB 4.3	mon	4		
Carried forward / …						

Brought forward / …							
1.3	8.5	SUMS STATED PROVISIONALLY BY ENGINEER					
		For work to be done by Contractor and valued in terms of Clause 6.6 of conditions of contract					
a)		a) Payment to the Surveyor for the setting out PI's and additional benchmarks	Prov Sum	1	15 000,00	R	15 000,00
b)		b) Overheads, charges and profit on item 1.3a	%	15000			
c)		c) Training of labourers	Prov Sum	1,0	20 000,00	R	20 000,00
d)		d) Overheads, charges and profit on item 1.3c	%	20000			
e)		e) Additional testing required by the engineer	Prov Sum	1	12 000,00	R	12 000,00
f)		f) Overheads, charges and profit on item 1.3e	%	12000			
i)		i) Provisional cost for payment of salaries to client nominated engineering students	Prov Sum	1			Rate Only
j)		j) Overheads, charges and profit on item 1.3i	%	Rate Only			Rate Only
k)		k) Provisional cost for payment of CLO salary for contract duration (R6,000/month provision)	Prov Sum	1,00	24 000,00	R	24 000,00
l)		l) Overheads, charges and profit on item 1.3k	%	24000			
m)		m) Provisional cost for payment of PSL for contract duration (R2,000/month provision)	Prov Sum	1	12 000,00		Rate Only
n)		n) Overheads, charges and profit on item 1.3m	%	12000			Rate Only
o)		For work to be done by a selected sub-contractor (or the Employer)					
p)		a) Electricity installation (selected sub-contractor)	Prov Sum	1	15 000,00	R	15 000,00
q)		b) Overheads, charges and profit on item 1.3p	%	15000			
r)		c) Instrumentation, Control and electrification installation at boreholes	Prov Sum	1	20 000,00	R	20 000,00
s)		d) Overheads, charges and profit on item 1.3r	%	20000			
1.4		PRIME COST ITEMS					
a)		a) Material manufacture and delivery inspectorate & additional tests by Engineer	PC Sum	1	10 000,00	R	10 000,00
b)		b) Overheads, charges and profit on item 1.4a	%	10000			
Carried forward / …							

Brought forward / …							
c)		c) Reimbursement for any other specialist work required by the client identified during construction	PC Sum	1	10 000,00	R	10 000,00
d)		d) Overheads, charges and profit on item 1.4c	%	10 000,00			
1.5		TEMPORARY WORKS					
a)		Deal with traffic and maintain road (or accommodation of traffic)	Sum	1	10 000,00	R	10 000,00
		Existing services					
b)		Supply (or hire) of specialist equipment for the detection of underground services (Prov)	Prov sum	1	10 000,00	R	10 000,00
c)		Overheads, charges and profit on item 1.5b	%	10000			
d)		The use of equipment for detection	day	7			
e)		Excavate by hand in soft material to expose .existing services	m3	100			
f)		Temporary protection of existing services	sum	1			
	PSA 8.1.2.4	PAYMENTS TO SERVICE AUTHORITIES					
g)		Payments to Service Authorities	Prov Sum	1	10 000,00	R	10 000,00
h)		Overheads, charges and profit on item 1.5g	%	10000			
1.6		OCCUPATIONAL HEALTH AND SAFETY REQUIREMENTS					
a)	PSHSS 2.1	Safety Precautions for open trenches	sum	1			
b)	PSHSS 2.2	Health and Safety Requirements (incl permit of work application)	sum	1,0			
c)	PSHSS 2.3	Health and Safety Plan	sum	1			
d)	PSHSS 2.4	Health and Safety File	sum	1,0			
e)	PSHSS 2.5	Health and Safety Medicals (Entry Medicals)	sum	1			
f)	PSHSS 2.6	Health and Safety Medicals (Exit Medicals)	Sum	1			
g)	PSHSS 2.7	Provisional Sum for the contractor to provide PPE to all local part time labourers for the entire contract period as required in terms of the OHS specification. PPE to be replaced every 6 months in case where labourers are employed for periods longer than 6 months. All labourers to received own PPE.	Sum	1			
h)	PSHSS 2.8	Overheads, charges and profit on item 1.6g	%	-			
i)	PSHSS 2.9	Penalty to be deducted for non-compliance with regard to OHS requirements	no				rate only
1.7	PSEMS 21	ENVIRONMENTAL COMPLIANCE					
a)	PSEMS 21.1	Compiling & Complying with the Environmental Management Plan	sum	1,0			
b)	PSEMS 21.2	Penalty for non-compliance with requirements	no				rate only
TOTAL CARRIED FORWARD TO SUMMARY							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
	SABS 1200A	**SCHEDULE 2 : DAYWORKS**				
2	8,7	**DAYWORKS**				
2.1		**LABOUR**				
		a) Contractor's Representative	/hour	5		
		b) Surveyor	/hour	8		
		c) Qualified artisan	/hour	8		
		d) Qualified Mechanic	/hour	5		
		e) Foreman, leader-hand(___ h work day)	W/day	3		
		f) Semi-skilled labourer (___ hour work day)	W/day	5		
		g) Labourer (___ hour work day)	W/day	10		
2.2		**PLANT HIRE : WORK RATES ON SITE**				
2.2.1		Tipper truck				
a)		a) 5,5 m³	/hour	5		
2.2.2		Flatbed truck				
a)		a) 7 t	/hour	13		
2.2.3		LDV	/km	75		
2.2.4		Tractor loader backhoe (TLB) ____ m³ bucket (specify type) _____	/hour	13		
2.2.5		Pedestrian roller				
a)		a) BW 65	/hour	15		
2.2.6		Concrete mixer (specify)				
a)		a) (small, towable)	/hour	10		
2.2.7		Wheelbarrow Haul				
a)		a) 0 - 100m	0.06m³	10		
b)		b) 101 - 200m	0.06m³	15		
2.3		**MISCELLANEOUS**				
2.3.1		Compressor with capacity of 125 cfm	/hour	10		
2.3.2		Waterpump with 40 mm outlet (diesel driven)	/hour	15		
2.3.3		Welding unit (300 Amp)	/hour	10		
2.3.4		1,5 kVA diesel-driven generator set	/hour	8		
TOTAL CARRIED FORWARD						

						SCHEDULE 2 : DAYWORKS
ITEM NO	PAYMENT	DESCRIPTION	UNIT	SCHED QTY	RATE	AMOUNT R
BROUGHT FORWARD						-
2,4		**PLANT HIRE : TRANSPORT COST TO AND FROM SITE**				
		(Distance shall be measured one way only. Tendered rates shall include for transport both to and from site)				
2.4.1		Low-bed truck (suitable for the largest piece of equipment above)	/km	25		
2.4.2		Tipper truck				
		a) 5,5 m³	/km	25		
2.4.3		Flat-bed truck				
		a) 7 ton	/km	25		
2.4.4		LDV	/km	75		
2.4.5		Concrete mixer				
		a) Small (towable)	/km	88		
2.4.6		Other (specify)	/km	63		
2,5		**LABOUR BASED**				
		a) Pick	/day	50		
		b) Shovel	/day	38		
		c) Bucket (± 20 l)	/day	38		
		d) Wheelbarrow	/day	38		
2,6		**INDUSTRY STANDARD SKILLS TRAINING**				
		In-service industry standard skills training of local residents employed through the labour desk. Rates tendered should include for full compensation for the Contractor's time, subsistence and travelling, overhead charges and profits, as well as for all training materials, consumables, tools and equipment that may be required for such skills training.				
		The Contractor will be paid for those hours during which properly supervised skills training actually takes place, on the instruction of the Engineer.				
a)		a) Training of skilled workers in industry recognised trades	/hour	0		
b)		b) Training of assistants to skilled workers in industry recognised trades.	/hour	0		
c)		c) Training of team leaders	/hour	0		
d)		d) Training of people on basic maintenance and operation	/hour	0		
2.7		**MATERIALS**				
2.7.1		Allow for Materials	Prov Sum	1,00	30 000,00	30 000,00
2.7.2		Overheads, charges and profit on item 2.7.1	%	30 000		
TOTAL CARRIED FORWARD TO SUMMARY						

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
		SCHEDULE 3 : PIPEWORK				
3	SABS 1200DB	**EARTHWORKS : PIPE TRENCHES**				
		Pipe Line from MBH02-BH12, MBH01 to Tee, MBH06 - BH12, MBH13 to Tee				
3.1		**SITE CLEARANCE**				
3.1.1	8.3.1(a)	Clear 3m wide vegetation and trees of girth up to 1m	m	3 175		
3.1.2	8.3.1(b)	Remove trees over 1 m and up to 2 m girth	No.	0		
3.2	8.3.2	**EXCAVATION**				
3.2.1		Excavate in all materials for trenches for pipes with a diameter between 20 mm and 200 mm, backfill compact and dispose of surplus/unsuitable material				
		Note : See different length categories				
		Up to 1,5m in depth for the following:				
3.2.1.1		a.) Total pipe line length (as per instruction) > 2000m	m³	3 175		
3.2.2	8.3.2(b)	Extra-over item3.3 incl. for excavation (provisional) in :				
3.2.2.1		a) Hard rock material	m³	635		
3.2.3		Extra over Item 3.3				
3.2.3.1		a) Backfill and compact by means of labour intensive construction methods in layers of 200mm compacted to 93% maximum dry density using material from excavation	m³	2 220		
3.2.3.2	8.3.3.1(a)	Imported backfill materials from designated borrow pits (Only if approved by Engineer)	m³	1 270		
3.2.4	8.3.3.2	Opening up and closing down of designated borrow pit	Sum	1		
3.2.5	8.3.3.3	Compaction in road reserves	m³	10		
3.2.6	8.3.3.4	Overhaul :				
3.2.6.1		a) Limited overhaul	m³	635		
3.2.6.2		b) Long overhaul	m³.km	3 175		
3.3		**FINISHING**				
3.3.1	8.3.6.1	Reinstate road surfaces complete with:				
3.3.1.1		a) Gravel	m²	10		
3.3.1.2		b) 30mm premix	m²	10		
3.3.1.3		b) Disposal of surplus material by means of labour intensive construction methods within 20m from the source of spoil utilising wheel barrows	m³	5		
3.3.1.4	8.3.2(c)	Excavate unsuitable material from trench bottom and dispose thereof within the freehaul distance (Provisional)	m³	64		
Carried forward / ...						

Brought forward / …						
	SABS 1200LB	**BEDDING (PIPES)**				
3.4		**PROVISION OF BEDDING**				
3.4.1	8.2.1	Provision of bedding material from trench excavations				
3.4.1.1		a) Selected granular material	m³	20		
3.4.1.2		b) Selected fill material	m³	50		
3.4.2		Provision of bedding material by importation from commercial sources				
3.4.2.1		a) Selected granular material	m³	370		
3.4.2.2		b) Selected fill material	m³	850		
3.2.4.5	8.2.4	Encasing of pipes in Class 19/20 concrete	m³	5		
3.2.5.6	8.2.5	Overhaul of material for bedding cradle and selected fill blanket	m³.km	10		
3.5	1200L	**PIPEWORK**				
3.5.1	8.2.1	Supply, lay, joint, bed, test and disinfect the following pipes complete with couplings to the relevant SABS standards including short lengths				
		uPVC pipes				
3.5.1.1		a) 160 Class 12	m			Rate Only
3.5.1.2		b) 90 Class 12	m	3 175		
3.5.1.3		c) 75 Class 12	m			Rate Only
3.6		**FITTINGS AND SPECIALS**				
	8.2.2	Extra over item 3.4 for supplying, installing, bedding and testing in PVC mains the following fittings and				
		Fittings of PVC, cast iron or aluminium				
3.6.1		**Bends 90 °**				
3.6.1.1		a) 160 mm Ø	No.			
3.6.1.2		b) 90 mm Ø	No.	3		
3.6.2		**Bends 45 °**				
3.6.2.1		c) 160 mm Ø	No.			
3.6.2.2		d) 90 mm Ø	No.	6		
3.6.3		**Bends 22 °**				
3.6.3.1		e) 160 mm Ø	No.			
3.6.3.2		f) 90 mm Ø	No.	4		
3.6.4		**Bends 11,25 °**				
3.6.4.2		g) 90 mm Ø	No.	9		
3.6.4.3		h) 75 mm Ø	No.	0		
3.6.5		**Tees**				
3.6.5.1		i) 160 x 90mm	No.	1		
3.6.5.2		j) 160 x 75 mm	No.			
3.6.5.3		k) 160 x 160 mm	No.			
3.6.5.4		l) 90 x 75 mm	No.			
3.6.5.5		m) 90 x 90 mm	No.	4		
3.6.5.6		n) 75 x 63 mm	No.			
3.6.5.7		o) 75 x 75 mm	No.			
3.6.5.8		p) 63 x 63mm	No.			
Total Carried forward / …						

Brought forward / …						
3.6.6		**Reducers**				
3.6.6.1		i) 75 x 63 mm	No.			Rate Only
3.6.6.2		b) 90 x 63 mm	No.			Rate Only
3.6.6.3		c) 90 x 75 mm	No.			Rate Only
3.6.6.4		d) 160 x 75 mm	No.			Rate Only
3.6.6.5		e) 160 x 90 mm	No.	1		
3.6.7		**End caps**				
3.6.7.1		a) 63 mm Ø	No.	0		Rate only
3.6.7.2		b) 75 mm Ø	No.	0		Rate only
3.6.7.3		c) 90 mm Ø	No.	2		
3.6.7.4		d) 110 mm Ø	No.	0		Rate only
3.6.7.5		e) 160 mm Ø	No.	0		Rate only
3.6.7.6		f) 200 mm Ø	No.	0		Rate only
3.6.7.7		g) 250 mm Ø	No.	0		Rate only
3.6.7.8		h) 315 mm Ø	No.	0		Rate only
3.6.8		**Double Socket**				
3.6.8.1		a) 75 mm Ø	No.			Rate Only
3.6.8.2		b) 90 mm Ø	No.			Rate Only
3.6.8.3		c) 110 mm Ø	No.			Rate Only
3.6.8.4		d) 160 mm Ø	No.			Rate Only
3.6.9		**Repair Coupling**				
3.6.9.1		a) 63 mm Ø	No.			Rate Only
3.6.9.2		b) 75 mm Ø	No.			Rate Only
3.6.9.3		c) 90 mm Ø	No.	3		
3.6.9.4		d) 110 mm Ø	No.			Rate Only
3.6.9.5		e) 160 mm Ø	No.			Rate Only
3.6.9.6		f) 200 mm Ø	No.			Rate Only
3.6.9.7		g) 250 mm Ø	No.			Rate Only
3.6.9.8		h) 315 mm Ø	No.			Rate Only
3,7		**VALVES**				
3.7.1		**Line valve assemblies.**				
	8.2.3	Extra over item 3.4 for supplying, installing, bedding and testing line valve assemblies, complete with valve chamber as per drawing complete cutting of pipes and couplings included				
3.7.1.2		a) 75 mm	No.			Rate Only
3.7.1.3		b) 90 mm	No.	10		
3.7.1.4		c) 160 mm	No.			Rate Only
3.7.2		**Air valve assemblies**				
		Extra over item 3.4 for supplying, installing and testing air valve assemblies as per Drawing complete (Including Chambers, Air valve complete)				
3.7.2.1		a) On 75 mm Ø main	No.		R 23 760,00	Rate Only
Total Carried forward / …						

Brought forward / …						
3.7.2.2		b) On 90 mm Ø main	No.	10		
3.7.2.3		c) On 160 mm Ø main	No.			Rate Only
		Scour valve assemblies				
3.7.3	8.2.3	Extra over item 3.4 for supplying, installing, bedding and testing scour valve assemblies as per Drawing complete (Including Valve chamber). Scour tee, cutting of pipes and couplings included.				
3.7.3.1		a) On 75 mm Ø main	No.			Rate Only
3.7.3.2		b) On 90 mm Ø main	No.	7		
3.7.3.3		c) On 160 mm Ø main	No.			Rate Only
3.7.4	8.2.3	Extra over item 3.4 for supplying, installing and testing Wafer type non-return valve assemblies as as per Drawing including cutting of pipes, fittings and valve complete, excluding chamber				
3.7.4.1		a) On 75 mm Ø main	No.			Rate Only
3.7.4.2		b) On 90 mm Ø main	No.	4		
3.7.4.3		c) On 160 mm Ø main	No.			Rate Only
3.8		**SUNDRIES**				
3.8.1	PSLB8.2.4	Encasing in Class 15/19 concrete	m³	5		
3.8.2		Position markers as per specification on drawing details and white washed each	No.	33		
		Thrust blocks as per typical details on specification				
3.8.3		a) Concrete Class 15/19	m³	2		
3.9		**SERVICES**				
	SABS 1200DB	Unknown Services (Provisional)				
3.9.1	8.3.8.1	Excavate by hand in soft material to expose existing services such as electrical cables e.t.c	m³	60		
3.10	SABS 1200DB	**EXISTING SERVICES (PROVISIONAL)**				
	8.3.5	Excavate in soft material to expose services (Depths up to 1,5 m)				
3.10.1		a) Services that intersect a trench	m	10		
3.10.2		b) Services that adjoin the trench	No.	2		
3.11		MANHOLES				
		Removal of existing manholes				
3.11.1		a) 750 mm Ø	No.	0		Rate Only
3.11.2		b) 1200 mm Ø	No.	0		Rate Only
3.12		ROAD CROSSINGS				
		a) Gravel Road crossings complete as per Drawing including the following sleeve pipes :				
3.12.1		i) 350 ND Concrete Class 100D	m	0		Rate Only
3.12.2		ii) 450 ND Concrete Class 100D	m	0		Rate Only
3.12.3		iii) 355 ND uPVC Class 12	m	0		Rate Only
Total Carried forward / …						

Brought forward / …						
		b) Tar Road crossings complete as per drawing including the following sleeve pipes				
3.12.4		i) 450 ND Concrete Class 100D	m	0		
3.12.5		ii) 600 ND Concrete Class 100D	m	0		
3.13	PSL 8.2.16	Cutting into and Connecting to Existing Pipelines	Sum	1		
TOTAL CARRIED FORWARD TO SUMMARY						

ITEM NO.	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		SCHEDULE 4 : NEW BOREHOLES IN OLIFANTSHOEK TO 7ML RESERVOIR				
4		**BOREHOLE PUMPS AND APPURTENANCES**				
4,1		**New borehole Installation: MBH06, MBH02, MBH01: = 2.5 l/s (V=108m^3/12h)**				
4.1.1		**Positive Displacement Pumps**				
a)		Supply material and erect precast concrete pump house complete with doors and locks as shown on drawing (dwg No. MCE-20-001-DET-006)	no	4		
b)		Supply material and erect concrete palisade security fencing, including access gate and lock as shown on drawings	m	160		
4.1.2		**Electric Motor Control Panel**				
a)		Supply and install control panel with all fittings required to operate pumps and motors efficiently, including 0-20 second delay timer and 0-24 hour timer according to DWA specifications				
b)		Supply and install elecrical control panel (size to suit the pump sets) complete with liquid level control (or no flow), pressure switch, lightning protection, auto/manual, volt and amp meter and cabling to electric motor	no	4		
c)		Supply and install borehole discharge pipework complete with flow meter, non return and pressure gauge, pressure switch, no flow switch/liquid level control				
d)		Dia 80 mm pipework	no	4		
e)		Extra Over Item for supply and install of Pressure Relief Valve to be replaced by Rate of Flow Valves	no	4		
f)		Supply and install new positive displacement pump, complete with columns (shafts, bobbins, spacers, sockets etc), discharge head (pulleys, V-belts, base plates), motor mount bracket, bolts and nuts (Q=8l/s)				Rate Only
g)		Fish out existing pump in borehole and replace with new pumps. Pumps shall be Wilo types submersible pumps for boreholes with oil cooled motors or simillar approved type of pumps.	Sum	10		
h)		Installation of a submersible pump and motor set fully equiped with pressure guage, non return valves, regulating valve, vacuum breaker, level measurement, inducer sleeve, motor protection, corrosion control, discharge rising main (from the pump set to the ground level) and other components (as per manufacturers specification) below as approved by the Engineer (Head includes pump position). Pumps shall be Wilo types submersible pumps for boreholes with oil cooled motors or simillar approved type of pumps.				
i)		Head = 98m, flow = 3.6m^3/h (MBH01)	no	1		
ii)		Head = 106m, flow = 1.8m^3/h (MBH02)	no	1		
iii)		Head = 105m, flow = 1.44m^3/h (MBH05)	no	0		Rate Only
iv)		Head = 116m, flow = 3.6m^3/h (MBH06)	no	1		
v)		Head = 135m, flow = 1.80m^3/h (BH01EX)	no	0		Rate Only
vi)		Head = 139m, flow = 1.44m^3/h (BH05EX)	no	0		Rate Only
vii)		Head = 117m, flow = 1.80m^3/h (BH07EX)	no	0		Rate Only
viii)		Head = 115m, flow = 1.80m^3/h	no	0		Rate Only
ix)		Head = 145m, flow = 14.4m3/h (KLM-OLF-BH13)	no	1		
Carried forward / ...						

Brought forward / …							
4.1.3		**Pump house security**					
		Install motion sensor security system with an alarm and remote sms sending facility fo upto 8 designated persons or similar approved system	Sum	4			
4.2		**TESTING AND COMMISSIONING**					
		Testing and commission borehole installation including pumps, motors, control system, pressure gauges, water meters, valves	Sum	1			
4.2.1		**Eletricity Supply**					
a)		Supply material and erect a three phase electricity power line for the 4 boreholes, complete with transformer and eskom meter box and power cable to control panel	Prov Sum	1	200 000	R	200 000,00
b)		Mark-up on item 5.9 above	%	200 000			
4.2.2		**Telemetry System**					
	5,11	Allow provisional amount for installation of telemetry system on all 4 boreholes as per speicifications to be provided by the engineer to include:					
a)		Remote Monitoring System:					
		Pump Running, Rest, Failure.					
		Water Yield per Month.					
		Power Usage per Month.					
		Static Water Level Conditions.					
		Cable Tampering.					
		Photos on opening.					
		Monthly DATA Cost only.	Prov Sum	1	650 000,00	R	650 000,00
d)		Mark-up on item 5.11.1 above	%	650 000			
TOTAL CARRIED FORWARD TO SUMMARY							

	SUMMARY - BILL OF QUANTITIES	
1	P & G's	
2	DAYWORKS	
3	BEDDING, PIPEWORK	
4	PUMPS	
	SUB-TOTAL 1	
	CONTINGENCIES (5%)	
	SUB-TOTAL 2	
	Add 15% for Value Added Tax	
	TOTAL	

PART C3 SCOPE OF WORK - DETAIL SPECIFICATION

C3.1 DESCRIPTION OF THE WORKS

1 GENERAL

The Detail Specification and the Bill of Quantities will take preference to the Quality Specification if any discrepancy may exist. Any discrepancy between the Detail Specification, Bill of Quantities and Drawings must be reported to the Engineer who will clarify such contradiction before the Bid closing.

2 SCOPE

The Contract includes the supply, delivery, installation, testing and commissioning of all material and labour for the **GROUNDWATER SUPPLY IN OLIFANTSHOEK: CONSTRUCTION OF BULK LINK LINE FROM 4 BOREHOLES TO 7ML RESEVIOR: PHASE 3** as detailed in this document. The Contractor shall construct the Works in accordance with the standards and specifications provided in this contract.

2.1 The Proposed Works

- Construction of 4 pump houses for borehole pumps, including fencing and other associated works together with fittings and electricals.
- Pumps shall be Wilo types submersible pumps for boreholes with oil cooled motors or similar approved type of pumps.
- Pumping main pipeline (Approximately 1861m) from boreholes to the mainline;
- Reticulation of Electricity for pumps (Power supply)

2.1.1 Isolation Valves and Fire Hydrants

All valves shall be Class 12 Ainsworth RSV double socketed with non-rising spindle, anti-clockwise closing. Tamperproof Woodlands type hydrants with 65mm instantaneous coupling will be used. All valves and all hydrants must be installed opposite erf boundary pegs. All valve bodies shall be factory tested according to SABS 664 at twice the specified working pressure. In addition, each type of valve shall be subjected to the appropriate test for the particular type according to SABS 664.

2.1.2 Excavation

Shallow excavations in soft material will be done by hand using local labour. Machine excavations will be used for hard and intermediate material.

2.1.3 Bedding for Pipes

Bedding for pipes shall be as classified in SANS 1200 LB and appropriately selected.

2.1.4 Depth and Cover

All pipes to have a minimum cover of 0.8 m.

2.1.5 Specifications

All materials and workmanship shall comply with the requirements of the relevant SABS specifications as listed below:

- Bedding for pipes : SANS 1200LB
- Earthworks (pipe trenches) : SANS 1200DB
- Concrete work : SANS 1200G
- Medium pressure pipelines : SANS 1200L
- Erf Connections : SANS 1200LF

2.1.6 Testing

2.1.6.1 Pipes

All pipelines shall be hydrostatically tested and disinfected according to SABS standards.

2.1.6.2 Bedding, Blanket and Backfill

Bedding and blanket material will have to conform to bedding specification and tested for compaction. Backfill material will be tested for compaction.

3 DRAWINGS

A Full set of design drawings will be provided to the successful Bidder.

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4 SITE INSPECTION

Bidders are required to inspect the proposed development site to ascertain themselves of the local conditions, availability of labour, transport and storing of materials etc as no claims in this regard will accepted. The rocky ground formation is specifically to be noted.

5 SITE ESTABLISHMENT

It shall be expected from the Contractor to erect a suitable temporary site store and fenced camp on site to store his plant, tools and contract materials. The safe storage of these materials shall be at all times be the responsibility of the Contractor.

On completion of the contract the contractor shall be responsible for the removal of all temporary site buildings and for any clearing as result of the site establishment.

6 SITE SUPERVISION AND SKILLED PERSONNEL

The successful Bidder shall appoint a full-time site foreman for the duration of the contract who shall be responsible for the overall supervision of the installation work. The site foreman shall act as the Bidder's official site representative for the contract as a whole. He will also be required to attend all schedule site meetings. The Bidder shall allow this requirement in their Preliminary and General costing in the Bill of Quantities section of this document. Deviation in changing this particularly in changing the site foreman without the approval of the Engineer will not be accepted. The successful contractor will complete a schedule for all site and skilled personnel who are to be engaged on this contract. This schedule is attached at the back of this document.

7 PROGRAMME

The Contractor must submit a detailed programme before commencement of any work based on prior experience and accounting for site conditions. The Engineer and the employer reserve the right to alter the programme to meet the priorities of the client. These amendments will be such that the Contractor will still be able to complete the works within the Bided construction time. The completion date of the contract shall be as indicated at the site handover meeting or in the appointment letter.

The Contractor must submit a progress report on each monthly scheduled site meeting based on this original programme. The contractor must also indicate his labour force and equipment on site in this report. A summary schedule indicating the main activities of the project shall also be submitted to the Engineer.

8 TIME FOR COMPLETION

The Contractor must allow sufficient time in his contract working period for delays due to in climate weather which is normal for the area. Extension of time will only be granted if evidence can be provided that the delays was caused by abnormal weather conditions or late delivery of material to site. Claims for rework will not be considered, and is an issue for insurance. The contract shall be completed on or before the completion date indicated at the site handover meeting.

The penalty for late completion of the works, is indicated in the main document. The contractor must also inform his supplier of materials if they were responsible for the late delivery of materials, the penalty would be passed on to them. Commencement of the contract will be as indicated on the letter of appointment.

9. SITE CONDITIONS

The onus will be on the Contractor to ascertain for himself the site conditions before Bid closing date.

C3.2 ENGINEERING

C3.2.1 Design services

The Contractor shall provide all labour, supervision, Plant and materials, Construction Equipment, temporary works and all other things, whether of a permanent or temporary nature, required in and for the execution and completion of the works or for the remedying of any defects, to the extent that such obligation is specified in or is reasonably to be inferred from the Contract.

In complying with his obligations under the Contract, the Contractor shall exercise due care and diligence; he shall be responsible for the adequacy, stability and safety of his site operations and methods of construction employed by him.

The Contractor shall ensure that the Works are installed and completed in accordance with prudent industry standards and good engineering and safety practices. Where the Contractor is responsible for any design, all design shall be carried out by an engineer who shall use relevant competent professional staff, registered as such with the Engineering Council of South Africa (ECSA).

C3.2.2 Employer's design

The design of the Works is detailed on the drawings (see C3.2.5 below) and described in this document.
The Contractor undertakes only construction on the basis of full designs issued by the Employer. The Contractor is to follow the specification, the design and construction drawings as laid out by the employer.
The Contractor shall note the following:
The construction, including that done by means of trenchless methodology, shall comply with all applicable local and international standards and guidelines as mandated by the Employer, the SABS, and the supplier and/or manufactures of applicable materials and goods.
The contractor shall be responsible for his own designs as far as traffic and pedestrian accommodation as well as his site camp arrangements and accesses to works is concerned subject to approval by the employer.

C3.2.3 Design brief

The Contractor will not be responsible for any civil works design for the permanent works. However, the Contractor will be responsible the design including shop detail drawing prior to manufacturing of all electro-mechanical equipment. The Contractor will also be required to submit detailed method statements for all aspects of both permanent and temporary works. These shall include (but not limited to):

- Site establishment
- Setting out of the works
- Bulk and restricted excavations
- Transport of backfill or selected granular fill within pipeline route.
- All civil works
- Building work

- Mechanical and electrical work (if added later on by the employer)
- Control and instrumentation work (if added later on by the employer)
- Structural steelwork (if added later on by the employer)
- Pipe laying, jointing and testing
- Testing of structures for water tightness

C3.2.4 Design procedure

The Contractor shall submit his drawings prior to the start of manufacture, as required by the Employer's Agent. All such drawings shall become the property of the Employer.

All fabrication and installation shall be done in accordance with the accepted drawings.

All correspondence and submittals shall be prominently identified as relating to the Works and shall be submitted under the cover of appropriate letters or transmittal notes in accordance with the correspondence procedures which will be advised by the Employer's Agent after the signing of the Contract. All documentation supplied by the Contractor to the Employer's Agent in hard copy shall also be supplied in editable electronic format.

The Employer's Agent shall have the right at all reasonable times to carry out inspections at the works of the Contractor or Sub-contractors, or elsewhere, as well as all drawings of any portion of the Works.

Drawings shall bear accepted Contract references using a project title block which will be supplied by the Employer's Agent. Also detailed revision blocks and drawing numbers shall be suffixed accordingly.

All drawings, particularly layout and foundation drawings, submitted for acceptance shall be to a scale acceptable to the Employer's Agent. All drawings shall be made to scale and fully detailed and dimensioned. All dimensions marked on the drawings are to be considered correct, although measurements by scale may differ there from. The material of which each part is to be made shall be indicated.

C3.2.5 Drawings

The drawings issued to tenderers as part of the tender documents must be regarded as provisional and preliminary for the Tenderer's benefit to generally assess the scope of work. The drawings are issued separately to this document.

The work shall be carried out in accordance with the latest available revision of the drawings approved for construction.

The employer reserves the right to reduce or increase the scope of works in accordance with available funding.

At commencement of the contract, the Employer's Agent shall deliver to the Contractor copies of the construction drawings and any instructions required for the commencement of the works. From time to time thereafter during

the progress of the works, the Employer's Agent may issue further drawings or revisions for construction purposes as may be necessary for adequate construction, completion and defects correction of the Works.

The drawings are listed in the drawing register issued with the book of drawings.

The Contractor shall produce drawings for:

1.Red-line drawings for production of Record (As-built) drawings. These are to be submitted to the Employer's Agent before the Certificate of Completion will be issued.

2.Shop and detailed drawings as required for pipework fittings and structural steelwork

3.Details of Plant for electro-mechanical projects, including concrete work requirements, foundations, bolt holes, openings for pipes, cable ducts, etc, to be shown on the civil works drawings.

Where the information provided by the contractor is found to be incorrect, the employer shall withhold the payment of retention money until the correct information is provided.

C3.2.6 Document tracking system

The Contractor shall establish a document tracking system to record the dates for the supply and receipt of all design drawings, calculations and requests for information.

C3.2.7 Submission schedule

The Contractor shall submit to the Employer's Agent a list (schedule), within one month of the starting date, of all documents that he will present for acceptance. This schedule shall provide individual titles of drawings and calculations, and their proposed submittal dates, for submittals as requested in the Works Information and as necessary for the review by the Employer's Agent of the proposed means of compliance by the Contractor with all aspects of the requirements of the Contract.

The scheduled date of first submittal, time allowed for acceptance and expected date of issue after acceptance shall be shown for each drawing.

C3.3 STANDARD SPECIFICATIONS

C3.3.1 WORKS SPECIFICATIONS

C3.3.1.1 Applicable SANS 1200 standardised specifications

The following SANS 1200 Standardised Specifications for Civil Engineering Construction are applicable:

- SANS 1200 A - 1986 General
- SANS 1200 AB - 1986 Employer's Agent's Office
- SANS 1200 C - 1980 Site Clearance
- SANS 1200 D - 1988 Earthworks
- SANS 1200 DB - 1989 Earthworks (Pipe Trenches)
- SANS 1200 DM - 1981 Earthworks (Roads, Subgrade)
- SANS 1200 DK - 1996 Gabions
- SANS 1200 L - 1983 Medium-Pressure Pipelines
- SANS 1200 LB - 1983 Bedding (Pipes)
- SANS 1200 LC - 1981 Cable Ducts
- SANS 1200 LK - 1996 Valve Installations
- SANS 1200 GA - 1982 Concrete (for Small works)
- SANS 1200 M - 1996 Roads (General)
- SANS 1200 ME - 1981 Sub base
- SANS 1200 MF - 1981 Base
- SANS 1200 MJ - 1984 Segmented Paving
- SANS 1200 MK - 1983 Kerbing and Channelling
- SANS 1200 MM - 1984 Ancillary Roadworks

C3.3.2 PREFERENTIAL PROCUREMENT PROCEDURES

C3.3.2.1 Resource standard pertaining to targeted procurement

- SANS 1914-4:2002 Targeted Construction Procurement Part 1 – Participation of Targeted Enterprises and Targeted Labour (local resources)

C3.4 AMENDMENTS TO STANDARD SPECIFICATIONS: SANS 1200: GENERAL, CIVIL AND STRUCTURAL WORKS

SECTION PSA: GENERAL (Applicable to SANS 1200 A - 1986)

PSA2.3 Definitions

Add to the sub-clause

"Task" - a quantified activity or operation

"Daily task" - a task that is required to be completed within a given time

"Task work" - work paid by the completed task or job

"Daily rate" - the remuneration of a day's work regardless of output

"Daily wage" - see daily rate

"Task rate" - the remuneration for a completed Task

"Daily task rate" - 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

"Labour based construction" see labour intensive construction

PSA2.8 Items in Bill of Quantities

PSA 2.8.1 Principles

In the fourth line of Sub-Clause 2.8.1, after the word "specification", add: "or in the measurement and payment Clause of the standard specification, particular specification or project specification".

Add the following to this Clause:

Items which are designated as provisional quantities or provisional sums in the Bill of Quantities are intended to provide for works, the need or extent of which shall be established by the Employer's Agent during construction. Work scheduled as such shall only be undertaken on the written instruction of the Employer's Agent and, where applicable, shall be paid for at the Tendered rate or in the absence of rates shall be valued in accordance with Clause 6.4 of the General Conditions of Contract.

The Bill of Quantities shall not be used for ordering purposes and no liability or responsibility shall be admitted by the Employer's Agent in respect of materials ordered or procured by the Contractor on the basis of the Bill of Quantities.

PSA 3 MATERIALS

PSA 3.1 Quality and Samples

Add to the Sub-Clause:

No used or recycled material may be used in the Works unless expressly authorised by the Employer's Agent.

Materials specified as being to the approval of a Standards Bureau shall bear the official mark of the Bureau concerned.

Samples of concrete aggregates and pipe bedding material are to be delivered to an approved laboratory.

Rubber articles, including pipe insertion or joint rings shall be stored in a suitable shed and kept away from sunlight, oil or grease.

Large items not normally stored in a building shall be neatly stacked or laid out on suitable cleared areas on the Site. Grass or vegetation shall not be allowed to grow long in the storage areas and the material shall be kept free of dust and mud and be protected from stormwater. Pipes shall be handled and stacked in accordance with the manufacturer's recommendations, special care being taken to avoid stacking to excessive heights and placing over hard objects. uPVC pipes shall be protected from direct sunlight by suitable covers.

Every precaution shall be taken to keep cement dry and prevent access of moisture to it from the time it leaves the place of manufacture until it is required for use on the Site. Cement is to be used on a first in/first out basis. Bags of cement which show any degree of hydration and setting shall be removed from the site of the Works and replaced at the Contractor's own expense. Any cement older than six weeks is to be removed from site

Materials shall be handled with proper care at all times. Under no circumstances may materials be dropped from vehicles. Large pipes or large plant shall be lifted or lowered only by means of suitable hoisting equipment.

Where propriety materials are specified it is to indicate the quality or type of materials or articles required, and where the terms "or other approved" or "or approved equivalent" are used in connection with proprietary materials or articles, the Contractor is to supply with their Tender the name of the manufacturer and supporting documentation that show that the materials or articles comply with the relevant specifications. It is understood that the approval shall be at the sole discretion of the Employer and the Employer's Agent.

Irrespective of any approval granted/used by the Employer's Agent or the Employer, the Contractor shall be deemed responsible for all material quality use for construction and their specified performance.

Unless otherwise specified, all proprietary material shall be used and placed in strict accordance with the published instructions of the relevant manufacturer

PSA 4 PLANT

PSA 4.2 Contractor's Office and Stores (Refer SANS 1921-1 Clause 4.14)

Add to the Sub-Clause:

Neither housing nor shelters are available for the Contractor's employees, and the Contractor shall make his own arrangements to house his employees and transport them to site.

The Employer will place an area of ground at the disposal of the Contractor at construction site to enable him to erect his site offices, workshops and stores. The temporary facilities and ablution facilities shall comply with the requirements of the local Authority.

On completion of the Works or as soon as the Contractor's facilities are no longer required the Contractor shall remove such facilities and clear away all surface indications of their presence. The site is to be rehabilitated as described elsewhere.

PSA 5 CONSTRUCTION

PSA 5.1.2 Preservation and Replacement of Pegs Subject to Land Survey Act (Refer SANS 1921 - 1 Clause 4.15)

Add to the Sub-Clause:

Before the commencement of construction work in the vicinity of boundaries, the Contractor, under the direction of the Employer's Agent, shall search for plot pegs where boundaries have not been established by the erection of walls or fences and the Contractor shall compile a list of such pegs that are apparently in their correct positions. At the completion of the Contract, the Contractor shall expose the pegs that were listed at the commencement of the construction and the Employer's Agent will arrange for any such pegs that are missing to be replaced at the Contractor's expense.

All plot boundary pegs shall be marked with fencing droppers which shall be painted.

As the construction of the Works may necessitate the removal and re-siting of certain survey beacons the Employer will make the necessary application to the Surveyor-General and, notwithstanding the provisions of Sub-Clause 5.1.2 will meet the costs of the re-survey by a Land Surveyor of these servitude beacons in their new position.

The Employer will accordingly indemnify the Contractor against all costs implied in Sub-Clause 5.1.2 in respect of those beacons which may have to be removed by the Contractor.

All survey reference marks shall be clearly marked and protected by the erection of three fencing standards.

PSA 5.2 Watching, Barricading, Lighting

Add the following to this Clause:

The Contractor shall employ competent watchmen to guard the Works both by day and night.

From the time any portion of the Works commences, until the Completion of the Works and the issue of the Certificate of Completion of the Works, the Contractor shall be responsible for protecting the property of the Employer and all persons having business on the Site from anything dangerous or likely to cause damage or injury. The Contractor shall take all practical precautions to avoid nuisance or inconvenience to the owners or occupier of properties near to the Site and to the public generally whilst carrying out the Works and shall at all times keep the Site clean and in a safety and satisfactory condition.

The Contractor shall control all access to the site, for authorised persons only, and to ensure that the approved conditions of the Health and Safety Management Plan are adhered to.

PSA 5.4 Protection of Overhead and Underground Services

Add the following to this Clause;

Before construction of the Works, or any phase of the Works, the Contractor shall contact all relevant parties and authority officials to establish the existence of existing services on site. The Contractor shall be responsible for obtaining all necessary wayleaves. No claims shall be lodged by the Contractor for delays in obtaining such wayleaves or permits.

PSA 5.7 Safety

Compliance with 1) Occupational Health and Safety Act, 1993 and the Minerals Act, Act 50 of 1991 (as amended) and Regulations and 2) CEMP

Lump sums are provided in the Bill of Quantities to cover the Contractor's cost for compliance with the requirements of the Construction Environmental Management Plan and the Occupational Health and Safety Act, 1993, the Construction Regulations, 2003 and the Health and Safety Specification respectively.

In addition, Sums are included under Time Related Items in the Preliminary and General Section of the Bills of Quantities. The lump sums shall include full compensation for the provision of the necessary site official, the training, Personal Protection Equipment (PPE's), plans, audits, assessments, administration, etc. and all other costs required for compliance. Fines issued for non-compliance will be deducted from these Provisional Sums, but are not limited to the value of the Provisional Sum stated.

PSA 6 TOLERANCES

PSA 6.2 Degrees of Accuracy

Add to the Sub-Clauses:

Generally, Degree of Accuracy II shall be applicable to the whole of the Works, unless specified otherwise.

PSA 7 TESTING

PSA 7.1.1 Checking

Amend this Sub-Clause as follows:

The Contractor shall carry out sufficient checks to satisfy himself that the materials used and the workmanship (i.e. the quality of construction, adherence to tolerances and, when applicable, the strength attained) comply consistently with the specified requirements and the results of those checks shall, if so ordered, be made available to the Employer's Agent. The Employer's Agent may carry out such checks as he deems necessary at any point or at any depth or on any layer, as applicable, and the results of the Employer's Agent's checks shall be made available to the Contractor.

Every completed section of the Works shall be subject to check testing by the Contractor at the minimum frequency specified in the Contract. Once the Contractor has satisfied himself with the standard of his

Works, the Employer's Agent will be requested at least 48 hours in advance to perform inspections and/or acceptance testing for the particular section. When giving notice, the Contractor shall provide the Employer's Agent with the results of his check testing indicating that the work complies with the Contract, or advise the Employer's Agent in writing that, although no tests have been performed, he is confident that the requirements of the Contract have been met.

Failure by the Contractor to notify the Employer's Agent or to provide the required information or, where specified, to perform the required test, will be grounds for the Employer's Agent not to certify the associated work as being complete as well as all subsequent work which would be affected by the failure of the work to be tested.

The Employer's Agent will be under no obligation to the Contractor to perform the inspections and/or acceptance tests. The Contractor shall obtain the approval of the Employer's Agent based on the acceptance test results of any specified test before proceeding with subsequent work. If the Employer's Agent elects not to perform a particular inspection and/or test after notification by the Contractor, he will issue the Contractor with a written instruction to proceed with the relevant Works without the inspection and/or acceptance test being performed.

Nothing contained in this Sub-Clause will relieve the Contractor of his responsibilities under the Contract or in any way limit the inspections and/or tests that the Employer's Agent may call for or perform in terms of the Specification. The Contractor shall make due allowance for testing procedures in his construction programme.

Where applicable a Provisional Sum will be provided in Section 1 of the Bill of Quantities to allow for the cost of the Employer's Agent's acceptance tests that meet the requirements of the Contract. The cost of all other testing shall be borne by the Contractor.

The procedure for payment of the Employer's Agent's acceptance testing will be as follows:

- The Employer's Agent's laboratory will invoice the Contractor with all acceptance-testing costs including unsuccessful tests. If payment to the Employer's Agent's laboratory is not made within 35 days of the date of invoice the Employer's Agent will subtract an amount equal to twice the amount payable from the subsequent payment certificates until such time as the amounts plus interest at the ruling prime lending rate plus 2% are made.

- The Contractor shall be reimbursed for all acceptance tests that meet the requirements of the Specification via the interim Payment Certificates. The Employer's Agent requires 48 hours' notice from the Contractor when each stage listed below is reached in order to perform the relevant inspection and/or acceptance test:

    - Pipe trenches

      The Employer's Agent will visually inspect excavations before placement of bedding material. The Employer's Agent will perform density acceptance tests in pipe trenches on the bedding layers, selected backfill and backfill at 300 mm intervals. The Contractor shall notify the Employer's Agent when the pipe trench has been excavated and when each 300 mm increment of backfill has been completed.

    - Pipework

      The Employer's Agent will visually inspect all anchor blocks and pipework before covering up. The Contractor shall notify the Employer's Agent when the pipeworks are ready, before covering up. The Contractor shall perform pressure tests in the presence of the Employer's Agent after the trench has been partially backfilled. Joints and fittings are to remain exposed. The Contractor shall retest the completed pipelines in the presence of the Employer's Agent on completion of all the Works."

PSA 8 MEASUREMENT AND PAYMENT

PSA 8.1.2.4 Payments to Service Authorities Unit: Prov Sum

Insert the following new Sub-Clause 8.1.2.4:

Where applicable, the Contractor shall make necessary payments to the relevant services authorities before commencing work on such services, or for work to be carried out by such service authorities.

PSA 8.2.2 Time-related Items

Re-word the third and fourth lines to read:

"Incremental amounts (calculated by the division of the remainder of the Tendered sum by the number of remaining months of the duration of construction as assessed by the Employer's Agent) will be"

SECTION PSAB: ENGINEERS OFFICE (Applicable to SANS 1200 AB - 1986)

PSAB 2 INTERPRETATIONS

PSAB 2.1(b) Supporting Specifications

Delete the Sub-Clause and substitute the following:

(b) SANS 1200 A

PSAB 2.3 Definitions

Delete the first two lines and substitute the following:

For the purposes of this specification the definitions given in SANS 1200 A shall apply:

PSAB 3 MATERIALS

PSAB 3.1 Name-boards

Add the following:-

Two Employer's name-boards shall be erected within one month of the commencement of construction and shall be placed where ordered by the Employer's Agent. Any damage to this board shall be repaired within 14 days of a written instruction received from the Employer's Agent. For details of the board refer to the Standard Drawings contained in this document.

Erection of four Contractor's name-boards that comply with the drawing(s) provided are required in the area of the Works, at a positions approved by the Employer's Agent, who may at any time order their removal if any objections are received.

The board shall be manufactured from materials specified in Clause 3.1 of SANS 1200 AB but shall conform in the painting, decorating and detail with the recommendations for the Standard Board of the South African Institution of Civil Employer's Agents.

All name-boards shall be removed 14 days prior to the date of the Final Approval Certificate.

PSAB 3.2 Office Building(s)

Delete the first sentence and substitute the following:

The Contractor shall supply and furnish three air-conditioned (6 m x 3 m) offices, (one for the use of the Employer's Agent and his/her staff and one for the Employers' inspectors and one air-conditioned (9 m x 3,4 m) conference facility for conducting meetings). Minimum size of each conditioner shall be 12000 btu.

Add to the Sub-Clause:

In addition to the furnishings listed under sub-items (a) to (i), the following shall be provided and properly maintained:

(j) electrical installation to include a light and two 15 A plug points plus two adequately sized air conditioning units (for heating and cooling) for each unit
(k) one refrigerator of at least 100 litre capacity
(l) one kettle of at least 2 litre capacity
(m) one tea set comprising six cups and saucers, six teaspoons, one teapot, one sugar bowl and one milk jug
(n) covered parking for five vehicles
(o) un-covered parking space for five vehicles
(p) two "Barhold" or similar wall mounted racks each with 6 clamps suitable for hanging A0 sized drawings
(q) one large meeting table

(r) ten additional chairs.

PSAB 4 PLANT

PSAB 4.1 Telephone

Delete the Sub-Clause and substitute the following:

The Contractor shall provide a cellular phone for the sole use of the Employer's Agent or his Representative. In addition, each Community Liaison Officer shall be given R500.00 airtime monthly.

PSAB 4.2 Survey Equipment (New Sub-Clause)

Add new Sub-Clause:

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

- One full set of Global Navigation Satellite System (GNSS) compatible survey equipment
- One spirit level (one metre long)
- One hammer (2 kg) with steel or wooden pegs as necessary
- One 50 m steel tape
- One 5,0 m (or longer) retractable steel tape

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

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

PSAB 4.3 Computer Facilities

The Employer's Agent's Office shall be equipped with the following facilities:

- 1 x A3 WI-FI printer with scanning capabilities
- 3G/TELKOM WI-FI internet connection.

PSAB 5 CONSTRUCTION

PSAB 5.2 Employer's Agent's Office (Refer SANS 1921-1 Clause 4.14)

Add to the Sub-Clause:

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

PSAB 5.5 Survey Assistants

Delete the first sentence and substitute the following:

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

PSAB 8 MEASUREMENT AND PAYMENT

PSAB 8.1 Scheduled Items

Delete the 1st sentence and substitute the following:

Items will be scheduled in terms of Sub-Clauses 8.3.2 & 8.4.2 of SANS1200 A.

PSAB 8.2.1 Fixed and Time-related Charges

Delete the 1st sentence and substitute the following:

The terms of Sub-Clause 8.2 of SANS 1200 A shall apply.

SECTION PSC: SITE CLEARANCE (Applicable SANS 1200 C - 1980 As Amended 1982)

PSC 3 MATERIALS

PSC 3.1 Disposal of Material

Add to this Sub-Clause:

Material obtained from clearing shall be disposed offsite by the Contractor at his expense. Disposal of combustible material by burning will not be permitted. The Contractor will be held responsible for observing the by-laws and regulations of the local authority.

SECTION PSD: EARTHWORKS (Applicable to SANS 1200 D - 1988)

PSD 3 MATERIALS

PSD 3.1.2 Classes of Excavation

Notwithstanding the provisions of Sub-Clause 3.1.2, the materials excavated, other than hard rock, will not be classified for the purposes of measurement and payment. The unit rate for excavation shall cover the cost of excavation in all materials with the only extra-over items payable being those for excavation in hard rock.

PSD 4 PLANT

PSD 4.5 Restriction on use of Plant

Add new Sub-Clause:

Where the Contractor finds it impractical to use mechanical plant for excavation or to complete portions of the work due to restrictions caused by difficult access or the presence of existing structures, pipelines or services shown on Tender drawings, the Contractor will be deemed to have satisfied himself as to the alternative requirements when entering rates against the appropriate items in the Bill of Quantities as no claim for extra payment based on the inability to use plant in such circumstances will be considered.

PSD 4.6 Vibration Loadings from use of Plant

Add new Sub-Clause:

The onus will be on the Contractor, when proposing to use heavy plant or equipment to complete work in close proximity to existing structures, pipelines or services, to determine the effect of the vibration loading from the plant or equipment on the supporting ground or foundation and the structure, pipeline or service and take all necessary steps to ensure that the stability or integrity of the element concerned is not compromised by the particular selection and use of plant or equipment.

Any damages caused to existing elements directly or indirectly arising out of the use of plant and equipment in close proximity shall be made good, to the satisfaction of the Employer's Agent by the Contractor at his own expense.

PSD 5 CONSTRUCTION

PSD 5.1.1.1 Barricading and Lighting (Refer SANS 1921-1 Clause 4.18.2 and 4.18.3)

Delete the Sub-Clause and substitute:

Without limiting any obligation which the Contractor may have in terms of any Act, Ordinance or other legislation, the Contractor shall ensure that all excavations which are accessible to the public or which are adjacent to a public road or thoroughfare, or by which the safety of persons may be endangered are protected as set out in Clause 13 of the General Safety Regulations of the Occupational Health and Safety Act, 1993 and that watchmen are employed to ensure that barricades, barriers and lights are effective at all times.

Trench excavations shall be protected by means of at least two horizontal double sided 'red/white; chevron tapes approved by the Employer's Agent. The tapes shall be stretched tightly between supports along both sides and ends of the excavation at levels approximately 0,45 m and 1,12 m above the ground. The supports shall consist of poles or iron standards securely planted in solid ground at not more than 10 m centres so as to enclose the spoil and the excavations

Bridges for vehicles and/or pedestrians shall be provided along the route of the work as and where may be considered necessary by the Employer's Agent. They shall consist of a number of suitably sized steel plates laid across open excavated trenches. They shall be protected on each side by a stout two rail timber safety barrier, at least 1m high, consisting of 150 x 75 mm timber verticals set firmly into the ground and, 75 mm x 50 mm rails securely fastened to them. At least 4 lamps or reflective markers shall be provided at each crossing.

Where construction is in, or across, public roads the barricades or barriers and temporary road signs that are erected shall comply with the requirement of the relevant authority. All such signs and positioning thereof shall comply with the requirements set out in Road Note 13 read in conjunction with the SA Road Traffic Signs Manual.

PSD 5.1.4.3 Disposal (Sub-Clause 5.1.4.3 and 5.2.2.3)

Amend this Sub-Clause as follows:

The Contractor shall not spoil, stockpile or waste any material without approval~~. He shall dispose of surplus and unsuitable material in areas designated on the drawings or in the project specification~~. Unsuitable material from stockpiles or excess material shall be removed from site and transported to a suitable disposal site approved by the Employer's Agent. Spoil heaps shall be flattened to present a neat level or graded surface.

Dumping shall proceed in an orderly manner with coarse material placed at the bottom and covered with finer material, where possible. Upon completion of dumping the material shall be shaped to provide free-draining surfaces and slopes and finished off to the satisfaction of the Employer's Agent.

PSD 5.1.6 Road Traffic Control

In the 4th line of Sub-Clause 5.1.6 amend "South African road traffic signs manual[1)]" to read:
"Southern African Development Community: Road Traffic Signs Manual[1)] and Chapter 13: *[Road works Signing]* of the South African Road Traffic Signs Manual[1)] ", and amend the footnote to read:
"[1)] Published by the Department of Transport, Pretoria."

Where traffic signals are required, they shall be provided and operated in accordance with the applicable requirements of the South African Road Traffic Signs Manual.

Where work is to be carried out while half of the roadway is closed to traffic, flagmen shall be provided and temporary road signs shall be erected, maintained and operated

PSD 5.2.3.2 Backfilling of Trenches and backfilling or filling against Structures

Add this paragraph under this Sub-Clause:

(a) General.
Where ordered by the Employer's Agent, the Contractor shall bench the foundations of the structures using cement-stabilized G5 gravel from commercial sources compacted to 98% Mod AASHTO density. The saturated UCS value shall not be less than 3 MPa.

After construction, backfilling and compaction of material shall commence as follows:

(i) General backfill material shall be placed in layers of maximum thickness 250 mm and each layer compacted to 90% Mod AASHTO

(ii) Restricted backfill material shall be placed in layers of maximum thickness of 250 mm and each layer compacted to 90% Mod AASHTO

Topsoiling: Topsoil material shall be spread over areas designated for topsoiling to a layer thickness of 150 mm.

PSD 5.1.1.3a) Explosives (New Sub-Clause) (Refer SANS 1921-1 Clause 4.7)

Notwithstanding Sub Clause 5.1.1.3 the Employer's Agent shall be notified at least 48 hours beforehand of the Contractor's intention to use explosives on site

It shall be the Contractor's responsibility to make himself aware of the restrictions to blasting imposed by electric transmission or telephonic lines and other similar services. Where the presence and location of electric transmission or telephonic lines etc, are known or are shown on the Employer's Agent's drawing at Tender stage the Contractor shall make allowance in his rates and programmes for restrictions and delays which may result from restrictions imposed by the authorities.

PSD 5.1.1.3b) Negligence (New Sub-Clause)

The Contractor shall be liable for all damages to services caused as a result of the Contractor's negligence.

PSD 5.2.1.1.1 Clearing or Clearing and Stripping of Site

Delete the last sentence and substitute:

Material so removed shall be disposed of by the Contractor to the designated landfill identified by the Contractor and approved by the Employer's Agent.

PSD 5.2.2.1 Excavation (Refer SANS 1921-1 Clause 4.10)

Add the following to sub-Clause (d)

In order to minimize potential differential settlement of the shallow foundations for the proposed new works in relation to existing or new valve chambers or undermining of the existing structures, it may be necessary to carry out ground improvement.

Once excavation to the base of the existing structure has taken place, a Dynamic Cone Penetration Test (DCP) shall be carried out to a minimum depth of 1 m to ascertain the necessity or otherwise to carry out the ground improvement. DCP results of ≥5 blows per 100 mm are deemed to indicate the presence of stiff clays.

Where stiff clays are encountered in the 1 m zone below the existing structure, it is recommended that the clay is immediately blinded with a lean mix of concrete and construction proceed on the basis of a "raft" type foundation / base slab supporting the sidewalls of the new structure.

If the clays are soft or loose sand is encountered, vertical lightweight trench sheeting is to be vibrated or driven down as close as possible to the existing foundations for a distance of at least 1,0 to 1,2 m below founding level.

The base area shall then be over-excavated, both vertically and horizontally, and the material shall be replaced with well compacted granular material (G6 minimum). The surface shall be blinded with a lean concrete mix after removal of the trench sheeting, following which the base slab to support the sidewalls shall be cast.

Add the following to the Sub-Clause:

(f) Where outside shuttering is ordered by the Employer's Agent, the excavations shall be carried out for an extra width of not more than 600 mm all around the structure, measured from the base of the face to be shuttered, to allow for the shuttering to be fixed, this extra excavation and refilling where necessary is to be measured and paid for under quantities allowed for this purpose in the Bills of Quantities. Outside shuttering shall be used for the construction of all major structures unless ordered otherwise by the Employer's Agent.

(g) Where permanent concrete is to be placed against an excavated face, the excavation shall be trimmed to ensure that there is no projection greater than 20 mm protruding into the excavation profile.

(h) The Contractor shall not spoil, waste or stockpile excavated material without approval.

PSD 5.2.3.1 Embankments

In the fourteenth line delete "600 mm" and substitute "300 mm"

In the seventeenth line delete "300 mm" and substitute "150 mm"

Delete the twentieth line and substitute the following:

Each layer shall be compacted to achieve 90% modified AASHTO density except where indicated otherwise on the drawings

PSD 5.2.5 Transport of Earthworks

Delete the wording of Sub-Clause 5.2.5 and replace with the following:

All haul will be regarded as freehaul. No overhaul will be paid under this Contract.

SECTION PSDB: EARTHWORKS (Pipe Trenches) (Applicable to SANS 1200 DB - 1989)

PSDB 3 MATERIALS

PSDB 3.3 Selected Granular Material

(for bedding material (padding) for steel pipes see PSLB 3.3)

PSDB 3.4 Selected Fill Material

Not required. All material up to the underside of backfill shall be measured as selected granular. (for bedding material (padding) for steel pipes see PSLB 3.3)

PSDB 3.5(a) Backfill Material

In the third line delete "150 mm" and substitute "100 mm".

PSDB 3.5(b) Backfill Material

In the second line delete “PI not exceeding 12” and substitute “PI not exceeding 6”.

PSDB 3.5(c) Cement Stabilised Backfill

Add the following new Sub-Clause:

Where scheduled, or directed by the Employer’s Agent, backfill shall be stabilised with 8% cement by mass. The backfill material shall have a plasticity index not exceeding 10 and all material shall pass through a sieve of aperture size not exceeding that specified in SANS 1200 LB, Sub-Clause 3.2, as amended.

The dry materials shall first be mixed in a concrete mixer thereafter sufficient water is to be added to produce the stiffest consistency available for placing and compacting with vibrators.

PSDB 3.6 Materials for Reinstatement of Roads and Paved Areas

Delete the Sub-Clause and substitute:

Material used in the reinstatement of roadways shall fall into the following relevant categories:

(a) Foundation material recovered from the excavation of trenches across existing roadways which, if so instructed by the Employer’s Agent, shall be set aside and re-used as sub-base material.

(b) New material which shall conform to the requirements of:

(i) Clause 3.2.1 of SANS 1200 ME for the Subbase

(ii) Clauses 3.2 and 3.3 of SANS 1200 MF for the Basecourse

(iii) Clause 3.2.2 of SANS 1200 ME for the Gravel Wearing Course

(iv) Clause 3 of SANS 1200 MH for the Asphalt Surfacing

PSDB 3.7 Selection

Delete the second sentence and substitute the following:

The Contractor is not required to use selective methods of excavating but shall, if so instructed by the Employer’s Agent, screen or otherwise treat excavated material in order to produce material suitable for the bedding cradle or the bedding blanket.

PSDB 4 PLANT

PSDB 4.1 Excavation Equipment

In the first line delete “The Contractor” and substitute: “In sections deemed to be excavated by mechanical means, the Contractor”

Add to the Sub-Clause:

Should any portion of a pipe trench exceed the specified depth, the Contractor will be held responsible for any additional costs which may arise as a result of such over-excavation. Concrete filling or imported compacted fill may be ordered by the Employer's Agent to be placed below the bottom of the trench.

PSDB 5 CONSTRUCTION

PSDB 5.1.2.3 Sloping Ground

Delete the Sub-Clause and substitute:

The Contractor shall be responsible throughout the duration of the Contract, **inclusive of the Defects Liability Period**, for the provision of all soil erosion preventative measures necessary to protect the trenches, pipeline(s) and land utilised by the Contractor during the Contract from any adverse effects of soil erosion, settlement, scour, etc., resulting from the construction of the Works.

Cross embankments, generally extending across the full width of the working strip, consisting of low earth mounds shaped to rounded form and so oriented as to have a fall of 1% along their length, shall be constructed with compacted material having a minimum density of 90% modified AASHTO density and minimum dimensions and maximum spacings dependent on the slope of the ground along the length of the pipeline, as indicated in the following table:

Slope of Ground	Minimum Height	Minimum Base Width	Maximum Spacing
0% - 5%	No cross-embankments required		
5% - 10%	300 mm	1,2 m	40 m
10% - 15%	375 mm	1,5 m	30 m
Greater than 15%	450 mm	1,7 m	20 m

The height of the cross-embankments for a distance of 1,0 m on either side of the trench centreline shall be raised 150 mm above the remainder of the cross-embankment to allow for settlement. In order to form a satisfactory drainage channel upstream of each cross-embankment (at a slope of 1%) the crown over the backfilled trench shall be removed for a distance of 0,5 m upstream of the cross-embankment.

Cross-embankments shall be constructed to the same minimum standards and dimensions indicated above wherever artificial slopes have been formed on the working strip or other areas used during construction and, with the approval of the Employer's Agent, are permitted to be so left.

Payment will be made for the construction of cross-embankments in accordance with Sub-Clause 8.3.4(c), provided construction thereof has been either ordered or approved by the Employer's Agent prior to the commencement of such construction.

PSDB 5.1.2.4 Cross-Walls in Trenches (New Sub-Clause)

In steeply sloping trenches (longitudinal slope > 15 %) and where otherwise ordered by the Employer's Agent, the Contractor shall place sacks of earth as sack breakers or cross walls around and above the pipe up to ground level, prior to backfilling, as a soil erosion measure. Such sacks shall be filled with selected material free of stones in excess of 50 mm maximum dimension. One sack breaker shall consist of these sacks packed tightly against the trench bottom, pipe and actual trench sides, and against each other to form a solid cross wall at least 0,5 m thick from the bottom of the trench to the surface.

Where required, an item will be included in the Bill of Quantities to cover the cost of the supply, installation and maintenance of sack breakers.

PSDB 5.2 Minimum Base Widths

Add to the Sub-Clause:

Trench sides shall be as near vertical as possible in order to minimise the quantity of backfill material required and to avoid possible difficulties where pipelines have to be installed parallel to existing services, fences, hedges, etc and to minimise the loading on the pipe.

The base width for trenches for cables, ducts and unbedded flexible continuous piping, of external diameter less than 125 mm laid at a depth not exceeding 1,5 m, shall be equal to the external diameter of the cable, duct or pipe, plus a side allowance of 200 mm on either side.

PSDB 5.4 Excavation

Add to the Sub-Clause:

Where the pipe trench crosses surfaced roads the Contractor shall neatly cut two parallel grooves into and through the "black top" before excavating between the grooves. The grooves are to be set back at least 200 mm from the edge of the excavation face to prevent ravelling of the cut edge. The cost of this operation, where not scheduled separately, will be held to be covered in the general rates for excavation.

PSDB 5.5 Trench Bottom

Add to the Sub-Clause:

In waterlogged conditions and/or where so instructed by the Employer's Agent a 150 mm thick layer (See PSLB 5.2.5) of imported single sized stone (19 mm size unless otherwise instructed by the Employer's Agent) with a geofabric filter surround ("Bidim" Grade A4 or similar approved) shall be constructed under the bedding layer specified for the pipes.

PSDB 5.5.1 Jointing Holes (New Sub-Clause)

Jointing holes shall be cut of sufficient length and depth to allow for the proper making or bolting of pipe joints and to ensure that joint collars or sleeves do not rest on the trench bottoms. After the pipework has been inspected, tested and approved by the Employer's Agent, the jointing holes shall be refilled with selected soft material free from stone (padding materials as specified under PSLB in the case of coated steel pipes) and then rammed to provide a continuous uniform support for the pipework. No specific payment will be made for forming and refilling holes, the cost of which will be deemed to be included in the Tendered rates.

PSDB 5.6.1 Backfilling - General

Add to the Sub-Clause:

Notwithstanding the requirements of Sub-Clauses 5.6.1 and 5.6.6, no pipe joint or pipe fitting shall be covered by either blanket or backfill material prior to the successful completion of the visual inspection and pressure testing of the relevant section of the pipeline.

All backfilling shall be carried out by hand and the Contractor shall price his Tender accordingly. No mechanical plant shall be used in backfilling without prior written consent of the Employer's Agent.

PSDB 5.6.2 Material for Backfilling

Delete fourth, fifth and sixth lines and substitute the following:

Hard rock material shall not be used for, or incorporated into, the backfill above the bedding layers without the Employer's Agent's approval.

PSDB 5.6.3 Disposal of Soft Excavation Material

Add to the Sub-Clause:

Surplus material or unsuitable material shall be disposed of offsite by the Contractor.

PSDB 5.6.4 Disposal of Intermediate and Hard Rock Material

Add to the Sub-Clause:

Surplus intermediate and hard rock material from trench excavations shall be disposed of offsite by the Contractor.

PSDB 5.6.8 Transport for Earthworks for Trenches

Delete the Sub-Clause and substitute:

The requirements of Sub-Clause 5.2.6 of SANS 1200 DA as amended and as applicable shall apply.

PSDB 5.7.2 Areas subject to Traffic Loads

Add to the Sub-Clause:

for an extent of 2 m on either side of the carriage-way at each crossing.

PSDB 5.9.4 Bitumen Roads, Sub-Base and Base

Each Tenderer shall include in his Tender allowances to cover the costs of reinstating all surfaces and inclusive of all layers to their conditions pertaining before the commencement of construction.

Items have been included in the Bill of Quantities to cover the reinstatement of certain surfaces (grassed lawns, concrete and/or asphalted/gravel driveways and/or roads) and for payment purposes, the area of those specific surfaces shall be calculated from the product of the length of the trench and the specified trench width plus 400 mm (refer PSDB 5.4).

PSDB 8 MEASUREMENT AND PAYMENT

PSDB 8.1.4 Basic Principles

Delete Sub-Clause and substitute:

Except that the volume will be computed as specified in 8.2.3, the requirements of Sub-Clause 5.2.6.1 (Freehaul) of SANS 1200 DA as amended and as relevant, shall apply to freehaul.

No additional payment will be made for excavating and backfilling bell (fox) holes as the cost of that work will be deemed to be included in the rates for trenching.

PSDB 8.3.5 Existing Services that Intersect or Adjoin a Pipe Trench Unit: No/m

Add to the end of the Sub-Clause:

(v) all work involved in locating the service by hand excavation

(vi) notifying and attending upon the owner of the service

(vii) supporting and protecting the service while the pipeline is installed, inspected, tested and backfilled.

SECTION PSDM: EARTHWORKS (Roads, subgrade) (Applicable to SANS 1200 DM - 1981)

PSDM 3 MATERIALS

PSDM 3.1 Classification for excavations purposes

Replace Clause 3.1 with the following:

The Contractor may use any method he chooses to excavate any class of material but the chosen method of excavation shall not determine the classification of the excavation. The Employer's Agent will decide on the classification of the materials. In the first instance the classification will be based on inspection of the material to be excavated and on the criteria given in PSD 3.1.2.

All material encountered in any excavations for any purpose including restricted excavations will be classified as follows:

1. Excavation in All Materials. This category of excavation includes; excavation in all sandy and disturbed material; excavation in clay; excavation in undisturbed and weathered shale (clay); sandstone; mudstone and excavation in rippable rock.
2. Excavation in hard rock will require blasting or rock splitting. Areas where rock splitting is required will be indicated on site by the Employer's Agent.

   Extra-over payment will be made for hard rock excavation and boulder excavation class A and B provided the surface levels of the hard rock have been recorded on drawings signed by the Employer's Agent before it is excavated.

PSDM 3.2.3 Selected Layer

Add the following:

The Contractor shall obtain selected subgrade material from a source of his own choice. The unit rate Tendered shall include all procurement related costs, including haulage. The material quality shall comply with that of a G7 natural gravel as specified in SANS 1200 and shall be compacted to the specified of Mod AASHTO Density.

PSDM 5 CONSTRUCTION

PSDM 5.2.2.4 Temporary Stockpiling of Materials

Add the following paragraph:

The Contractor shall program the works in such a manner that suitable excavated material from site or imported from a commercial sources, shall be placed directly in the appropriate position in fill to ensure that temporary stockpiling is not needed. No payment shall be made for the temporary stockpiling of material where such material is to be used for backfilling of pipe trenches, except when so ordered in writing by the Employer's Agent.

PSDM 5.2.3.3a) Preparation and Compaction of Road Bed

Substitute the first paragraph with the following:

The roadbed shall be scarified to a depth of 250 mm, watered, shaped and compacted to 93% of AASHTO density (100% for sand), except where otherwise ordered by the Employer's Agent.

Where the existing subgrade material does not conform with the G9 specifications as per the TRH 20, the Contractor is to notify the Employer's Agent and request approval for inclusion of a selected sub-grade layer. In this case the box floor shall be levelled and compacted with two passes of a vibratory roller.

PSDM 5.2.8 Transport of Earthworks

Delete the Sub-Clause and substitute:

All haul will be regarded as free haul.

PSDM 7 TESTING

PSDM 7.3.2 Routine Inspection Testing

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

No density shall be less than the specified minimum density for the relevant layer.

The cost of all routine testing done by the Employer's Agent, and of which the results do not comply with the specified minimum requirement for the material, shall be borne by the Contractor and will be subtracted from the monthly payment certificates.

PSDM 8 MEASUREMENT AND PAYMENT

PSDB 8.3.6 Extra-over items 8.3.4 and 8.3.5 for Excavating and Breaking Down Material in

Delete Item a) of this Clause and add the following:

No payment shall be made for intermediate excavation. Excavation normally classified as Intermediate excavation shall be paid as per the rate for normal excavation (8.3.4 or 8.3.5 as appropriate).

PSDM 8.3.7 Cut to Spoil or Stockpile from

Delete Item b) of this Clause and add the following:

No payment shall be made for intermediate excavation. Excavation normally classified as Intermediate excavation shall be paid as per the rate for soft excavation (8.3.7.a).

Delete Sub-Clause and substitute:

Except that the volume will be computed as specified in 8.2.3, the requirements of Sub-Clause 5.2.6.1 (Freehaul) of SANS 1200 DA as amended and as relevant, shall apply to freehaul.

No additional payment will be made for excavating and backfilling bell (fox) holes as the cost of that work will be deemed to be included in the rates for trenching.

SECTION PSDK: GABIONS AND PITCHING (Applicable to SANS 1200 DK - 1996)

PSDK 3 MATERIALS

PSDK 3.1.1.1 Quality

Add to the Sub-Clause:

The stone shall be subjected to the weathering and durability test.

PSDK 3.1.2 PVC Coating

Add to the Sub-Clause:

The wire used for the fabrication of wire mesh cages and for lacing and bracing operations shall be plain zinc-coated mild steel wire. No PVC coating will be required.

PS DK 3.1.2 Gabions

The gabion baskets and mattresses shall be as follows:

Gabion boxes shall be constructed of double twisted, hexagonal wire mesh gabions of nominal 80 mm mesh, with 3,4 mm o/d frame wire and 2,7 mm o/d mesh wire and be complete with partitions at 1 m centres. All wire shall be mild steel to SANS 1580 - 2005, Class A, zinc coated by heavy duty hot dip galvanising to SANS 675 - 2007.

Each basket shall be complete as described in SANS 1200 DK.

PSDK 3.1.3 Geotextile

Add to the Sub-Clause:

Geotextile filter blanket shall consist of "non-woven" spun-bound polyester fabric having a mass of 210 g/m², permeability of 0,003 m/s and multi-direction tensile strength of 16 000 N/m.

PSDK 3.2.1.2 Stone

Add to the Sub-Clause:

The type of pitching shall be +Extra Heavy/+Heavy /+Medium/+Light

In Table 2, Column 2, for extra heavy, replace 300 with 500.

PSDK 3.2.3 Wire netting

Add to the Sub-Clause:

Wire netting for gabion and mattress cages shall be hexagonal steel wire mesh strengthened by selvedges of heavier wire and by mesh diaphragms that divide the cases into 1 m compartments.

Nominal 80 mm mesh shall be used for gabion cages with 2,7 (Refer to PSDK 3.1.2) mm diameter galvanised steel wires.

Nominal 60 mm mesh shall be used for mattress cages with 2,7 (refer to PSDK 3.1.2) mm diameter galvanised steel wires.

Selvedge wire shall be galvanised and the diameter shall be in accordance with Table 3 of SANS 1200 DK.

PSDK 5 CONSTRUCTION

PSDK 5.1.3 Type of cage

New Sub-Clause:

The size of cages for gabions shall be a maximum of 3 000 x 1 000 x 1 000 mm and shall be divided into cells having a volume not greater than one cubic metre. The size of cages for mattresses shall be a maximum of 2 000 x 1 000 x 300 mm and shall be divided into cells having a volume not greater than 0,3 m³.

PSDK 5.1.4 Diaphragms

New Sub-Clause:

Each diaphragm shall be connected in the same manner to the sides and top panels in addition to the bottom panel.

PSDK 5.2.3 Assembly

Add to the Sub-Clause:

All gabion and mattress cages shall be connected to adjacent gabion and/or mattress cages by lacing the adjacent selvedges together with 2,0 mm dia. galvanised steel wire. The lacing shall be in accordance with Sub-Clause 5.1.2.

PSDK 5.2.4 Rockfilling

Particular care shall be taken in the filling gabions and mattresses so as to ensure that the voids in the rockfill are reduced to the minimum that can be reasonably achieved. In order to minimise the voids in the rockfilling, the filling shall proceed in layers not exceeding 300 mm deep and each layer shall be rodded and barred so as to compact the rockfill before filling of the next layer commences. Where appropriate, hand packing of selected rock particles shall be carried out.

PSDK 5.2.4.2 Mattresses used in Revetments and Aprons

Add to the Sub-Clause:

Where gabions and mattresses are placed in exposed positions the rock particles forming the exposed faces shall be specially selected so as to present a fair and even surface.

PSDK 5.3.4 Wired Pitching

Add to the Sub-Clause:

The areas in which wired or grouted wire pitching is to be used will be indicated on site by the Employer's Agent.

PSDK 8 MEASUREMENT AND PAYMENT

PSDK 8.2.3 Extra Over 8.2.2 for Packing Selected Stone for Exposed Face

Add to the Sub-Clause:

The method of selecting and packing stone for exposed faces as scheduled shall be as specified in Sub-Clause 5.2.7 - Special Finish.

SECTION PSGA: CONCRETE (Small works) (As applicable to SANS 1200 GA - 1982)

PSGA 2 DEFINITIONS

PSGA 2.3(a) General

Add to the Sub-Clause:

Adverse weather: Cold weather or weather in which:
(a) the ambient temperature is above 25°C, or
(b) the relative humidity is low, or
(c) the wind velocity is high

or weather in which any combination of these three conditions occurs, and which tend to impair the quality of fresh or hardened concrete or otherwise causes the concrete to have abnormal properties.

PSGA 2.3(b) Quality

Add to the Sub-Clause:

Consistency: The extent, as measured by the slump test, to which fresh concrete resists flow or deformation.

PSGA 2.3(d) Exposure Conditions

Add new Sub-Clause:

Mild Conditions: Conditions under which the concrete is protected from the weather and exposed only to air.

Moderate Conditions: Conditions under which the concrete is :

(a) sheltered from severe rain and is not subject to freezing when wet, or

(b) buried in non-aggressive soil, or
(c) continuously under fresh water.

Severe Conditions: Conditions under which the concrete is exposed or subjected to any of the following:

(a) driving rain
(b) alternate wetting and drying out
(c) freezing when wet
(d) fresh water (at the water-line)
(e) splashing or spraying with fresh water
(f) corrosive fumes or heavy condensation of water
(g) aggressive soil
(h) salt-laden air.

PSG 3 MATERIALS

Add the following Sub-Clause:

PSG 3.2.3 Types of Cement

The type of cement to be used shall be CEM1 42.5 as specified in SANS EN 197-1 common cements, a 75% CEM1 42.5 and 25% PFA blend or 50% slagment and 50% CEM1 shall be used as specified in the relevant section of SANS 1491 and SANS EN 197-1. Any variations to these are subject to the Employer's Agent's approval. Any other type of cement shall be used only when specifically authorised by the Employer's Agent.

PSGA 5 CONSTRUCTION

PSGA 5.1.2 Fixing

Add to the Sub-Clause:

Welding reinforcement as a means of securing it against displacement will not be permitted.

PSGA 5.1.3 Cover

Replace the content of Sub-Clause 5.1.3 with the following

Unless otherwise approved by the Employer's Agent, the cover of concrete over reinforcement shall in no case be less than 40mm.

PSGA 5.2.1 Classification of Finishes

Delete the eighth and ninth lines of the Sub-Clause.

Add to the Sub-Clause:

The finish of the concrete is to be within the tolerances of Degree of Accuracy III as set out in Sub-Clause 6.4.

PSGA 5.2.5 Fixing Blocks for Reinforcing and Fixtures in Concrete

Fixing blocks for the attachment of fixtures may be embedded in concrete provided that the strength and other desirable features such as appearance of the member are not, in the opinion of the Employer's Agent, impaired thereby.

PSGA 5.4.5.5 Adverse Weather Conditions (See PSGA 2.3.d)

Add New Sub-Clause:

Under adverse cold weather conditions, effective measures shall be taken to ensure that the temperature of the concrete, from the time of placing until it has hardened (i.e. about 24 h), is maintained at not less than 5°C. If the atmospheric temperature in the vicinity of the concrete is below 2°C or is expected to fall below 2°C during the curing period (see Sub-Clause 5.4.7), water shall not be used for curing. All surfaces shall be protected from ice or frost damage.

When the ambient temperature is above 32°C, the temperature of the concrete when deposited shall not be allowed to exceed 32°C. Under adverse hot weather conditions, the Contractor shall take all reasonable

steps to reduce to a minimum the placing temperature of the concrete. Stockpiles of aggregates and all metal surfaces in contact with aggregates and concrete shall be shielded from the direct rays of the sun or cooled by being sprayed with water, and windbreaks shall be erected, if necessary, to prevent the initial rapid drying-out of concrete which would otherwise occur before normal curing procedures can be undertaken.

Concrete shall not be placed during periods of heavy or prolonged rainfall.

PSGA 5.4.8.2 Concrete Surfaces

Concrete surfaces shall be finished as indicated in the Schedule.

PSGA 5.5.1.8 Watertight and No-fines Concrete

Add the following new Sub-Clause:

- Watertight Concrete

  35 MPa concrete with the minimum and maximum cement contents of 325 kg/m^3 and 450 kg/m^3 respectively shall be used. For concrete containing extenders the maximum cement content shall be 450 kg/m^3. The water to cement ratio shall not exceed 0.50. All concrete mix designs and casting procedures shall be approved by the Employer's Agent prior to mixing and casting.

- No-fines Concrete

  No-fines concrete shall consist of coarse aggregate, cement and water only. No fine aggregate shall be used. Sandwiching or layering of pours will not be permitted. The Contractor shall cast to the profile depth in one pour.

  The mixing of the cement and water paste shall have the consistency of paint capable of coating each coarse aggregate particle uniformly and sufficiently to form a small fillet at all the contact points of each stone in the aggregate. No sooner than 48 hours after casting, the surface shall be skimmed with a 4 : 1 sand : cement mortar to give a smooth flat steel float finish."

PSGA 5.5.8 Curing and Protection

Amend Sub-Clause 5.5.8 as follows:

After formwork has been removed (see 5.2.5) and as soon as it is practicable in the opinion of the Employer's Agent, all concrete shall, subject to the provisions of 5.5.9.1, be protected from contamination and loss of moisture by one or more of the following methods:

- ponding the exposed surfaces by means of water;
- covering the concrete with sand, or mats made of a moisture-retaining material, and keeping the covering continuously wet;
- continuously spraying the exposed surfaces with water;
- covering the concrete with waterproof or plastics sheeting firmly anchored at the edges;
- The use of an approved curing compound applied in accordance with the manufacturer's instructions.

  Whatever method of curing is adopted, its application shall not cause staining, contamination, or marring of the surface of the concrete. Water used shall comply with the requirements of 3.3.

  When the ambient temperature is 5°C and higher, the curing period shall be a minimum of 7 days. When the ambient temperature is below 5°C, the curing period shall be extended by 72 hours.

PSGA 6 TOLERANCES

PSGA 6.1.1 General

Read "Degree of Accuracy II" for "Degree of Accuracy III" in the third line.

Add to the Sub-Clause:

The permissible deviations for the following elements of the Works shall be to Degree of Accuracy III:

Concrete work which is not exposed after completion of the Works.

PSGA 8 MEASUREMENT AND PAYMENT

PSGA 8.1.1.4 Formwork

Add to the first line between the words "concrete" and "and" the following:

"including forming fillets or splays up to 30 x 30 mm"

PSGA8.4 Concrete complete with formwork (anchor blocks)

Add the following after the last sentence of Clause 8.1.4.1:

"Anchor blocks for pipelines will be measured as volume of either 20MPa mass concrete or 25 MPa reinforced concrete. In both cases, the Tendered rate shall also include the cost of any additional excavations (over and above trenching) to cast the anchor block in the ground. In the case of reinforced anchor blocks, the Tendered rate shall also include the supply and fixing of reinforcing to the Employer's Agent's detail (up to 100 kg steel per m^3 of concrete).

PSGA 8.4.1 Prescribed Mix Concrete

Delete from the Sub-Clause all but the first sentence.

SECTION PSL: MEDIUM PRESSURE PIPELINES (Applicable to SANS 1200 L – 1983)

PSL 2.4 ABRREVIATIONS

Add the following:

MPVC : Modified polyvinyl chloride
PE : Polyethylene

PSL3 MATERIALS

PSL3.1 General

Amend the first paragraph of Sub-Clause 3.1 as follows:

Pipes and fittings shall be of the types specified in the schedule or in the project specification and, unless otherwise required in terms of the project specification, they and their couplings shall be capable of withstanding the applicable test pressure. All pipes and fittings shall be supplied complete with couplings and jointing material.

Satisfactory temporary end covers shall be provided for the protection of threads, flanges, and prepared ends of plain ended pipes and fittings, and to prevent damage to internal lining during transportation and during on site.

The materials and construction of all pipes, fittings, valves and specials shall comply with the appropriate SANS, BS, API or other appropriate specification, whether stated or not, and shall be approved by the Employer's Agent. Only full-length pipes bearing the relevant standard's mark will be acceptable. Cut pipes shall only be used at pipe junctions to position valves and specials as shown on the drawings, and at connections to structures. When laying the pipes the markings shall be visible from above.

A minimum cover of 1,0 m over pipelines shall be maintained under roads and sidewalks, and a maximum cover of 1,5 m where other services are encountered or where gradients of roads require this.

Communication pipes shall only be of polyethylene (PE) with a minimum diameter of 40 mm and shall be installed in accordance with the drawings. In the case of erven smaller than 400 square metres, a diameter of 25 mm may be used to supply not more than two residential properties. House connections shall be installed as shown on the Drawings. No holes larger than 25 mm in diameter shall be drilled into PVC pipes for house connection saddles.

The Contractor shall be responsible for the structural and hydraulic design of all bends and fittings where these are not standard off the shelf items designed and guaranteed by the manufacturer for the purpose intended.

The Employer's Agent shall at all reasonable times have free access to the place where the goods are manufactured for the purpose of examining and sampling the materials and goods, and if necessary for

supervising the testing and marking of goods. The manufacturer shall supply free of charge every facility and all labour required for such examination, sampling, inspection, testing and marking before delivery and shall provide and maintain in good order suitable, convenient and accurate apparatus for testing goods."

PSL3.4.1 General

Amend this Sub-Clause as follows:

The pipes shall be hydraulically tested before leaving the factory to the test pressure specified in Sub-Clause 7.3 of SANS 1200 L. The methods of sampling and testing of the manufactured pipes shall comply with Sections 6 and 7 of SANS 719.

The tests shall be carried out at the place of manufacture and at the expense of the Contractor. Upon delivery of the goods concerned the Contractor shall submit a signed certificate giving results of the tests and certifying that the goods concerned have been manufactured in accordance with this specification."

PSL 3.4.4 Fittings and Specials

Add to the Sub-Clause:

All steel bends, fittings and specials shall be fabricated to the dimensions and details shown on the drawings and/or described in the Bill of Quantities.

The sides of taper pieces shall diverge at an angle of not more than 19° to each other.

The bend, fitting, and special fabricator shall supply written confirmation that all hand welding has been carried out by coded welders.

Bends, fittings, and specials ≥DN600 shall have the internal lining and external coating made continuous ("made good") as specified elsewhere for welded joints on coated and lined pipes.

Bends, fittings and specials shall be manufactured and tested in accordance with the specification for straight pipe and additionally with Section 8 of BS 534. The nominal dimensions of each bend, fitting and special required are itemised in the Bill of Quantities and/or on the drawings and 'exact length' tolerances shall be adhered to. All plain ends on bends, fittings and specials shall have the plain ends prepared for butt welding except those plain ends that are to be jointed with adaptor joints.

Bends shall generally be of the segmented type except where otherwise stated or shown on the drawings.

The Contractor will be responsible for providing and fixing strengthening webs, crotch plates, gussets, etc. as shown on the drawings and as may be necessary to prevent excessive deflection or deformation of fittings and specials when subjected to hydraulic tests and the rate for the work will be deemed to include for the provision of this reinforcing wherever necessary.

Bends shall be fabricated in accordance with the Table below.

Deflection of Angle	
Up to and including 3 °	One pipe end scarfed on site
Exceeding 3 ° and up to and including 9 °	Mitre cut (two pipe ends scarfed on site)
9 º and larger but less than 15 º	2 segment bend
15 º and larger but less than 45 º	3 segment bend
45 º and larger but less than 60 º	4 segment bend
60 º and larger but less than 75 º	5 segment bend
75 º and larger but less than 90 º	6 segment bend

Bends greater than 90º shall be fabricated from combinations of items from the table above.

Shop drawings of bends, fittings and specials shall be submitted to the Employer's Agent for approval prior to manufacture.

All flanged bends, fittings and specials shall be hydraulically tested at the fabricator's premises to the same pressure that they will be subjected to during the hydraulic testing of the completed pipeline. No visible signs of leakage will be permitted.

PSL 3.4.5 Puddle Collars and Anchoring Flanges (New Sub-Clause)

Add new Sub-Clause:

Puddle collars and anchoring flanges used as pipe anchorages shall be of the same dimensions as corresponding flanges but those cast into concrete walls are to be undrilled. The collar/flange shall be capable of transmitting a longitudinal force 33% greater than the internal hydraulic pressure to be applied when testing, multiplied by the area of the bore and, under that condition, the stress in the material shall not exceed its yield stress.

Where puddle collars are shown on the drawings as being 20 mm thick, those collars are not required to transmit thrust, their purpose being to assist with the waterproofing of the concrete chambers by increasing the path that ground water might have to take to enter the chambers.

Where polyethylene pipes are cast into concrete structures, they shall be specially prepared and adapted by positioning a custom-made tight-fitting natural rubber sealing sleeve around the circumference of the pipe and in the case of structured-wall pipe creating shear keys through removing small segments of the outer wall. The rubber seal shall be 10 mm thick and 200 mm wide or 80% of the width of the wall and shall be 60-65 shore hardness, with a vulcanised joint. It shall need to be stretched over the pipe circumference to ensure a tight fit.

PSL3.7 OTHER TYPES OF PIPES

PSL 3.7.1 PVC pipes and fittings

Add to the Sub-Clause:

PVC pipes shall comply with the requirements of SANS 966-1 (PVC-U) or SANS 966-2 (PVC-M) for class 12 pressure pipes and shall be fitted with spigot and socket joints with rubber sealing rings.

Except for bends, which shall be of PVC with a factory-made socket joint at one end in accordance with the above specifications, all fittings for use with PVC pipes shall be of cast iron, with wall thicknesses in accordance with SANS 546 and socket dimensions in accordance with SANS 966. Only fittings that the General Manager: Water and Sanitation has approved shall be used with PVC pressure pipes. Welded adaptors may also not be used with PVC pressure pipes.

Acceptable nominal pipe diameters for PVC pressure pipes are 75 mm, 90 mm, 110 mm, 160 mm, 200 mm, 250 mm, 315 mm and 400 mm; 75 mm diameters shall only be allowed when a network analyses shows that the water demand for firefighting is satisfied. 401-2

All PVC pipes and fittings shall, prior to delivery, be factory-tested to 4,2 times the specified working pressure, and a certificate to this effect shall accompany all deliveries. PVC products shall be stored away from sunlight and shall be backfilled as soon as practicable after having been laid.

PSL 3.7.2 Polyethylene (PE) pipes and fittings

Add to the Sub-Clause

PE pipes shall comply with the relevant requirements of SANS 4427. Pipe fittings and couplings for PE pipes shall be Plasson or approved equivalent compression fittings and shall be manufactured for a working pressure of 1 600 kPa. Only fittings that the Employer's Agent has approved shall be used with PE pressure pipes.

PSL3.7.3 GRP pipes (SANS 1748-1: 1998)

Glass reinforced pipe and fittings shall conform to ASTM D3262, ASTM3754, AWWA C950 and SANS 1748 -1 : 1998 Glass Fibre Reinforced Thermosetting Plastics (GRP) pipes Part 1 : Pipes for Water Supply , Sewerage or drainage. GRP pipe shall be jointed with double bell couplings. Pressure rating, stiffness and diameter as detailed in the bill of quantities and drawings.

Asbestos Cement or Fibre Cement production shall not be used.

PSL 3.8 JOINTING MATERIALS

PSL 3.8.2.1 Flexible Couplings

Delete the Sub-Clause and substitute the following:

Where ordered, steel flexible couplings are to be of the "Viking Johnson"/"Klamflex"/ "Aqualok" or similar approved type without central registers, each comprising one centre collar, two special flanges, two rubber rings and hot dipped galvanised mild steel bolts.

Steel couplings shall be assembled strictly in accordance with the manufacturer's instructions and all bolts shall be torqued to the value recommended by the manufacturer. On completion of hydraulic pressure testing of the installation, the entire joint shall be protected as described in Clause PSL 3.9.3.8.

The Tendered prices for laying and jointing are to include for the supply of all necessary materials, plant and labour to complete the joint.

Flexible couplings shall conform generally to Clause 15 of BS 534 for slip-on type couplings and shall be of approved manufacture. They shall be capable of being tightened and released without damaging or improperly distorting the rubber seating rings and shall be designed to prevent the rubber rings being blown out under pressure or sucked in under vacuum.

The steel used shall conform to the appropriate British Standard Specification and each coupling is to be capable of withstanding the test pressure applicable to the pipes with which they are to be used without exceeding a stress in the steel of 67% of the yield point.

Mild steel couplings shall be protected by an approved epoxy coating system such as “Copon KSIR88” (or similar approved) within 4 hours of abrasive blast cleaning the metal surfaces of the coupling in accordance with Swedish Standard SIS 05 5900 Grade SA 2.5. Nuts, bolts and washers shall be hot dipped galvanised. The plain end of the pipe shall be properly prepared, and in the case of steel pipes before corrosion protection, so as to accept the flexible coupling.

Adaptor couplings and anchoring adaptor joints shall comply with the above specification for flexible couplings and be of a similar design, but one end shall be flanged to enable connection of plain ended pipes to flanged joints. The adaptor joints are to be complete with bolts and nuts for connecting the flanged joint to the anchoring flange situated generally 300 mm to 400 mm from the plain end of pipe. All bolts, nuts and washers are to be hot dipped galvanised. In order to anchor the plain ended pipe to the flanged joint all of the bolts for the flanged joint are to pass though the anchoring flange and are to be fitted with nuts and washers at the flanged joint and on either side of the anchoring flange.

PSL 3.8.3 FLANGES AND ACCESSORIES

PSL 3.8.3.1 Bolted Connections (New Sub-Clause)

Add new Sub–Clause:

All flanges, gaskets, bolts, nuts washers and other appurtenances required for the execution of the work under this Contract shall be supplied and installed by the Contractor. All flanges, not jointing to existing flanges, shall be in accordance with SANS 1123, Table 1600/3. The Contractor shall be responsible for ensuring that the flange drillings on all pipeline components including valves, fittings, specials and fixtures etc. are compatible.

All gaskets for flanged joints shall be 3 mm thick, full face rubber insertion in accordance with the requirements of BS 3063. All bolts and nuts for jointing of pipe flanges shall be in accordance with SANS 1700.

Where services are relocated or connected to existing pipes, the type, drilling pattern and sizes of flanges or special valves shall match those of existing flanges and valves and shall be determined on site by the Contractor prior to ordering of materials.

Flanged bolted connections shall comply with the following:

- All flanges shall have a raised face.
- Temporary end covers shall be provided by the Contractor for protection of flanges, and prepared plain ends of pipes and fittings to prevent damage to internal lining during transportation and during handling on site.
- All piping and flanged surfaces shall be cleaned before connections are made.
- The (raised) faces of flanges that are in to be in contact with gaskets shall be masked and shall not be painted or coated. The mating flange shall then receive one coat of rust inhibitor (Plascon Rustix 84 or equal approved). Care shall be exercised to ensure that after the application of all coatings there are no runs or drips on the mating surfaces of the flanges and that the flange profiling is clearly visible over the entire face. Excessive coating build up in flange bolt holes that could snag bolts will not be permitted.
- Flanged joints shall be connected with the specified bolts, nuts and washers all of which are to be supplied by the Contractor.

- All bolts, tie-bolts, nuts and washers shall be galvanised to SANS 121:2000 and shall comply with the relevant requirements of SANS 135 – 1985 and SANS 136 – 1985 where applicable.

- The length of each bolt shall be such that after the bolt has been tightened, the end of the bolt shall project beyond the outer face of the nut, but not by more than two threads. Tie-bolts on restrained/anchoring couplings shall be fitted with "backing nuts" and washers.

- Each flanged joint is to be fitted with an approved and suitably rated gasket and sealed watertight such that there will be no visible sign of leakage under the specified factory and field test pressures and under the in-service working conditions (pressures).

- All bolts are to be tightened in a predetermined pattern with opposing bolts being tightened sequentially. When all bolts are tight, each bolt is to be torqued to the required/recommended torque in a predetermined pattern with opposing bolts being tightened sequentially.

- All bolt threads shall be liberally coated with "Copper slip" or similar approved compound prior to assembly. Upon completion, bolt heads, washers and nuts shall be wrapped with the "Denso Mastic Blanket System" comprising of a priming solution, mastic blanket, petrolatum tape and lay-flat sheeting as described in Clause PSL 3.9.3.8.

PSL 3.9 CORROSION PROTECTION

PSL 3.9.2 Steel Pipes

PSL 3.9.2.0 Holiday Testing – Epoxy Linings and Coatings (New Sub-Clause)

Add new Sub-Clause:

All Holiday Testing of epoxy linings and coatings shall be carried out with an instrument approved by the Employer's Agent. The sparking detection test shall conform to the standards as set out in SANS 1217:2001 and BS 3003 Part 1. The Contractor shall familiarise himself with the dielectric strength (breakdown strength) of all the coatings and linings he works with for the different pipe sizes. The Contractor shall also have an in depth knowledge of the Holiday Testing equipment he works with, in order to calculate the Corona discharge effect for the typical brush being utilised, with reference to the specific ambient conditions for any specific test.

All Holiday Testing shall be executed at a voltage which is set at 50% of the value of the dielectric strength of the lining or coating being tested. The Contractor shall carefully analyse the loss in test voltage as a result of the Corona Effect, specific to the ambient conditions surrounding the test. The test voltage of the Holiday Testing equipment shall be adjusted such that the voltage drop as a result of the Corona Effect will be taken into account when the actual 50% threshold of the dielectric strength is calculated.

The Holiday Test equipment shall be calibrated by an approved supplier and checked every 30 minutes or every time a test at a different location is started. Each piece of equipment shall have a unique identification number with calibration certificates and detail of equipment utilized shall be submitted to the Employer's Agent for approval. Method statements for the process of holiday testing shall be submitted to the Employer's Agent for approval.

The correct equipment for the type of application shall be utilized. For example, where pin holes have been repaired and re-testing for effectiveness of repair work being done, the Contractor shall utilize the correct equipment to effect same and this shall include the use of a pencil brush which concentrates the efforts of holiday testing at the repair. Where spark tests are performed on tape wrap systems, the minimum brush width shall be 300 mm. The brushes utilized shall be brass bristle cone brushes. The typical brush speed shall be 200 to 300 mm/sec when doing spark tests

The Contractor shall, at his expense, test each and every surface area, that is internal lining as well as external coating, during construction as per this specification. Testing for holidays shall be done after inclusion of materials, manufactured specials and equipment, as well as pipes, into the permanent works. Any defects found shall be repaired and the costs for remedial work shall be deemed to be included in the Tendered rates for the construction of the pipeline. These tests and results shall be recorded on the quality control plan as approved by the Employer's Agent.

PSL 3.9.2.1 Steel Pipes of Nominal Bore up to 150 mm

All steel pipe specials ~~fabricated for the scour pipework and air valve header pipework~~ of nominal bore up to 150 mm shall be factory coated and lined with hot-fused Rilsan (nylon polyamide 11) coating to a DFT

of at least 350 microns generally in accordance with Sub-Clause 3.9.2.2 and in accordance with the epoxy manufacturer's specifications for preparation of the receiving surface and application of the product.

PSL 3.9.2.2 Steel Pipes of Nominal Bore over 150mm

Unless otherwise scheduled, all mild steel specials up to DN500 in size ~~fabricated for meter and isolating valve and off-take chambers~~ shall be factory coated and lined with hot-fused Rilsan (nylon polyamide 11) coating to a DFT of at least 350 microns generally in accordance with Sub-Clause 3.9.2.2 and in accordance with the epoxy manufacturer's specifications for preparation of the receiving surface and application of the product.

Unless otherwise scheduled, all mild steel specials larger than DN500 ~~and not part of the cement mortar lined pipe system~~ shall be factory coated and lined with a solvent-free two-pack glassflake surface-tolerant epoxy paint (DENSO S.T. 100 or similar approved) applied in two layers to a total DFT of at least 350 micrometres generally in accordance with Sub-Clause 3.9.2.2 and in accordance with the epoxy manufacturer's specifications for preparation of the receiving surface and application of the product.

Unless otherwise specified, all steel pipes, fittings and specials with a cement mortar lining shall be in accordance with the requirements of the Australian Standard ASW 1281:2001 with thicknesses as stated in Clause 3.9.1 (and 3.9.2 for DN 250 pipes).

PSL 3.9.3.1 Preparation of Steel Surfaces for Repairs and/or Reinstatement of Internal Lining and/or External Coating (New Sub-Clause)

Add new Sub-Clause:

The following method is applicable for the preparation of all exposed steel surfaces prior to the carrying out of any repair procedure to internal linings and/or to external coatings. This specification is applicable to all pipe steel surfaces which have been stripped of their corrosion protection layers, internally or externally, as a result of the manufacturing of specials, construction activities or pipe laying, welding and/or damages caused by handling or latent defects in application.

Degreasing:

All bare metal surfaces shall be degreased in order to remove grease and oil from the pipe surface as a first step in the preparation process ie before grit blasting and/or power brushing starts. Degreasing shall be carried out using a non-volatile solvent (e.g. "Aquasolve", "Chesterton Nr. 261 Safety Solvent Cleaner" or similar approved substance). The surface shall then be cleaned with potable water and left to dry completely before the next step is taken.

Grit Blasting – Internal Lining Repair:

Grit blasting of bare metal surfaces shall take place after degreasing of the area. The finished grit blasted surface shall be 75 micron with an angular profile.

Transition areas from epoxy internal lining, to bare metal which have been grit blasted, shall be smooth without rough edges or flaking appearances.

All grit blasting within the pipe line that is under construction, shall be performed by way of a "vacuum blast"process in order to limit the generation of dust.

Grit blasting shall, under all circumstances, be carried out using equipment suitable for the size of the work to be undertaken.

The Contractor shall provide the Employer's Agent with a method statement for approval for each type/location of grit blasting, before work commences.

Power Brush – External Coating Repair:

Power brushing of bare metal surface shall take place after degreasing of the area as specified. The area that has been power brushed shall be free from rust, laitance, dust, oil or other deleterious matter before the application of primer. Any areas in the region where power brushing took place shall be free from signs of disbonding of lining and/or coating, once power brushed. The surface finish, once power brushing has been completed, shall conform to minimum St2 standard.

PSL 3.9.3.2 Preparation Mixing and Application of Epoxy Compounds (New Sub-Clause)

Add new Sub-Clause:

When mixing two part epoxies the base and activator shall be mixed in accordance with the manufacturer's specifications. Mixing in the original container will only be permitted by means of methods that ensure full integration of different parts of the compound into a homogeneous compound with the characteristics as

intended by the manufacturer. The different parts of the compound shall not be diluted. Mixing shall only be allowed with full batches and reduction of volumes from mixing packs by means of weight or volume measurement, which will result in smaller portions to be mixed, will not be allowed. In the application of the epoxy the following shall be strictly in compliance with the manufacturer's instructions:

- Method of application (type of brush or roller.)
- Over coating time.
- Temperature range for application.
- Method of mixing base and activator.
- Number of coats to achieve the specified thickness.
- Safety aspects, e.g. eye and hand protection, ventilation, fire precautions, etc.
- Note that roller and brush applicators shall be replaced once the product application expiry time has been reached on any specific applicator tool.

Uncured epoxy shall be regarded as being toxic and shall be handled in accordance with the manufacturer's instructions. Adequate lighting and ventilation shall be provided whilst working within the pipeline.

Only solvent free epoxy repair kits shall be utilized to repair the internal linings of the pipeline. This specification refers to "two part epoxy" as an epoxy repair kit which consists of a base and an activator approved by the Employer's Agent and could be approved products similar to "Denso ST100", "Sigma SF 523", "Nordbak", etc.

For the repair of cement mortar linings, "Epidermix 338" or similar approved will be required.

The Contractor's Tendered rates for the laying of the pipe shall be deemed to include for all the repairs and make-goods that have to be effected in order to deliver a serviceable and acceptable pipe line. (This excludes such repairs as instructed by the Employer's Agent as a result of manufacturing defects, if any).

Two part epoxy may only be applied on steel surfaces prepared as specified in PSL3.9.3.1.

PSL 3.9.3.3 Making Good of Cement Mortar Lining at Welded Joints (New Sub-Clause)

Add new Sub-Clause:

When straight steel pipes are cut, the cement mortar lining is to be cut back between 50 mm and 75 mm from the cut end of the pipe and "chamfered" by approximately 15 degrees to provide a positive dove-tail joint for the epoxy mortar repair plug after butt welding.

The surfaces are to be prepared as specified in PSL3.9.3.1.

A 50 mm wide by 20 mm thick band of "Epidermix 338" or similar approved epoxy, shall be applied internally on the uncoated steel adjacent to the cement mortar lining. For pipes that are too small for internal access for hand repairs, the plain end of the adjoining pipe shall be pushed into the bellmouth (or into the external sleeve when there is no bellmouth) in such a way that the epoxy band is compressed and makes contact with the transverse face of the cement mortar lining of both pipes. The excess material that is squeezed into the bore of the pipes is to be removed by drawing a suitable plug that is 5 mm smaller than the bore of the cement mortar lining across the joint. The plug that is used shall be such as to render an even and smooth finish to the epoxy at the joint. The timing of when the plug is pulled through is critical and shall be carefully controlled.

For pipes large enough for safe internal access, the cement-mortar lining shall be made-good with the same materials, but by hand.

PSL 3.9.3.4 Repair and Making Good of Solvent Free Epoxy Linings (New Sub-Clause)

Add new Sub-Clause:

Pipes with linings damaged prior to acceptance by the Contractor shall be marked and recorded by both the Contractor and the Employer's Agent's Representative and then repaired by the Contractor. The payment rate for repair shall be made at the scheduled rate.

Once the Contractor has accepted pipes with undamaged linings from the Employer, any subsequent damage to the lining in the pipes shall be repaired by the Contractor at his expense.

All making good of internal solvent free epoxy linings at welded and flanged joints that is required to ensure continuous internal corrosion protection to steel surfaces shall be carried out strictly in accordance with the manufacturer's specifications. The Contractor shall ensure that making good of linings is carried out

progressively as the pipe is being laid and shall not be permitted to lag behind for more than three pipe lengths at each working front.

PSL 3.9.3.5 External Corrosion Protection of Factory Welded Joints and Coating Repairs (New Sub-Clause)

Add new Sub-Clause:

All ~~DN 600~~ steel pipes that are to be field-welded shall be supplied with the external coating cut back 100 mm from each pipe end. Where pipes are to be cut, either on site, or for the purpose of fabricating bends, fittings and specials, or in the event of the pipe coating being damaged, the pipe coating shall be cut back 100 mm from the intended cut area before the pipe is cut. Damp hessian sacking or other suitable material is to be temporarily fixed around the pipe to prevent damage to the pipe coating during welding operations. Once welding is complete, and all weld splatter and burnt coating has been removed, the welded pipe joints shall be wrapped in the following manner.

The following specification is based on "Denso" products and systems. Alternative products and procedures may be proposed by the Contractor and, if approved by the Employer's Agent, they may be used. Irrespective of which products are approved by the Employer's Agent and used by the Contractor, all procedures shall be carried out strictly in accordance with the Contractor's method statements which shall conform to the manufacturer's recommendations.

A fundamental outcome is a sound and continuous coating that is free from wrinkles and that does not have any entrapped air pockets or any air bubbles.

Surface Preparation:

The bare metal shall be cleaned and wire brushed to minimum St.2 standard and, degreased with white spirit. The adjacent pipe coating shall be cleaned to a minimum of 300 mm either side of the joint and the edges "feathered" to achieve a tapered transition over a distance of 100 mm. The sound, parent coating surface shall be roughened with sandpaper over an area 250 mm either side of the joint.

Priming:

The entire pipe and coating surface over a length of 250 mm on either side of the joint shall be primed using "Denso Primer D" (or equivalent approved). Care shall be taken to obtain a thin even film with no runs or sags. The primer shall be allowed to cure until "tack dry" before the application of the tape commences. Priming may only be carried out on those areas that are to be wrapped that same day. If primed areas are to be left overnight, those areas shall be re-primed before wrapping.

Profiling Tape:

A 1,5 mm thick x 50 mm wide "Denso Mastic Sealing Tape" (or equivalent approved) shall be applied to the full circumference of the weld bead in accordance with the manufacturer's specifications. Care shall be taken to ensure a smooth profile and to avoid air bubbles being trapped beneath the tape. (Note: The profiling tape may be omitted at the discretion of the Employer's Agent. Tenderers shall nonetheless allow for the profiling tape in their Tendered rates).

Tape Wrapping:

The joint shall then be wrapped (minimum 55 % overlap) with "Denso CPT 1250/300 Polyethylene/Bitumen" tape starting at the roughened section (250 mm from the welded joint) in accordance with the manufacturer's requirements to create a 500 mm wide wrapping, centred over the welded joint. A 100% overlap is required on the first and last revolutions of the tape wrapping operation. It is important that tension in the tape be released when the wrapping of the last half circumference of the pipe. The Contractor shall ensure that the wrapping overlaps or covers a minimum of 150 mm of the pipe coating. A secondary or outer tape wrap layer is then to be applied over the first layer with a 10% tape overlap.

An alternative tape wrapping system that may be used is the "Densotherm 35 Hot Applied Bitumen Tape" system. The procedures are similar to those for the "Denso" system described above except that the underside of the tape shall be heated as it is applied and the overlaps and seams of the tape are to be sealed by means of a heated tool.

PSL 3.9.3.6 External Corrosion Protection of Shop-Fabricated Pipe Bends and Fittings (New Sub-Clause)

Add new Sub-Clause:

The external coating of shop fabricated bends and fittings shall be carried out as follows:

- Where a substantial part of the external coating on the parent pipe is intact, the coating repairs/make good shall be carried out in accordance with PSL 3.9.3.5 or

- Where black (uncoated pipe has been used), the coating shall be carried out in accordance Umgeni Water's specification for "Pipe Lining System 2: Solvent-Free Epoxy Lining" or

- Where only a relatively small proportion of the external coating on the parent pipe remains, all of the remaining coating shall be removed and the entire bend/fitting shall be coated in accordance specifications for "Pipe Lining System 2: Solvent-Free Epoxy Lining".

All crotch plates and wrappers/collars shall be coated in accordance with project specification for "Pipe Coating System 1: Solvent-Free Epoxy Lining".

After application of the SFE coatings to the crotch plates and collars/wrappers, approved mastic (refer PSL3.9.3.8) shall be placed in all crevices that may become moisture traps.

No additional payment will be made for any of this work as the costs are deemed to be included in the scheduled rates for pipelaying.

PSL 3.9.3.7 External Corrosion Protection of Site-Fabricated Pipe Bends and Fittings (New Sub-Clause)

Add new Sub-Clause:

The coating repairs/make good shall be carried out in accordance with PSL 3.9.3.5.

PSL 3.9.3.8 Corrosion Protection of Buried Flanges and Flexible Adaptor/Anchoring Joints (New Sub-Clause)

Add new Sub-Clause:

All buried flanges and flexible joints and adaptor/anchoring joints and their associated bolts, nuts and washers, shall, notwithstanding that the flexible and adaptor/anchoring joints will be epoxy coated as specified elsewhere, be protected as described below.

(Note: This specification is based on a "Denso" system. Alternative products may be used, subject to approval by the Employer's Agent).

Surface Preparation:

The entire surface area of the flange/adaptor/anchoring joint, and its bolts, nuts and washers, up to no less than 250 mm either side of the joint, shall be cleaned of all dirt and other deleterious matter. The cleaned area, up to 200 mm either side of the flange/adaptor/anchoring joint, shall then be wire brushed.

Priming:

The cleaned flange/adaptor/anchoring joint, bolts, nuts, washers and the adjoining 200 mm length either side shall be primed with "Denso Priming Solution", or if moisture is present, with "S105 Paste".

Application of Mastic Blankets:

Narrow strips cut from "Mastic Blanket" shall be applied to the flange/adaptor/anchoring joint to achieve a smooth profile with a 50 mm splayed fillet being formed at the joint/pipe interface. Care shall be taken, particularly at bolts, to avoid the formation of air pockets. Complete "Mastic Blankets" shall then be applied (mastic side down) to the flange/adaptor/anchoring joint until the flange/adaptor/anchoring joint is completely enveloped.

The blanket shall be overlapped at least 50 mm and shall extend at least 150 mm along the pipe barrel on each side of the flange/adaptor/anchoring joint. The ends of the blanket shall be bound to the barrel of the pipe on each end with 100 mm wide "Tape". The "Tape" overlaps shall be 50 mm and shall extend 100 mm onto the blanket and 150 mm onto the pipe barrel.

Application of Protective Sheeting:

The entire flange/adaptor/anchoring joint shall then be wrapped with 350 micron polyethylene sheeting which shall end 400 mm beyond the joint. The protective sheeting shall be secured to the pipe barrel and along the seam with 48 mm wide "Adhesive Tape".

PSL 3.9.3.9 Coating of Permanently Exposed Pipes/Fittings (New Sub-Clause)

Add new Sub-Clause:

All pipes which are to be permanently exposed shall, in addition to the specified corrosion protection at flange/adaptor/anchoring joints, be protected with the "Acrylic Pipeline Tape (Steelcoat 500)" system or

similar approved UV resistant coating. The pipe surface shall be prepared and the coating applied in strict accordance with the manufacturer's instructions.

Surface Preparation:

The pipe surface to be wrapped shall be cleaned of dirt, grime, grease and other deleterious matter, using white spirit if necessary and then allowed to dry thoroughly.

Priming:

"Denso Primer D" shall be applied to the prepared surfaces at a nominal coverage rate of 8 m² per litre. Care shall be taken to obtain an even film with no runs or sags. Only those areas that are to be wrapped the same day shall be primed. If primed areas are to be left overnight, these areas shall be re-primed before wrapping.

Tape Wrapping:

The joint shall be spirally wrapped (minimum 55% overlap) with "Acrylic Tape" (or approved equivalent) in accordance with the manufacturer's requirements such that the start and end points are located at buried sections of the pipe, before it daylights. A 100% overlap is required on the first and last revolutions of the tape wrapping operation. It is important that tension in the tape be released when the wrapping of the last half circumference of the pipe.

Final Coating:

One coat of "Densoflex Fire Retardant" shall be applied to the exposed pipe at a nominal application rate of 3 m² per litre.

PSL3.10 Valves and Hydrants

Delete the Sub-Clause and replace with the following:

Unless otherwise scheduled, all valves shall comply with the requirements of Department of Water and Sanitation (DWS) 2510/01 for supply of valves, DWS 2510/2 for hydraulic actuators to be fitted to valves of various types, DWS 2020 for Quality Assurance and Procedures and DWS 9900 for corrosion protection of valves, flow-meters and outlet pipes.

PSL 4 PLANT

PSL 4.4 Packing (New Sub-Clause)

Goods should be suitably packed in such manner as will ensure safe and efficient transport by road or rail, and the Contractor shall include in his prices for whatever packing may be necessary in this respect. Small items particularly liable to damage or loss in transit should be crated. All crates and packing material shall, after use, become the property of the Employer, unless distinctly specified otherwise, or if returnable, shall be so at the Contractor's expense.

PSL 5 CONSTRUCTION

PSL 5.1 LAYING

PSL 5.1.3 Keeping Pipelines Clean

Add to the sub-Clause:

The Contractor shall take all of the steps necessary to prevent flooding of the Works and hence ensure that all work is carried out in the dry, and that the ingress of dirt and or dirty water into the pipes is prevented. Should foreign matter have entered or remained in the pipelines, the Contractor shall arrange for the mains to be cleaned (at the Contractor's expense) to the satisfaction of the Employer's Agent prior to testing.

PSL 5.1.3.1 Cleaning of Valves and Fittings (New Sub-Clause)

Add new Sub-Clause:

All flanges, valves, fittings and equipment are to be installed in pipe work only after they have been thoroughly cleaned. Flange faces shall be checked for damage before being incorporated into the permanent works and any damage shall be reported to the Employer's Agent.

PSL 5.1.5 Pipe Support (New Clause)

Add new Sub-Clause:

Temporary pipe supports may be used to assist setting up and assembly. However, it is preferred that permanent pipe supports are installed as soon as possible to minimize double handling and/or omission during construction.

Permanent pipe supports shall be constructed as indicated on the drawings or as directed on site.

Before testing, all permanent supports shall be complete and all temporary supports removed, unless otherwise agreed by the Employer's Agent.

PSL 5.1.6 End Caps (New Sub-Clause)

Add new Sub-Clause:

The Contractor shall, at the end of each days work, fit end caps to the open ends of the pipeline under construction. The end caps shall be manufactured in such a manner that they can be fitted to seal off the pipeline to the extent that it is totally dust and water proof. The end caps shall be able to withstand a pressure of 5 m head of water externally when fitted.

End caps shall be maintained during non working periods.

The Tendered rates for the laying of pipe shall be deemed to include for the supply, fitment, and maintenance of the end caps.

PSL 5.1.7 Marker Posts (New sub-Clause)

Pre-cast concrete marker posts as shown on the drawings and painted white in colour shall be set at all horizontal direction changes and where otherwise indicated by the Employer's Agent.

The standard marker post rate shall include the supply and erection of painted, inscribed posts. The rate shall be inclusive of erection and shall include for all necessary excavation, mass concrete footing and formwork.

PSL 5.2 JOINTING METHODS

PSL 5.2.2 Flanged Joints

Add to the Sub-Clause:

Before being brought together, the ends of the pipes, fittings, couplings and flanges are to be inspected and cleaned to ensure that all parts forming the joint are undamaged and clean.

When jointing flanges, the faces shall be cleaned thoroughly and approved jointing material (cement fibre or other approved gaskets on flanged joints), cut properly to size, is to be inserted immediately before bringing the two flanges together. Before closing the joints, the flanges shall be parallel to each other, with all bolts inserted in the bolt holes. After the fittings have thus been aligned and well supported, the joint shall be bolted up to a uniform tightness using torque wrenches to achieve the required compression force on the gasket.

If and where full face gaskets are used, the jointing material shall be flush with, or protrude beyond, the outer circumference of the flange (this in not applicable to raised face flanges). On completion of the joint, the flanges and bolts shall be protected as described in Clause PSL 3.9.3.8.

PSL 5.2.3 Welding (Steel Pipelines DN 600 or Greater)

Delete the title and replace with **"Welding (Steel Pipelines)".**

Delete the 1st sentence and replace with:

Field welding of steel pipelines shall be carried out in accordance with the relevant requirements of the latest version of API 1104. The Contractor, prior to commencement of welding, shall produce a qualified welding procedure in accordance with the latest version of API 1104, for the intended sizes, processes, positions and consumables to be used on this project.

Welding shall be carried out by welders who are competent in terms of the procedure approval test given in API 1104. Prior to commencement of welding, the current qualification of each welder shall be produced in accordance with the welding procedure. Should constant repairs be required on welds carried out by one particular welder, the Employer's Agent may request that the welder be re-tested or removed from the project.

Add to the Sub-Clause:

Radiographic Examination of Shop Welds

The Contractor shall provide a manufacturer's certificate proving that the following examinations were carried out in the factory:

i) ONE HUNDRED percent radiographic examination of all welds deposited by an approved automatic process

ii) ONE HUNDRED percent radiographic examination of all welds deposited manually or semi-automatically, and repairs to welds done by an automatic process.

In addition, the Contractor shall include in his prices for the manufacture of pipes, bends, fittings and specials for the cost of carrying out, under the supervision of the inspector appointed by the Employer, examination of shop welds on the following basis:

(a) Field Welds

Radiographic testing will be performed on butt welds and dye penetrant testing on fillet welds. All welds will be tested and adjudicated in accordance with API 1104. Radiographic testing of butt welds is to be carried out on 100% of the welds.

Repairs of welds will be permitted in accordance with approved repair procedures. Repairs shall be re-examined using the relevant non-destructive testing method. All costs associated with the repair of defective welds will be borne by the Contractor.

(b) Fabrication of Bends, Fittings and Specials

i) ONE HUNDRED percent radiographic examination of all weld deposited manually or semi-automatically in bends, fittings and specials which cannot be hydraulically tested because they have a plain end.

ii) TEN percent radiographic examination of all welds deposited manually or semi automatically in all flanged bends, fittings, and specials which are to be tested hydraulically.

The Employer's Agent shall in all cases determine which welds are to be radiographed on the quantity basis specified above. All radiographs and records thereof made by the Contractor shall be made available to the Employer's Agent to enable him to determine whether the welds are acceptable or not and no lining or wrapping of pipes shall be permitted until the welds have been accepted by the Employer's Agent. To avoid any unnecessary delays, at· the option of the fabricator, radiographs may be approved by the manufacturer's inspectors subject to them being subsequently submitted to, and approved by the Employer's Agent.

When a section of the weld is shown by radiography to be unacceptable and, if the limits of the deficient weld are not defined by the radiograph, additional radiography shall be carried out at the Contractor's expense until the limits of the deficiency are determined.

Repairs shall be made to defective welds at the Contractor's expense. All repair welds shall be identified with a stamp marking, indicating which welder conducted the repair. Repaired welds shall be radiographed at the Contractor's expense but, after any repair welder has had ten consecutive repairs approved, the extent of the radiography of the repairs conducted by the welder may be decreased by agreement between the Employer's Agent and the Contractor.

Production Testing of Welds (Not applicable to pipes supplied by the Employer)

The Contractor shall also include in his prices for the supply of pipes the cost of carrying out at the factory, non-destructive tests of shop production welds (additional to the qualification tests for welding procedure) on the following basis:-

One pipe from each one hundred pipes produced shall be selected at random and specimens for two guided cold bend tests and one transverse tensile test shall be cut therefrom and tested in accordance with SANS 719:1971, Section 7.

In the case of the guided cold bend tests, where welding is carried from one side only, bend - specimens shall be tested with the rest of the bend in tension; where welded from both sides the specimens shall be tested with the inner and outer welds in tension alternately.

Tensile tests shall be carried out as for the qualification tests.

The pipes from which successfully tested specimens have been taken shall be trimmed to the maximum possible length and shall be accepted by the Employer for payment purposes as full standard pipe lengths.

In the event of the welds of any pipe failing to reach the standard of acceptance, such pipe shall be rejected. Two further plate coupons shall be prepared from different pipes, selected at random by the Employer's Agent, for each specimen that has failed to reach the required standard. In the event of such additional tests proving to be satisfactory repairs to the pipe originally failing any test will be permitted by the Employer's Agent and such repairs and subsequent re-test shall be at the Contractor's expense. In the event of the additional tests also failing to reach the required standard the Employer's Agent shall have the right to reject the entire batch of pipes from which the coupon plates were cut.

PSL 5.2.3.1 Welding Procedure (New Sub-Clause)

Add new Sub-Clause:

Welding shall, unless otherwise prescribed in the approved welding procedure, commence at the top of the joint and proceed downwards. In addition to the root weld, at least two further passes shall be made, none of which is to exceed 3 mm in depth but this is subject to the approved welding procedure.

PSL 5.2.3.2 Aligning (New Sub-Clause)

Add new Sub-Clause:

The alignment of abutting ends shall be such that the offset does not exceed 1,5 mm. Line-up clamps ("dogs") shall not be used for the "fit-ups". The use of "bridges and wedges" or any other method that may reduce the pipe wall thickness when removed or in any way introduce unnecessary stresses into the pipe is forBidden.

PSL 5.2.3.3 Weather Conditions (New Sub-Clause)

Add new Sub-Clause:

Welding shall not be performed under conditions that could affect the quality of the welded joint (e.g. high moisture or windy conditions). Windshields may be used where practical.

PSL 5.2.3.4 Clearance (New Sub-Clause)

Add new Sub-Clause:

The minimum clearance around the pipe during welding shall be 500 mm or such other minimum distance that may be required to facilitate compliance with the approved welding procedure. When welding in a trench, adequately sized "fox holes" shall be excavated/ formed so as to provide adequate access for the welders.

PSL 5.2.3.5 Visual Inspection (New Sub-Clause)

Add new Sub-Clause:

100% of each joint will be examined and the following criteria shall be met:

All welds shall be substantially uniform in appearance with the inner and outer weld beads not exceeding 1 mm and 3 mm in height respectively unless otherwise required in terms of the approved welding procedure.

Undercut will not be permitted under any circumstances.

The weld, heat affected zone, and surrounding parent metal shall be free from cracks, porosity and trapped slag.

All weld splatter shall be removed prior to corrosion protection application.

PSL 5.2.3.6 Quality Control (New Sub-Clause)

Add new Sub-Clause:

Records of which welds were carried out by each individual welder as well as non-destructive testing results shall be submitted to the Employer's Agent monthly. Should there be repetitive or serious defects, this information shall be forwarded to the Employer's Agent immediately.

PSL 5.2.5 Cut Pipes (New Sub-Clause)

Add new Sub-Clause:

Cut pipes shall be used where required as closure lengths. The cut ends shall be dressed square and to a smooth even finish and prepared for butt welding preparation which shall not be inferior to that of the ends of uncut pipes. The finished dimensions of ends cut on site shall be within the tolerances applicable to the ends of the particular types of pipe to be laid. The cost of cutting and trimming of pipes shall be included in the rates Tendered for laying and jointing pipes.

PSL 5.2.6 Jointing of PE and uPVC pipes

Add new Sub-Clause:

PE pipes and their fittings shall be jointed in accordance with the manufacturer's instructions, and special care shall be taken not to over-tighten the couplings.

uPVC pipes and their fittings shall be jointed strictly in accordance with the manufacturer's instructions and, except for the joint, shall be backfilled as soon as possible after laying.

PSL 5.5 ANCHOR/THRUST BLOCKS AND PEDESTALS

Add to the Sub-Clause:

If the steel pipelines that to be laid under this Contract are to be continuously welded or flanged, anchor/thrust blocks will not not required at tees, bends, terminal valves and end caps.

PSL 7.3 STANDARD HYDRAULIC PIPE TEST

Add new Sub-Clause:

Water used for one filling of the pipeline for hydraulic testing will be provided by the Employer free of charge. Water will be made available from the nearest operational reservoir or connection point on the existing reticulation network. Additional water used due to unsuccessful hydraulic tests will be charged at the Employer's bulk rate per kilolitre. Filling of the pipeline for hydraulic testing shall be carried out slowly to enable air to escape and under the direction of the Employer's Agent.

PSL 7.3.1 Test Pressure and Time of Test

Add to the Sub-Clause:

Pipeline shall be subjected to field test pressures equivalent to the heads or pressures shown on the drawings.

All sections of the pipeline shall be tested and the sections to be tested shall not exceed a maximum allowable length of 1 000 m unless otherwise agreed by the Employer's Agent. Notwithstanding the foregoing, all stream and river crossings that are to be encased in concrete shall be successfully pressure tested prior to the placing of the concrete encasing. The Contractor shall make due allowance in the construction programme and in the Tendered rates for the entire testing operation including for the provision of temporary end stops (flanges or bullnoses) and any other costs incurred as a result of testing the pipeline in intermediate sections.

The pipe shall not be tested until the associated structural concrete for anchorage has cured for 28 days or until such concrete has attained the specified design strength. Once filled, cement mortar lined pipe shall be left for 24 hours to permit maximum saturation of the linings.

The section to be tested shall be pressurised to the specified pressure and left for 24 hours, during which period, the pressure drop (if any) and the quantity of water required to be pumped in to restore the test pressure shall be measured and recorded. In addition, all flexible and flanged joints shall be visually inspected and there shall be no sign of leakage.

The permissible leakage for welded and flanged steel pipelines is zero (0) litres.

At all times when there is water in the pipeline, and particularly during filling, testing and draining of the pipeline, all air valves shall be in operation and their individual isolating valves shall be open.

PSL 7.3.1.2 Delete the Sub-Clauses 7.3.1.2

PSL 7.3.1.3 Delete the Sub-Clauses 7.3.1.3

PSL 7.3.3 Permissible Leakage Rates (Sub-Clause 7.3.3)

Delete the title of Sub-Clause and substitute the following:

Permissible Make-up Water

Add additional paragraph to the Sub-Clause as follows:

(c) Welded steel pipelines -- Nil

PSL 7.3.4 Initial Filling of Pipeline (New Clause)

Add new Sub-Clause:

The entire process for filling the pipeline at any time during testing or disinfection shall be carried out under the supervision of the Employer's Agent and will also be monitored by municipality personnel. Under no circumstances will the Contractor be allowed to carry out filling of the pipeline without the supervision of the Employer's Agent, neither shall he/she permit any other persons to carry out such filling without the written permission of the Employer's Agent.

Any damage to the pipeline caused by non-compliance with this Clause shall be rectified at the Contractor's expense.

PSL 7.3.5 Connections after testing (New Sub-Clause)

Add new Sub-Clause:

The connections of the new pipework to the existing pipework shall only be carried out after the pipeline testing has been completed and accepted by the Employer's Agent. For this reason, testing shall be carried out against a blank flange or bullnose end cap at these locations.

PSL 7.3.6 Remedial Measures (New Sub-Clause)

Add new Sub-Clause:

In the event that a pipe section fails a test, the Contractor shall carry out all remedial measures necessary to obtain a successful test of each individual section and the entire pipeline, at his/her own expense. Such remedial measures shall in no way compromise the original pipeline specifications.

PSL 7.3.7 Draining of the Pipeline (New Sub-Clause)

Add new Sub-Clause:

The pipeline may have to be drained to carry out remedial measures. The pipeline shall be drained via the scour valves in a manner that does not cause erosion of the streambeds or negatively impact on the environment in any way. All such drainage of the pipeline shall be carried out under the supervision of the Employer's Agent.

PSL 7.6 Commissioning (New Sub-Clause)

Add new Sub-Clause:

The pipeline will be considered to have been commissioned and practically complete once all the associated structures are sufficiently complete to carry out their structural and hydraulic function and the hydraulic test of the entire pipeline has been successfully completed.

PSL 7.7 Water Tightness Test for Chambers (New Sub-Clause)

Add new Sub-Clause:

On completion of each concrete valve chamber, and prior to completion of the backfilling around the chamber, a water tightness test shall be undertaken by the Contractor. This shall be carried out by excavating a trench approximately 0,5 m deep around the periphery of the chamber and continuously (for at least 4 hours) maintaining it full of water. Should there be any noticeable leaks into the chamber, the Contractor shall carry out at his/her own expense whatever measures are necessary to waterproof the chamber to the Employer's Agent's satisfaction.

PSL 8 MEASUREMENT AND PAYMENT

PSL 8.2.16 Cutting into and Connecting to Existing Pipelines (New Sub-Clause)

Cutting into and connecting to existing pipeline Unit : Sum

The rate for cutting into and connecting to existing pipelines shall cover the cost of exposing the existing pipeline, making arrangements with the Employer's staff to temporarily shut off the existing pipeline whilst effecting the connection, cleaning and preparing the pipe for cutting, cutting, dealing with all water (including that from possible leaking valves), preparing the pipe ends for jointing, welding / jointing and connecting the new pipework, making good internal linings and external coatings, re-commissioning the pipeline, and including all temporary supports, bedding and backfilling.

SECTION PSLB: BEDDING (PIPES) (Applicable to SANS 1200 LB - 1983)

PSLB 3 MATERIALS

PSLB 3.1 SELECTED GRANULAR MATERIAL

Replace the Sub-Clause and substitute with the following:

All bedding used for the cradle beneath and surrounding the pipes shall comply with the following requirements

GRADING ANALYSIS RANGE	
SIEVE SIZE (mm)	**PERCENTAGE PASSING**
6,7	98 to 100
4,76	85 to 100
2,36	55 to 95
1,18	30 to 75
0,60	20 to 50
0,425	16 to 38
0,30	13 to 27
0,15	5 to 18
0,075	0 to 12

The material shall be free of organic matter and shall have a compactibility factor of not more than 0,4. The material shall be classified as silty to fine sand having a stiffness ratio of not less than 5,0 MPa. Furthermore, the materials shall, preferably, be obtained from river transported deposits since it is preferable that the larger grains (3,0 to 4,8 mm in size) be rounded and not sharp and angular.

The Contractor will be required to carry out his/her own quality control testing of the material to ensure that it meets the padding sand requirements and complies with this specification at all times. At least one grading analysis shall be carried out for every 100 lineal metres of bedding placed. The results of these tests shall be forwarded to the Employer's Agent within 24 hours of completion of the test. Should the material not comply with the specification, the Contractor shall remove and replace it with approved material at his/her own cost.

Depending on the actual material supplied by the Contractor, the moisture content may be critical to enable satisfactory placing and compaction and the Contractor will be deemed to have allowed in his Tendered rate for any and all adjustments required to the moisture content of the bedding material at all times.

PSLB 3.2 SELECTED FILL MATERIAL

Delete the Sub-Clause:

Not required. All material up to the underside of backfill shall be measured as selected granular from commercial sources.

PSLB 3.4 SELECTION

PSLB 3.4.1 Suitable Material Available from Trench Excavation

Delete the Sub-Clause and substitute the following:

The excavation of a pipe trench shall comply with the requirements of Sub-Clause 5.4 of SANS 1200 DB and the provisions of Sub-Clause 3.7 of SANS 1200 DB (in terms of which, for the purposes of providing bedding materials, the Contractor is not required to use selective methods of excavating) shall apply. Nevertheless, the Contractor shall take every reasonable precaution to avoid burying or contaminating material that is suitable and is required for bedding or covering the pipeline. If, in the opinion of the Employer's Agent, bedding material can be produced from the excavated material, the Contractor shall, if so ordered by the Employer's Agent, screen or otherwise treat (as scheduled) the excavated material in order to produce material suitable for bedding (see also Sub-Clause PSLB 8.1.2).

PSLB 5 CONSTRUCTION

PSLB 5.1 GENERAL

PSLB 5.1.2 Details of bedding

Delete and replace with:

Pipes shall be bedded and protected in accordance with the details shown on the drawings.

PSLB 5.1.2.1 Stone Drainage Layer beneath Bedding (New Sub-Clause)

Add new Sub-Clause:

Where indicated on the drawings, or as otherwise indicated by the Employer's Agent, a 200 mm thick layer of 19 mm stone shall be placed beneath the bedding layer to act as a drainage channel for excessive groundwater. This layer shall be wrapped in Bidim and provided with outlet pipes if and where indicated.

PSLB 5.1.4 Compacting

Delete the second line and substitute:

top of the pipeline shall be 93% mod AASHTO.

Add to Sub-Clause 5.1.4:

Steps will have to be taken by the Contractor to ensure that flexible pipes do not deform excessively in cross-section during and after construction and backfilling operations. The maximum deflection which will be acceptable at any stage during or after construction is 2% of the pipe diameter horizontally or vertically. The Contractor will be required to provide the necessary apparatus and to monitor deflection during construction.

Pipe deformations will only be maintained within the specified tolerances by correct backfilling practice. No heavy compaction equipment will be permitted for compaction of any pipe bedding, only pneumatic or hand rammers being acceptable. To this end, and to achieve the 93% compaction specified it is required that the bedding material be brought up evenly on either side of the pipe. The use of complete saturation of the material as a method of achieving the specified compaction may, subject to the Employer's Agent's approval, be used. However, in this regard, Tenderers are advised that the presence of excessive quantities of water in the pipe trench could lead to flotation of the pipe.

Prior to the commencement of pipe laying the Contractor will be required to submit, to the Employer's Agent, for his approval, his proposed methods of placing, and compacting methods which he proposes to implement in order to ensure compliance with the specification.

PSLB 5.1.5 Testing (New Sub-Clause)

Flexible and flanged joints shall be left exposed with a minimum of 300 mm clearance around the bottom of the pipe during hydraulic pressure testing of the pipe to facilitate inspection.

PSLB 5.2.5 Stone Bedding (New Sub-Clause)

In areas where waterlogged conditions exist or where ordered by the Employer's Agent, special drains consisting of a 200 mm thickness of single sized stone with a geofabric filter surround ("Bidim" Grade A4 or similar approved) extending the full width of the trench shall be provided below the bedding to the pipes. The excavation for these drains will be measured in cubic metres at the Contract rate applying to unsuitable excavation below the bottom of the trench. The stone filling will be paid for per cubic metre and the geofabric filter will be paid for per square metre. All measurements in this connection will be to a width equal to the base widths and depths ordered.

PSLB 5.3 Placing and Compacting Flexible Pipes

PSLB 5.3 (a) Bedding Cradle

Delete the Sub-Clause and substitute the following:

The pipes shall be bedded on a minimum 100 mm thick layer of compacted granular bedding material on which a 50 mm thick layer of uncompacted granular bedding material has been placed and spread. Loose granular bedding material lying next to the pipe shall be placed into the haunch area and compacted with suitable hand tools (covered with rubber to prevent damage to the pipe coating), and additional selected granular material shall be added and compacted in 150 mm thick layers up to the mid-point of the pipe diameter in the vertical plane. The remainder of the bedding i.e. the selected fill blanket, shall be placed in layers up the sides of the pipe, each layer being compacted until a level of 300 mm above the crown of the pipe is reached.

PSLB 5.3(b) Selected Fill Blanket

Delete "200 mm" from title.

PSLB 6 TOLERANCES

PSLB 6.1 Moisture Content and Density

Add to the Sub-Clause:

The permissible deviations applicable are to be those for Degree of Accuracy II class of work.

PSLB 8 MEASUREMENT AND PAYMENT

PSLB 8.1.3 Volume of Bedding Materials

Add to the Sub-Clause:

(c) The volume of bedding material shall be measured net, i.e. the volume of the pipe is to be deducted.

(d) No additional payment will be made for bedding material placed in bell (fox) holes

PSLB 8.1.6 Freehaul

Delete the Sub-Clause and substitute the following:

All haul will be regarded as free haul. No overhaul will be paid for under this Contract.

PSLB 8.2.4 Encasing of Pipes in Concrete

Delete the fifth and sixth lines and substitute the following:

encasing the pipe in concrete 150 mm thick each side of the pipe and to 150 mm above the crown of the pipe including the cost of formwork, (if any), etc. and the cost of formwork to form stop ends on either side of collars, couplings, joints etc if instructed by the Employer's Agent.

The rate for concrete encasing shall include for the supply, installation and stripping of all formwork.

PSLB 8.2.5 Overhaul of Material for Bedding Cradle and Selected Fill Blanket

Delete the sub-Clause.

SECTION PSLC: CABLE DUCTS (Applicable to SANS 1200 LC-1981)

PSLC 3 MATERIALS

PSLC 3.1 DUCTS

Add the following to Sub-Clause 3.1:

Class 6 uPVC pipes (dia 110 mm or 160 mm) shall be used as ducts for electric cables under streets.

PSLC 3.1.1 SUPPLY OF DUCTS BY TELKOM (New Sub-Clause)

Notwithstanding any provisions of the Contract in terms of which the Contractor is required to provide all materials necessary for the construction of the works, Telkom will supply the ducts for telephone cables. Consequently, the Contractor's obligations under the Contract shall include taking delivery, the construction, completion and maintenance of the works and the provision of all labour, materials (other than those that are to be supplied by Telkom), plant, temporary works, and everything, whether of a temporary or permanent nature, required in and for such construction, completion and maintenance, so far as the necessity for providing the same is specified in or reasonably to be inferred from the Contract.

To assist Telkom in arranging for the goods to be supplied to suit the Contractor's construction program, the Contractor shall submit to the Employer's Agent, at agreed intervals, lists of his requirements. These lists shall be submitted at least 6 weeks (or another approved period) in advance of the date by which the goods are required. The Employer's Agent will ascertain in advance the actual dates of delivery of consignments and will advise the Contractor who shall adjust his construction program as necessary to minimise any disruption of his work.

In the event of supply being effected, the Contractor shall, provided that appropriate due notice of dispatch has been given, be responsible for taking immediate delivery of such goods as they arrive at the site. He shall be responsible for checking the actual deliveries against delivery notes. From the time of taking delivery the Contractor shall be responsible for the handling, transportation and storage of the goods and he shall at the same time accept the risk of damage to or loss of the goods.

Should any goods reach the point(s) of delivery in a damaged or an apparently damaged condition, the Contractor shall report this fact to the Employer's Agent, and he shall, before removing the goods from the transport vehicle, to avoid demurrage or similar charges, afford the Employer's Agent reasonable opportunity to inspect such damaged goods.

On receipt of the goods, the Contractor shall issue a receipt to Telkom in an approved form. The Contractor shall accept full responsibility for checking deliveries and ensuring that the goods supplied to him are in sound condition.

The Contractor's receipt will be deemed to indicate that he has satisfied himself that the goods enumerated on it are in sound condition. Unless the Contractor at the time of receipt advises the Employer's Agent that goods have been short delivered or are defective, and obtains the Employer's Agent's approval to take delivery (which approval will not be unreasonably withheld), no subsequent claim for short deliveries or replacement of damaged goods will be considered by the Employer's Agent.

PSLC 3.2 BEDDING

Replace Sub-Clause 3.2 with the following:

The provisions of SANS 1200 LB: Bedding (Pipes) and the relevant project specification shall apply mutatis mutandis and payment shall be made under the appropriate payment Clauses of SANS 1200 LB.

PSLC 3.3 BACKFILL

Substitute sub-Clause 3.3 with the following:

The provisions of SANS 1200 DB: Earthworks (Pipe Trenches) and the relevant project specification shall apply mutatis mutandis and payment shall be made under the appropriate payment Clauses of SANS 1200 DB.

PSLC 3.4 CABLE DUCT MARKERS

Add the following to sub-Clause 3.4:

Cable duct markers shall be provided as specified in Sub-Clause PSLC 5.10.

PSLC5 CONSTRUCTION

PSLC 5.1 EXCAVATION OF TRENCHES

PSLC 5.1.1 Trench Widths and Depths

Add the following to sub-Clause 5.1.1:

Trench widths shall be in accordance with the provisions of SANS 1200 DB: Earthworks (Pipe Trenches). The minimum depth of cover over ducts shall be 600 mm from the final road level.

PSLC 5.1.3 Excavation of Trenches at Road Crossings (New Clause)

The minimum depth of cover over ducts shall be 300 mm where construction traffic is liable to cross them. Road crossings shall therefore be constructed after the construction of the roadworks has reached the stage where the required cover is available.

PSLC 5.2 BEDDING AND COMPACTION OF BEDDING

Substitute Sub-Clauses 5.2.1 and 5.2.2 with the following:

All ducts shall be laid on a Class C bedding according to the provisions of SANS 1200 LB: Bedding (Pipes). Backfilling shall be according to the provisions of SANS 1200 DB: Earthworks (Pipe Trenches).

PSLC 5.4 BACKFILLING AND COMPACTION

Add the following to sub-Clause 5.4:

Road crossings shall be backfilled with sand from designated borrow pits, the site or commercial sources, whichever is applicable, up to underneath the subbase, and compacted to a minimum of 100% of MOD AASHTO density.

PSLC 5.8 ROAD CROSSINGS

Substitute "0,5 m" in the last sentence of Sub-Clause 5.8 with "1,0 m" and add the following:

Ducts for road crossings shall be effectively sealed by means of end caps.

PSLC 5.10 POSITION TO BE MARKED

Add the following to Sub-Clause 5.10:

The lettering height shall be at least 70 mm.

The positions of ducts shall be marked by means of incisions on top of the kerb. The dimensions of such incisions shall be at least 40 mm long, 3 mm wide and 5 mm deep and the spacing, where more than one incision is required, shall be 20 mm. Ducts for Telkom crossings and electrical crossings shall be marked with green and red painted incisions respectively.

The draw wire, as specified in Sub-Clause PSLC 5.3.3, shall be secured to a 150 x 150 x 150 mm grade 20 MPa/19 mm concrete marker, which shall be installed with a depth of cover of 50-100 mm below the top of kerb or sidewalk level.

PSLC 5.12 DRAW AND JOINT BOXES FOR TELKOM CABLES (New Sub-Clause)

Draw and joint boxes shall be constructed strictly in accordance with the positions and details given on the plans.

PSLC7 TESTING

PSLC 7.2 COMPACTION TESTS

Substitute Sub-Clause 7.2 with the following:

The Contractor shall, for at least one out of every five road crossings, submit density tests to the Employer's Agent at his own expenses. The decision as to which road crossing densities shall be tested, rests with the Employer's Agent. The Contractor shall, if such densities fail to meet the minimum requirements, prove at his expense that all the other densities do comply with the specified minimum requirements.

SECTION PSM: EARTHWORKS (Roads, General SANS 1200 M)

PSM 5 CONSTRUCTION

PSM 5.1 Traffic Control/Safety Measures

Add the following Sub-Clause:

When roads to be constructed under this Contract join onto existing surfaced trafficked roads, the Contractor shall take all the necessary precautions to ensure the safety of the traveling public. To this end, signs warning through traffic of vehicles encroaching into the travelled way shall be erected by the Contractor prior to such work being undertaken. In addition, flagmen shall be installed along the through road. These control measures shall be checked and recorded on a daily basis.

Under no circumstances shall drums be permitted to be used as traffic demarcation devices.

All signs must comply with the latest edition of the South African Road Traffic Sign Manual.

PSM 6 TOLERANCES

PSM 6.4 Level Control of Road Layers

Add the following sub-Clause:

The Contractor shall submit to the Employer's Agent, at the time of requesting acceptance of a road layer, a record of the surface levels of that section, taken at metre intervals to coincide with the level pegs. A sample form will be obtainable from the Employer's Agent.

PSM 7 TESTING

PSM 7.1 General

Add the following to this Sub-Clause:

The random sampling method of TMH 5, for the location of positions, for field density testing will not necessarily be applied by the Employer's Agent's Representative. Density testing shall be carried out where, in his opinion, the density of the compacted layer is suspect. The Contractor shall present the full width of the layer, between the stated linear stake values, for acceptance. Only in exceptional cases will partial widths of a layer be accepted for testing.

PSM 7.3 Routine Inspection and Testing

Add the following to this Sub-Clause:

The request for acceptance of a layer shall be submitted in writing, specifying the exact location of the section and type of layer. On receipt of all these details the Employer's Agent's Representative will arrange for the necessary inspections and tests to satisfy himself that the road layer complies. Testing will be carried out as expeditiously as possible, and the results will be available within 24 hours of receipt of test request. The Contactor shall backfill the test holes left in the layer with a similar material to that of the layer tested and compact the material to a similar density. Concrete shall not be used.

PSM 7.4 Compaction Control

Add the following to this Sub-Clause:

Density test shall be carried out by the Contractor on each layer of the selected subgrade, subbase, base-course and shoulders/layers as soon as possible but not later than twenty-four hours (24) after compaction of that layer has been completed, and the results of the test shall be submitted to the Employer's Agent without delays and in any case not later than twelve hours (12 hours) after they become available.

The Contactor shall locate and test any soft or wet areas evident in any layer and shall, if these tests fail, re-compact and retest such areas for density before requesting the Employer's Agent to carry out check tests.

The Contractor shall provide adequate equipment and facilities for carrying out the tests required to be performed by him. Should the Employer's Agent at any time consider that the equipment and facilities are inadequate for this purpose, he may instruct the Contractor to cease work on the completion of subgrade, sub-base and base course until such time as the Contractor has remedied the deficiency of equipment, labour and facilities.

The results of the test carried out by the Employer's Agent shall be regarded as final.

PSM 7.5 Employer's Agent's Discretion

Notwithstanding the provision of Clause 7 of SANS 1200 M, testing of a section of completed work shall be at the sole discretion of the Employer's Agent who may refuse to check test and consequently not approve a section of work which contains obvious defects such as loose patches, over-wet material etc.

PSM 8 MEASUREMENT AND PAYMENT

PSM 8.1 Inspection and Testing of a road layer

Add the following Sub-Clause:

The cost of refilling and compacting the density test holes shall be included in the rate Tendered for the construction of that layer.

SECTION PSME: SUBBASE (SANS 1200 ME)

PSDME 3 MATERIALS

PSME 3.2.1 Subbase Material

Replace the following in this Sub-Clause with:

With reference Sub-Clauses 3.2.1.d (ii) and 3.2.1.d (iii), the regional factor shall be taken as 0,6.

PSME 5 CONSTRUCTION

PSME 5.4.1 Placing

Add the following to this Sub-Clause:

The subbase layer shall be 150 mm thick unless shown otherwise on the drawings.

PSME 6 TOLERANCES

PSME 6.1.1 General

Add the following to this Sub-Clause:

For layers, constructed of subbase quality material, on which the bituminous surface will be placed, the tolerance for dimensions and level shall be as set out in SANS 1200 MF, Sub-Clauses 6.1.2 to 6.1.6 inclusive, as amended.

SECTION PSMF: BASE (Applicable to SANS 1200 MF-1981)

PSMF 3 MATERIALS

PSMF 3.3.2 Graded Crushed Stone

Add the following to Sub-Clause 3.3.2, in the first sentence after the words:

SANS 1083 ..... “for 37,5 mm stone”.

PSMF 5 CONSTRUCTION

PSMF 5.4.4 Compaction

Amend Sub-Clause 5.4.4.2 (a) by depleting 98% and replace with 100%.

PSMF 6 TOLERANCES

PSMF 6.1.2 Grade

Delete the contents of Sub-Clauses 6.1.2 (a) and (b) and replace with:

The height of the edge of the channel above the top of the completed base shall be not higher than the final asphalt level less 5 mm. (Refer to SANS 1200 MH 6.3.4)

PSMF 6.1.5 Cross-section

Amend the Sub-Clause as follows:

Delete “25 mm” and replace by “15 mm”.

PSMF 7 TESTING

PSMF 7.3 Routine Inspection and Testing

Delete Clause 7.3 and replace with the following:

The density measured at all test holes shall be a minimum of 93% Mod. AASHTO density for the section of layer works to be acceptable.

SECTION PSMJ SEGMENTED PAVING

PSMJ 3 MATERIALS

PSMJ 3.1.2 Class, strength and type

Add the following to Sub-Clause 3.1.2:

Blocks shall be 60 mm or 75 mm thick pavers, S-A type, Class 35 to the colour and type specified by the Landscape Architect. Blocks are to be 75 mm thick for roads and 60 mm thick for walkways and other non-vehicular areas.

PSMJ 3.3 Sand for Bedding and Jointing

Add the following to Sub-Clause 3.3:

The sand used for the bedding layer shall not contain proportions of silt and clay materials smaller than 0,075 mm that exceed 15%.

PSMJ 5 CONSTRUCTION

PSMJ 5.3 Placing and Compacting of Sand Bed

Replace the first sentence of Sub-Clause 5.3 with:

The bedding sand shall have a compacted thickness of 20 mm.

Add the following to Sub-Clause 5.3:

The Contractor must make allowance for the penetration of the bedding sand layer into the compacted subbase layer. Only the 20 mm homogenous bedding sand layer will be measured for payment purposes.

PSMJ 5.4 Laying of Units

Replace the first paragraph of Sub-Clause 5.4 with:

Blocks shall be laid in the herringbone pattern.

PSMJ 5.6.2 Paving Subject to Wheel Loads Exceeding 30 kN.

Add the following to Sub-Clause 5.6.2:

The paving proposed will be subjected to wheel loads exceeding 30 kN.

SECTION PSMK KERBING AND CHANNELLING (Applicable to SANS 1200 MK -1983)

PSMK 3 MATERIALS

PSMK 3.2.1 General

Replace the last sentence of Sub-Clause 3.2.1 with the following:

Precast units as indicated on the drawings shall be required in 1m lengths.

300 mm lengths shall be used in bellmouths and for radii less than 20 m. These kerbs shall be cast and not saw cut.

PSMK 3.9 Bedding Material

Delete this Clause and replace with the following:

The material on which precast kerbs and channels are bedded shall consist of Grade 15/9 concrete to SANS 1200 GA and to the dimensions indicated on the drawings.

PSMJ 5 CONSTRUCTION

PSMK 5.2 Precast Concrete Kerbing and Channelling

Replace the second paragraph of Sub-Clause 5.2 with the following:

Provision shall be made for expansion joints of width 10 mm at intervals not exceeding 10 m for kerbing, channelling and edging. The joints shall be filled with a suitable silicone or polysulphide sealant.

Notwithstanding the fact that vertical curves have not been specified where changes to grade of up to 2% occur, the kerbs and channels shall be laid to levels based on a minimum vertical curve length of 20 m.

No change in grade shall be applied on kerbs in bellmouths unless specific levels are indicated.

PSMK 8 MEASUREMENT AND PAYMENT

PSMK 8.1 Basic Principles

Add the following Sub-Clause 8.1.4:

Measurement and payment for bedding as well as the backing of kerbs as specified in SANS 1200 MK 5.2 shall be included in the separate items scheduled in terms of Sub-Clause 8.2.1 and 8.2.2 of SANS 1200 MK. The rates shall cover the cost of supplying and installing the bedding as specified in Sub-Clause PSMK 3.9, as amended.

C3.5 PARTICULAR SPECIFICATION:

SECTION PSHD HORIZONTAL DIRECTIONAL DRILLING SPECIFICATION

PSHD 1.0 DESCRIPTION

Use horizontal directional drilling (HDD) method when the drawings call for such a method to be used, or when the Employer's Agent approves using this method via a value Employer's Agent process, to furnish and install underground pipes. The installation is according to the sizes and limits shown on the drawings, and specified by these technical specifications herein. The work includes all services, equipment, materials, tools, and labour for a complete and proper installation and testing.

HDD is a trenchless method for installing water pipes. It is a multi-stage process consisting of site preparation, equipment setup, pilot bore, product pipe pulling through the drilled bore, and site restoration. Alignment of the bore is accomplished by proper orientation of the drill bit head as it is pushed through the ground by the drill rig. Orientation and tracking of the drill bit is determined by using an acceptable tracking system from a transmitter located within the drill bit head. When necessary, enlarge the pilot borehole (back reaming) to accommodate a pipe larger than the pilot borehole size. Back ream ahead of or at the same time pulling the product pipe through the pilot borehole.

In order to minimize friction and prevent collapse of the bore hole, introduce a soil stabilizing agent (drilling fluid) into the annular bore space from the front end of the drill bit. The rotation of the bit in the soil wetted by the drilling fluid creates slurry. The slurry stabilizes the surrounding soil, prevents the bore hole from collapsing, and provides lubrication. Select or design the drilling fluids for the site's specific soil and ground water conditions. Confine free flowing (escaping) slurry or drilling fluids at the ground surface during pull back or drilling.

PSHD2.0 MATERIALS

PSHD2.1 General

The replacement pipe shall consist of PE100 PN12.5 High Density Polyethylene Pipe (HDPE), complying with SANS 533 Part II. Where, in the opinion of the Employer's Agent, thicker walled HDPE pipes are required a new rate will be negotiated.

The heavy duty HDPE shall be pre-manufactured under factory condition to the satisfaction of the Employer's Agent. The Contractor shall provide the Employer's Agent for his approval with detail of the manufacturing process as well as samples of the pipe to be used and the respective applicable factory quality control procedures.

The heavy duty HDPE pipe procured by the Contractor shall be able to withstand all applied forces during the installation of the new pipe whilst cracking the old pipes. Typical forces are, but not limited to, drag forces, pulling forces, friction against the old burst pipes, etc. A Closed Circuit Television (CCTV) inspection shall take place once the installation is complete which shall indicate any deformation, stretching, damages, etc. in the newly installed drain pipe.

The HDPE piping shall be supplied in the maximum possible lengths that diameter and handling constraints will permit in order to reduce the number of site welded joints. The handling of HDPE piping shall be in accordance with the manufacturer's standards and to the approval of the Employer's Agent. Typical considerations are requirements for transporting the pipe to the jobsite including loading, stacking, and strapping the pipe to the transport hauler, onsite unloading, storing, and handling of the pipe, pulling of the pipe into the insertion pit and protecting it from damage, as well as cutting and joining of the new pipe material. The jobsite safety plan should address safe handling practices for the specific pipe type and size on the site.

The new pipe shall be homogenous throughout and shall be free of visible cracks, foreign material, blisters, or other deleterious faults. New pipes and fittings that are damaged before or during installation shall be repaired or replaced, as recommended by the manufacturer or required by the Employer's Agent. The costs of such repair or replacement shall be borne by the Contractor and be accomplished prior to proceeding with the installation.

No deformation shall be accepted whatsoever. All sections of pipes damaged and/or deformed shall be replaced. The Contractor shall provide the Employer's Agent with a method statement for the replacement and/or repair to be carried out. Such method statement shall be approved by the Employer's Agent before the replacement and/or repair work is carried out. Shall more than 15% of the section, as defined by the length of the pipe between the entry and exit pits, under consideration be damaged, the entire length of pipe for that section shall be replaced. The length of damaged/deformed pipe shall be measured by means of the CCTV system, to the nearest one decimal point.

The HDPE shall be supplied in the maximum possible lengths that diameter and handling constraints will permit in order to reduce the number of site-welded joints. The handling of HDPE piping shall be in accordance with the manufacturers standards and to the approval of the Employer's Agent.

PSHD2.2 Certificates of Compliance

The Contractor, when using materials that are to conform to a Standard Specification shall, if called upon, furnish the Engineer with certificates of tests showing that the materials do so conform. Preferably all materials shall carry the "Mark" of the South African Bureau of Standards.

PSHD2.3 HDPE Pipes and Fittings

PSHD2.3.1 HDPE Pipes

High Density Polyethylene Pipe

The material to be used in the manufacture of the High Density Polyethylene (HDPE) is to be PE100. Pipes must have current SANS / SANS standard 4427:1996 mark and the manufacture of the pipe must be ISO 9001 accredited and be a member of SAPPMA (South African Plastic Pipe Manufacturer's Association). Pipes for use only in reticulation networks where water temperatures are less than 25º are acceptable.

The pipes shall be longitudinally marked at least every metre with the following information:

a. The manufacture's name, trademark or logo
b. The class or rating
c. The nominal outside diameter
d. A batch identification number (referencing month and year of manufacture)

Four stripes, equidistant and blue in colour must be applied longitudinally along the complete length of each pipe.

The pipe to be used on this Contract shall be pressure class PN12,5 and shall be nominal diameters 90 mm, 110 mm, 160 mm, 200 mm, 250 mm and 300 mm.

The manufacturer shall supply full Quality Assurance records for both the raw materials and the manufacturing process in accordance with ISO 9001 requirements.

PSHD2.3.2 HDPE Fittings

PSHD2.3.2.1 Electro-fusion Welded Fittings

All fittings for pipes up to and including 160 mm nominal diameter shall have electro-fusion welded couplings complying with EN1511 and PN16 rated on all ends except where otherwise specified.

Approved suppliers are:

a) Plasson
b) Alprene

Should the Contractor wish to use any other products, details of the product and sample must be submitted for consideration and approval prior to placing any orders

PSHD2.3.2.2 Butt-welded Joints

Where pipes are to be butt welded, the fittings for pipes larger than 110 mm nominal diameter

shall be fabricated from pipes conforming to the requirements of Clause AA.3.5.1 above and butt welded to the pipes. The fabricated fittings shall be tested to the same test pressures as the pipes.

PSHD2.3.2.3 Compression Fittings

Where compression fittings are specified, only fittings that meet the specification (SANS14236/ISO and PN16 rated) shall be used. Approved suppliers are listed below:

a) Unidelta.
b) Alfa.
c) Plast
d) Alprene.

Should the Contractor wish to use any other products, details of the product and sample must be submitted for consideration and approval prior to placing any orders

PSHD2.3.2.4 End Caps

End caps, unless specified otherwise, shall be approved electro-fusion welded HDPE fittings.

PSHD2.3.2.5 Concrete for Thrust Blocks

All concrete for thrust blocks shall comply with the requirements for Grade 15/26 concrete contained in SANS 1200: Part "E", Concrete.

PSHD2.4 Jointing

PSHD2.4.1 General

The polyethylene pipe shall be assembled and joined at the site using the thermal butt-fusion method to provide a leak proof joint. Threaded or solvent-cement joints and connections are not permitted.

All equipment and procedures used shall be used in strict compliance with the manufacturer's recommendations. Fusing shall be accomplished by personnel certified as fusion technicians by a manufacturer of polyethylene pipe and/or fusing equipment.

The butt-fused joint shall be properly aligned and shall have uniform roll-back beads resulting from the use of proper temperature and pressure. The joint surfaces shall be smooth. The fused joint shall be watertight and shall have tensile strength equal to that of the pipe. All joints shall be subject to acceptance by the Employer’s Agent and/or his representative prior to insertion. All defective joints shall be cut out and replaced at no cost to the Employer. Any section of the pipe with a gash, blister, abrasion, nick, scar, or other deleterious fault greater in depth than ten percent (10%) of the wall thickness, shall not be used and must be removed from the site. However, a defective area of the pipe may be cut out and the joint fused in accordance with the procedures stated above. In addition, any section of pipe having other defects such as concentrated ridges, discoloration, excessive spot roughness, pitting, variable wall thickness or any other defect of manufacturing or handling as determined by the Employer’s Agent and/or his representative shall be discarded and not used.

Terminal sections of pipe that are joined within the insertion pit shall be connected with a full circle pipe repair clamp. The butt gap between pipe ends shall not exceed 10 mm.

No separate payment shall be made for the calibration of the welding plant as required in this Contract.

No separate payments shall be made for welding of the HDPE pipe as required in this Contract.

PSHD2.4.2 Coupling of HDPE Pipes

Jointing of the HDPE pipes shall be by means of either:

a) Heat fusion, using approved butt welding equipment,
b) Electro fusion couplings.
c) Welded stubs and back rings for flanged joints

PSHD2.4.3 Gaskets

Gaskets shall be manufactured from "Klinger 200" or other approved material which complies with the requirements for grade B of BS 2815.

All gaskets shall be 3 mm thick and cut so that the annular section is completely within the bolt circle, i.e. ring gaskets with no bolt holes.

All gaskets shall be purpose made.

Hand cutting and trimming of gaskets on site shall not be acceptable.

Care shall be taken to ensure that all gaskets are packed properly and are not damaged by bending. For larger sizes the gaskets shall be suitably supported by wooden frames during transit and while in store.

PSHD2.4.4 Flexible Couplings

All flexible couplings shall be of the double flanged and sleeve type, manufactured from rolled steel, and fitted with rubber rings suitable for jointing plain ended pipes and capable of withstanding twice the working pressure of the pipes being jointed. They shall be of the slip-on type coupling and couplings comprising bolt over arrangements shall not be acceptable.

PSHD2.4.5 Flanges

Where flanges and flange adaptors are required the flanges shall be drilled to SANS 1123, Table 1600. However, where specifically required and directed by the Engineer in cases where compatibility other existing flanges are required, the flanges shall be drilled off-centre in accordance with the withdrawn BS10 Table "D" or similar.

Nominal Diameter of Pipe	Diameter of Bolt Circle (± 1 mm)	Number of Bolts	Diameter of Bolts	Thickness of Flange
75	146	4	16	10
100	178	4	16	10
150	235	8	16	12
200	292	8	16	12
250	356	8	20	16
300	406	12	20	20

Any item of pipework that is found to have flanges that are incorrectly drilled shall be rejected. Reaming of bolt holes to oversize dimensions in order to make a particular piece fit shall not be permitted.

PSHD2.4.6 Bolts

Bolts and Nuts

Bolts and nuts for flange connections and cast iron couplings shall be appropriate for the class of valve or pipe. The length of each bolt shall be such that, after the bolt has been tightened, the end of the bolt is flush with the outside of the nut or projects above the nut by not more than two full threads.

The following manufacturing principles must be applied:

1. Insertion gaskets shall be used i.e. OD' s smaller than the ring of bolt hole.
2. Nuts, bolts and washers to be electro plated and not bitumen dipped.
3. Unprotected flanges, nuts, bolts etc. to be thoroughly cleaned by wire brushing and painted

with zinc rich epoxy primer complying with SANS 926 followed by two coats of resin (Fosroc Cital 28.05 or similar approved) to a dry thickness of at least 130 microns.

PSHD2.4.7 Bends

All bends shall be HDPE, long radius bends (mitred or prefabricated) coupled by means of electro-fusion welded fittings, except where detailed otherwise.

PSHD2.4.8 Adaptors

Flange adaptors shall be used where existing cast iron or AC pipe (not due for replacement) is required to be end-jointed to a new HDPE pipe. All flange adaptors must be made from cast iron, and are to be fusion bonded epoxy lined and coated to DFT 250 micron. The internal bore of the flange adaptor shall be constant such that the entire fitting can be slid over the pipe to be which it is to be coupled.

Universal flange adaptor – Universal flange adaptors must be made from steel, and are to be fusion bonded epoxy lined and coated to DFT 250 micron.

PSHD2.4.9 Couplings

Universal couplings shall be made from steel, and are to be fusion bonded epoxy lined and coated to DFT 250 micron.

All flange adaptors and mechanical couplings shall be tested to at least 12.5 bar.

PSHD2.5 Corrosion Protection

PSHD2.5.1 Bitumen

Bitumen shall comply with SANS 1137.

PSHD2.5.2 Flanges, Valves, Flexible Couplings, etc.

All flanges, valves, flexible couplings and other items not protected against corrosion shall be thoroughly cleaned by wire brushing and then painted with a zinc-rich epoxy primer complying with SANS. 926 followed by at least two coats of approved non-toxic high-build epoxy resin (Fosroc Cital 28.05 or similar) to a total dry film thickness of at least 130 microns.

PSHD2.6 Appurtenant Works

PSHD2.6.1 Valve Chamber Covers and Frames

PSHD2.6.1.1 5B Valve Covers

(a) Cast iron covers shall comply where applicable to SANS 558/SANS 558:1973 and polymer concrete covers shall comply where applicable to SANS 1882/SANS 1882:2003. No other alternatives will be acceptable.

(b) When products do not bear the SANS mark, the supplier may be required to make a statement under oath to confirm that the products comply with the relevant specification where applicable.

(c) The supplier shall ensure that all covers supplied shall fit and frame of the same type, without rocking and shall keep at his work as templates, master castings which are to be used only for checking and testing purposes, and which shall be available at all reasonable times for inspection by a representative of the Employer.

(d) The following maximum variation in mass will be allowed:

+7,5% of specified mass;
- 2,5% of specified mass.

(e) The supplier shall make or provide his own patterns and core boxes for each type of casting.

5B Valve Covers – Stock Codes

Item	Stock Code	Description
1	403 7165	Cast Iron no 5 B Valve
2	-	Polymer concrete no 5 B valve cover

PSHD2.6.1.2 Gaskets

Gaskets shall be manufactured from "Klinger 200" or other approved materials which comply with the requirements for grade B of BS 2815. All gaskets shall be purpose made. Hand cutting and trimming of gaskets on site shall not be acceptable.

PSHD 3.0 CONSTRUCTION

PSHD 3.1 Drilling and Pipe Installation

The Contractor is required to notify the Employer's Agent 48 hour prior to commencement of any drilling work.

Prior to beginning work, the Contractor shall submit to the Employer's Agent a work plan detailing the procedure and schedule to execute the work. The work plan shall be comprehensive, realistic, and based on actual working conditions. The work plan shall include complete descriptions of proposed plans, procedures, equipment, personnel, and if applicable, supporting material, for the following:

- Drilling operations: describe the pilot hole drilling procedure, the reaming operation, the pullback procedure, and illustrate the plan.
- Profile of the bore plotted at a scale appropriate for the crossing and acceptable to the Employer's Agent.
- HDD site layout including entry and exit points.
- Directional drilling equipment list includes: drilling rig, drill bit, back-reamer, mud mixing and pumping systems, down-hole tools, guidance system, and rig safety system. Provide calibration records for guidance equipment.
- Drilling fluid management plan: drilling fluid types and specifications, cleaning and recycling equipment, estimated flow rates, procedures for minimizing drilling fluid escape, and the method/location for final disposal of waste drilling fluids.
- Pipe storage and handling details.
- Pipeline assembly and installation procedures
- Contingency plans for possible problems.

PSHD 3.2 Route and grade Control:

The Contractor shall:

- determine and confirm that the correct drilling length and equipment pull strength required for the type of soil encountered is utilized;
- provide and maintain instrumentation that accurately locates pilot holes;
- drill a pilot hole along the route as indicated on construction drawings or agreed by the Employer's Agent to the tolerances of maximum 150 mm over a 100 mm length in the vertical direction and 300 mm over a 100 mm length in the horizontal direction, whilst not affecting the proper conveyance to the actual fluids;
- ensure continuous electronic monitoring of the drilling head location, horizontally and vertically. Additionally he shall provide position readings at a maximum intervals of 3 m;
- obtain a final accuracy of within 25 mm of the design pipe position; and
- provide the Employer's Agent with measurements indicating the horizontal and vertical alignment at the completion of the pilot hole drilling, prior to commencing with the subsequent operations.

PSHD 3.3 Drilling operation:

- The entire drill route shall be accurately surveyed and entry and exit pegs shall be placed.
- Drilling fluids shall be adequately maintained in the drilled (bore) hole ensuring the stability of the surrounding soil and to reducing pipe drag.
- Disposed of other spoils in an appropriate location to be identified by the Contractor.
- Minimized at locations other than the drill entry and exit points.
- Removed where unintentionally spilled on surrounding surfaces.

PSHD 3.4 Drilling and reaming:

- The entry drill hole shall be angled so that the curvature of the pilot hole does not exceed allowable the bending radius of the applicable pipe.
- In the event that forward motion, along the designed route and grade, of the operation is hindered or prohibited completely by any obstruction, the Employer's Agent is to be notified. Upon the Employer's Agent's approval, a second attempt at installation shall be made at an approved alternative location, or alternatively the section of difficulty shall be installed by means of conventional open trench excavations.
- Number of boring pits are to be kept at a minimum, ideally located at new associated structure locations, unless otherwise instructed by the Employer's Agent.
- Upon completion of the pilot hole, the Contractor shall ream the drilled (bore) hole to (at a minimum) 25% greater than the outside diameter of the pipe for straight pull sections. In the event that the route being curved or at a radius, the drilled (bore) hole is to be reamed (at a minimum) 50% greater than the diameter of the pipe. He may, at his discretion, pre-ream or ream and pull back the pipe in one operation if conditions allow for. The Contractor shall not attempt to ream at one time more than the drilling equipment and mud system are designed for.

PSHD 3.5 Installation of pipe:

The Contractor shall:

- provide a swivel to the reaming assembly and pull section of pipe to minimize torsional stress on pull section after drilling pilot hole.
- after successfully reaming drilled (bore) hole to the required diameter, pull the pipe through the hole, with the swivel. Once pull-back operations have commenced, operations shall continue without interruption until pipe is completely pulled into drilled (bore) hole. During pull-back operations, the Contractor shall not apply more than the maximum safe pipe pull force at any time. In the event that the pipe becomes stuck, the Contractor shall notify the Employer's Agent. Employer's Agent and Contractor shall discuss options and then work shall proceed accordingly.
- protect pull section as it proceeds during pull back so that it moves freely and is not damaged.
- when connecting to adjacent pulled or non-pulled sections of pipe, allow pull section of pipe to extend past termination point, and make tie-ins the next day after the pull-back of the pipe.
- provide a test pit pipe installation to verify horizontal and vertical alignment, one test pit for every 150 m along length of pipe route. The Employer's Agent may order additional test pit for each test pit that reveals the pipe installation is not in compliance with the design, at no additional cost to the Employer.
- be required to make the necessary repairs at no additional cost to the Employer, if portions of the pipe is found not to comply with the Employer's Agent's positioning requirements.

PSHD 3.6 Annular gap grouting:

The annular space between the pipe and hole shall be filled with an approved material (Bentonite slurry or similar approved) to support and stabilize the pipe. If pressure grouting is used, caution should be exercised to insure that excess grout pressure does not distort or collapse the pipe.

PSHD4 PLANT

The Contractor shall provide all the equipment necessary for the entire AC pipe replacement cracking/replacement process. This shall include equipment for maintaining water spillages, pipe cleaning, point repairs, the pipe cracking/replacement of existing pipe and testing of the pipeline.

PSHD4.1 Handling and Rigging

The plant and rigging equipment used for the handling and placing of pipes and fittings shall be such that no pipe or fitting shell is over stressed during any operation covered by the specification.

The pipes and fittings shall be handled with care at all times to avoid damage to them.

The equipment for the purpose of loading, transporting, unloading and moving and the manner in which they are handled shall be subject to the approval of the Employer's Agent. The pipes and fittings shall not be dropped, bumped or subjected to shock or rough handling and any pipe damaged during transit or handling shall be rejected by the Employer's Agent.

In the case of plastic pipes, great care shall be taken to make sure that no damage is caused to them by sharp objects. The use of bare cables, chains, hooks or narrow skids shall not be permitted and the Contractor shall supply canvas sleeves and padded skids and ramps of a sufficient width to prevent damage to the pipes and fittings.

PSHD4.2 Setting Out

The Contractor may use any acceptable device, including one incorporating a laser beam, to control the alignment and laying of the pipeline.

PSHD4.3 Testing

The Contractor shall provide the pump, pressure gauges, calibrated storage tank, and the necessary tools and fittings required for the performance of all hydraulic tests.

The hydraulic testing of pipelines against closed valves shall not be allowed and provision shall therefore be made by the Contractor for the supply of all necessary end caps and blank flanges.

PSHD4.4 Special Machines and Equipment

Any special machines and equipment recommended by the pipe manufactures for the installation of their pipes shall be used. The Engineer shall have the right to require the Contractor to use only such equipment.

In particular the following tools shall be used:

(a) Strap wrenches shall be used for tightening of compression couplings on HDPE pipes.

(b) Torque wrenches set to the correct torque shall be used for the tightening of all bolted connections.

(c) Where existing AC pipes are cut the ends shall only be reduced to size by means of a field turning machine. No filing of pipe ends shall be allowed.

(d) Where HDPE pipes are to be welded only compression butt-welding machines shall be used as recommended by the pipe manufacturer.

PSHD4.5 Plant General

The Employer's Agent shall have the right to order the immediate removal from the site of any plant which he may deem to be unsatisfactory for the proper execution of the work. The Contractor shall obtain satisfactory plant to replace that removed without delay.

PSHD5.0 TOLERANCES

PSHD5.1 General

No deviation shall be permitted from the minimum cover specified in the AA.5.4.2 or PSDB

PSHD5.2 Control Points

For the purpose of this Clause all horizontal changes of direction of the pipeline shall be regarded as control points and shall be located with a permissible vertical deviation of ± 100 mm. Where the pipes are 'swung' or the pipe is not designed to pass through the P.I. point, the two points at the ends of the straight sections of pipe shall also be control points. The same deviation will be permissible laterally except where the Contractor is required to lay the pipeline at a designated distance from a fence line, kerb line, boundary, or the like, in which case the permissible deviation shall be ± 20 mm. Unless otherwise directed and subject to a permissible deviation (measured along the centre line) of ± 4 m, scour valves shall be located at the lowest points in pipelines and air valves at the highest points.

The tolerance zone, with respect to existing facilities, which must be avoided by any part of the drill or reamer. To help maintain the required separation, the Contractor shall propose bore path, including the outer edge of the cutter/reamer, be an approximately 500mm laterally offset from the outer edges of the tolerance zone, corresponding to a total 900mm separation. For the case of the bore path crossing an exposed utility, adequate physical separation may be visually verified as the drill head or reamer passes above or beneath the existing line. In the rare event in which it is not feasible to expose an existing utility at a crossing, the position of the line must be otherwise accurately established or verified and the proposed bore path must provide a minimum of 600mm separation, or greater if required by local regulations, between the outer edge of the cutter/reamer and the closest portion of the utility, whose depth has been determined as well as reasonably possible during the identification and location process. The Employer may place additional restrictions on the allowed deviation from the proposed bore, in both vertical and horizontal directions.

PSHD5.3 Alignment Plan and Level

Unless otherwise directed the permissible deviation in alignment between control points (see AA.6.2) from a straight line joining the control points, when measured on the top centre of the pipeline, shall be ± 100 mm or ± 20% of the nominal diameter of the pipe, whichever is the larger, and the permissible deviation per pipe length shall be ± 20 mm. The permissible deviation from the designated level at any point on the invert of the pipeline shall be ± 50 mm or ± 10% of the nominal diameter of the pipe, whichever is the larger.

PSHD6 TESTING

PSHD6.1 General

Pipelines shall be tested in convenient lengths as the work proceeds, by means of the test equipment supplied by the Contractor (see Clause AA.4.3).

Each test shall be carried out in the presence of the Engineer.

Water for testing shall be made available free of charge. A water connection shall be provided by the Contractor from the existing reticulation pipe-work.

The Contractor shall, at his own cost, provide a suitable connection on the new pipeline in order that it may be filled. This connection shall be capped or removed to the satisfaction of the Employer’s Agent upon completion of the hydraulic test.

The Contractor shall be responsible for carrying out all tests and for all expenses incurred in that connection. When carrying out the hydraulic test, the Contractor shall ensure that all valves, tees and bends are properly secured and shored to prevent movement of pipes and fittings and, should any such movement occur, the Contractor shall, at his own expense, reposition and if necessary, repair the pipes and fittings and the securing means.

Until each section of the pipeline has been subjected to the pressure test and has complied with the applicable requirements, the pipeline will not be accepted. The test shall be repeated until the Engineer is satisfied that the section under test complies with the requirements.

PSHD6.2 Hydraulic Pipe Test

Unless otherwise directed, hydraulic testing shall be commenced only after permanent anchor/thrust blocks have attained at least half of their specified strength, i.e. after 14 days unless otherwise agreed by the Engineer. After the pipe trench has been partially backfilled and before the trench is filled in at the pipe joints and the fittings, the pipeline shall be tested in sections between end caps, blank flanges, or other isolating devices. The testing of pipelines against closed valves shall be permitted only with the written consent of the Engineer.

The test pressure for all pipes shall comply to that specified under section PSL or minimum of 1250 kPa.

The test pressure applied over any section of pipeline under test, taking any differences in elevation along the pipeline into account, shall be such that the pressure at any point along the section is not less than 1 000 kPa or greater than 1 500 kPa at these points unless otherwise stated in the Project Specification, Part "PSL".

The test pressure shall be maintained for a period long enough for a complete inspection of the pipeline to be made.

Should there be any leaks in the pipeline, the Contractor shall locate and repair them until the pipeline is capable of maintaining the test pressure for one hour.

PSHD6.3 Permissible Leakage Rates

During the one-hour test period the volume of water required to be pumped into the pipeline in order to maintain the test pressure shall be measured. The volume of water required shall not exceed the value, in litres, calculated from whichever of the following formulae is applicable:

(a) AC Pipes

0,075 x diameter of pipe in millimetres
x length of test section in kilometres
x square root of the test pressure in megapascals.

(b) Other Jointed Pipes

0,01 x diameter of pipe in millimetres
x length of test section in kilometres
x square root of the test pressure in megapascals.

(c) Continuously Welded Pipes

No additional water allowed.

For the CBD project, the HDPE pipe shall be considered to be continuously welded and therefore no leakage permitted.

PSHD 7.0 MEASUREMENT AND PAYMENT

PSHD 7.1 Fixed charges (inclusive of thrust and reception pit excavation, backfilling and reinstatement) ……..……**Sum**

PSHD 7.2 Time-related charges for horizontal directional drilling operations…..……..……..……Sum

PSHD 7.3 Install pipes by horizontal directional drilling method, rate to include supply, handling and operation of drilling equipment for depths not exceeding 2.5m for 90mm HDPE PN 12.5 PE100 pipes……..……**m**

PSHD 7.4 Extra over item 5.5 for lengths of pipeline greater than 85m……..**m**

PSHD 7.5 Extra over item 5.5 for drilling in hard rock……..……..….**m³**

PSHD 7.6 Supply, laying, bedding, testing, disinfecting of pipes for horizontal directional drilling, rate to include buttwelding of pipes, handling and storage, including supply, handling and storage of equipment for butt welding 90mm HDPE PN 12.5 PE100, ……..…..……..**m**

PSHD 7.7 Extra Over 5.10 for Supplying, laying, bedding of specials complete with welding (rate to include denso wrapping of steel fittings) HDPE Stub end flange (to suit 90mm PN12.5 PE 100HDPE)……..**No.**

PSHD 7.8 Steel Flanges (to suit 90mm PN12.5 PE 100HDPE)……..……**No.**

PSHD 7.9 Supply, handling, storage, laying, bedding of flange adaptors for uPVC to connect HDPE PN 12.5 PE 100 to uPVC Class 12.5 pipes…….……..**No.**

SECTION PSHSS: HEALTH AND SAFETY SPECIFICATION

PSHSS 1.0 Applicable specification

1. General Statement

It is a requirement of this contract that the Contractor shall provide a safe and healthy working environment and to direct all his activities in such a manner that his employees and any other persons, who may be directly affected by his activities, are not exposed to hazards to their health and safety. To this end the contractor shall assume full responsibility to conform to all the provisions of the occupational health and safety Act (Act 85 0f 1993), and the New Construction Regulations 2014 issued on 07 February 2014 by the Department of Labour.

For the purpose of this contract the Contractor is required to confirm his status as mandatory to the Employer (client) and employer in his own right for the execution of the contract, and he shall enter into Section 37.2 agreement in respect of the New Construction Regulations 2014 issued on 07 February 2014

2. Definition

- "Client" means any person for whom construction work is being performed
- "competent person" means a person who-
  a) has in respect of the work or task to be performed the required knowledge, training and experience and, where applicable, qualifications, specific to that work or task: Provided that where appropriate qualifications and training are registered in terms of the provisions of the National Qualification Framework Act, 2000 (Act No.67 of 2000), those qualifications and that training must be regarded as the required qualifications and training; and
  b) Is familiar with the Act and with the applicable regulations made under the Act
- "construction work" means any work in connection with -
  a) The construction, erection, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure; or
  b) the construction, erection, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system; or the moving of earth, clearing of land, the making of excavation, piling, or any similar civil engineering structure or type of work;

- "construction work permit" means a document issued in terms of regulation 3;
- "contractor" means an employer who performs construction work;
- "design" in relation to any structure, includes drawings, calculations, design details and specifications;
- "designer" means-(a) a competent person who-
  (i) prepares a design;
  (ii) Checks and approves a design;
  (iii) Arranges for a person at work under his or her control to prepare a design, including an employee of that person where he or she is the employer; or
  (iv) designs temporary work, including its components;
  (v) An architect or engineer contributing to, or having overall responsibility for a design;
  c) A building services engineer designing details for fixed plant;
  d) A surveyor specifying articles or drawing up specifications;
  e) A contractor carrying out design work as part of a design and building project; or
  f) An interior designer, shop-fitter or landscape architect; Construction Regulation 2014 3
- "health and safety file" means a file, or other record containing the information in writing required by these Regulations;
- "medical certificate of fitness" means a certificate contemplated in regulation 7(8);
- “Health and Safety Specification” means a documented specification of all health and safety requirements pertaining to the associated Works on a construction site, so as to ensure the health and safety of person during construction process. This document is prepared by the Client or Client agency.
- “Health and Safety Plan” means a documented plan which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified. This document is prepared by the Principal Contractor or the Sub Contractor.

- "Employer" Where used in contract documents and in this specification, means the employer as defined in the General Conditions of Contract and it shall be have the same meaning as "Client" as defined in the Construction Regulation 2003.
- "Employer" and "Client" is therefore interchangeable and shall be read in context of the relevant document.
- "Contractor" where used in the contract documents and in this specification shall have meaning as "contractor" as defined in the General Conditions of Contract.
- In this specification the terms "Principal Contractor" and "Contractor" are replaced with "Contractor" and "Sub Contractor" respectively
- For the purpose of this contract, the Contractor will, in terms of the OHS Act 1993, be the mandatory of the Employer, without derogating from his/her status as an employer in his/her own right.
- "Engineer" where used in this specification, means the Engineer as defined in the General Conditions of Contract. In terms of the Construction Regulations the Engineer may act as agent of behalf of the Employer (the client as defined in the Construction Regulations)
- "OHS Unit" means Occupational Health and Safety Unit within AFRIMAT DEMANENG PROPRIETARY LIMITED . Occupational Health and Safety Unit will oversees all AFRIMAT DEMANENG PROPRIETARY LIMITED Major Projects to ensure that Principal Contractor, Client Agent or Client Safety Consultants comply with Occupational Health & Safety Act 85 of 1993, Construction Regulation and all related codes of practice.

3. Application for construction work permit

1) A client who intends to have construction work carried out, must at least 30 days before that work is to be carried out apply to the provincial director in writing for a construction work permit to perform construction work if the intended construction work will-

a) exceed 180 days;
b) will involve more than 1800 person days of construction work; or
c) the works contract is of a value equal to or exceeding thirteen million rand or
Construction Industry Development Board (CIDB) grading level 6.

2) An application contemplated in sub regulation (1) must be done in a form similar to
Annexure 1.

3) The provincial director must issue a construction work permit in writing to perform Construction work contemplated in sub regulation (1) within 30 days of receiving the construction work permit application and must assign a site specific number for each construction site.

4) A site specific number contemplated in sub regulation (3) must be conspicuously displayed at the main entrance to the site for which that number is assigned.

5) A construction work permit contemplated in this regulation may be granted only if-
1) the fully completed documents contemplated in regulation 5(1)(a) and (b) have been submitted; and
2) proof in writing has been submitted-
i) that the client complies with regulation 5(5)
ii) with regard to the registration and good standing of the principal contractor as contemplated in regulation 5(1)0);
iii) and that regulation 5(1)(c), (d), (e), ((g) and (h) has been complied with.

6) A client must ensure that the principal contractor keeps a copy of the construction work permit contemplated in sub regulation (1) in the occupational health and safety file for inspection by an inspector, the client, the client's authorised agent, or an employee.
Construction Regulation 2014

7) No construction work contemplated in sub regulation (1) may be commenced or carried out before the construction work permit and number contemplated in sub regulation (3) have been issued and assigned.

8) A site specific number contemplated in sub regulation (3) is not transferrable.

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4. Scope

This specification includes health and safety elements in terms of the Occupational Health and Safety Act 85 of 1993 and to satisfy the requirements of the Construction Regulation, which will be applicable to the Principal Contractor for the safe execution of work during the project.

5. Purpose

The purpose of this specification is to ensure that the Principal Contractor provides and maintains, as far as reasonably a safe working environment for all employees and the public at large during the construction work.

6. Project Description

The project includes all activities shown on the project drawings and provisional bills of quantities. Additional work or changes to the contract may result in a change to the scope of work. The principal contractor shall make allowance for this in his Health and Safety Plan.

7. Details of Specifications

Means a site, activity or project specific document prepared by the client pertaining to all health and safety requirements related to construction work.

7.1. Scope of Work

Construction of Bulk link line from 3 Boreholes to 7ML reservoir: Phase 2A

7.2. Area

Olifantshoek

7.3. Legal Requirements

The following are but some of the legal requirements based on New Construction Regulation of 2014: Legal Appointments, Medical Examinations, Notification of Construction Work at DoL, Letter of Good Standing, Risk Assessment, etc…

7.4. Personal Protective Equipment (PPE) Required

The required PPE on this project is: Full Body overall, Hard Hat, Hand Gloves, Safety Harness, Dust Musk, Ear Plugs, Goggles and Safety Boots

7.5. Critical HAZARDS AND RISKS

Safety Consultant will provide Baseline Risk Assessment to the Contractor which must serve as guideline to the contractor Issue Based and Continuous Risk Assessment.

8. SHE Audits and Contractor Monthly Reports

1.1 A Safety Consultant Representative shall ensure that the Principal Contractor's SHE Plan is audited at intervals mutually agreed to between them, but at least once every month to ensure that the SHE Plan is implemented and maintained on site.

1.2 Safety Consultant safety officers/ Specialists shall at all reasonable times be allowed access to the work sites, the Principal Contractor site offices and tool-sheds to inspect the Principal Contractor's and its subcontractor's tools, equipment, registers and workplace.

1.3 Should any non-compliances or contraventions to the Safety Consultant safety requirements, legal requirements, this specification or the principal contractor's SHE Plan be identified, such non-compliances or contraventions shall be rectified by the contractor at its cost immediately or within a period specified by a Safety Consultant representative.

1.4 Should the Principal Contractor refuse or fail to rectify such non-compliances or contraventions, Safety Consultant may take remedial action at the Principal Contractor's cost as it may deem necessary to ensure safety at the Safety Consultant sites at all times

1.5 Safety Consultant reserves the right to conduct safety audits without prior warning

1.6 The Principal Contractor on all contracts of more than 1 month shall provide a monthly safety performance report as required by Safety Consultant

9. Appointment of Health and Safety Personnel

The Principal Contractor and Sub Contractors shall ensure that all relevant appointments specified in the Occupational Health and Safety Act 85 of 1993 and Construction Regulations are made in writing prior to commencement of the Project.

The Principal contractor shall provide adequate levels of suitable trained, experienced and competent management and supervision to ensure that the works proceed and without risks to health or environment and that all operations and personnel for whom the contractor is responsible are adequately monitored and supervised.
The Principal Contractor shall ensure that the appointments listed below are made where applicable:

- Project Manager – OHS ACT16.2 appointee
- Principal Contractor – CR7.1
- Sub-Contractor – CR7.3
- Competent Construction Manager – CR8(1)
- Competent assistant construction manager – CR8(2)
- Competent construction supervisor – CR8(7)
- Competent assistant construction supervisor – CR8(8)
- Competent safety officer – CR8.5
- Competent risk assessor – CR9.1
- Competent fall protection developer – CR10.1(a)
- Competent form work/support work supervisor – CR11(2)
- Competent excavation supervisor – CR13.1
- Competent demolition supervisor – CR14.1
- Competent scaffolding supervisor – CR16.2
- Competent suspended platform supervisor – CR17.1
- Competent material hoist inspector – CR17.8(a)
- Competent batch plant supervisor – CR18.1
- Competent construction vehicle and mobile plant inspector –CR23.1
- Competent temporary electrical installation inspector – CR24(1)
- Housekeeping and General Safeguarding Supervisor – 27.(1)
- Competent stacking and storage supervisor – CR28(a)
- Competent fire equipment inspector – CR27(h)
- Health and safety representative - CR17(1) & GAR 7
- First aiders - CR24(5.1)
- Registered electrician

10. Safety, Health and Environmental (SHE) File

10.1. The Principal Contractor shall prepare a SHE file and submit to a Safety Consultant's Representative for approval prior to commencement of work on site. The file shall include all documentation required as per the OHS Act and applicable regulations.

10.2. The approval time of the file is at least 5 working days

10.3. The principal Contractor shall ensure that a copy of both the SHE File as well as any SHE File is kept on site and made available to an inspector of the Department of Labour, the Safety Consultant Representative or subcontractor upon request.

10.4. The Principal Contractor shall hand over a consolidated SHE file to the Safety Consultant's Representative upon completion of the Construction Work and shall in addition to documentation mentioned in the OSH Act and applicable Regulations include a record of all drawings, designs, materials used and other similar information concerning the completed structure.

11. Duties of client

1) A client must-

a) Prepare a baseline risk assessment for an intended construction work project;
b) Prepare a suitable, sufficiently documented and coherent site specific health and safety specification for the intended construction work based on the baseline risk assessment contemplated in paragraph (a);
c) Provide the designer with the health and safety specification contemplated in paragraph (b);
d) Ensure that the designer takes the prepared health and safety specification into consideration during the design stage;
e) Ensure that the designer carries out all responsibilities contemplated in regulation 6;
f) Include the health and safety specification in the tender documents;
g) Ensure that potential principal contractors submitting tenders have made adequate provision for the cost of health and safety measures;
h) Ensure that the principal contractor to be appointed has the necessary competencies and resources to carry out the construction work safely;
i) Take reasonable steps to ensure co-operation between all contractors appointed by the client to enable each of those contractors to comply with these Regulations;
j) Ensure before any work commences on a site that every principal contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer as contemplated in the Compensation for Occupational

Injuries and Diseases Act, 1993 (Act No. 130 of 1993);

k) Appoint every principal contractor in writing for the project or part thereof on the construction site;
l) discuss and negotiate with the principal contractor the contents of the principal contractor's health and safety plan contemplated in regulation 7(1), and must thereafter finally approve that plan for implementation;
m) Ensure that a copy of the principal contractor's health and safety plan is available on request to an employee, inspector or contractor;
n) Take reasonable steps to ensure that each contractor's health and safety plan contemplated in regulation 7(1)(a) is implemented and maintained;
o) Ensure that periodic health and safety audits and document verification are conducted at intervals mutually agreed upon between the principal contractor and any contractor, but at least once every 30 days;
p) Ensure that a copy of the health and safety audit report contemplated in paragraph (o) Is provided to the principal contractor within seven days after the audit;
q) Stop any contractor from executing a construction activity which poses a threat to the health and safety of persons which is not in accordance with the client's health and safety specifications and the principal contractor's health and safety plan for the site;
r) Where changes are brought about to the design or construction work, make sufficient health and safety information and appropriate resources available to the principal contractor to execute the work safely; and
s) Ensure that the health and safety file contemplated in regulation 7(1)(b) is kept and maintained by the principal contractor.

2) Where a client requires additional work to be performed as a result of a design change or an error in construction due to the actions of the client, the client must ensure that sufficient safety information and appropriate additional resources are available to execute the required work safely.
3) Where a fatality or permanent disabling injury occurs on a construction site, the client must ensure that the contractor provides the provincial director with a report contemplated in section 24 of the Act, in accordance with regulations 8 and 9 of the General Administrative Regulations, 2013, and that the report includes the measures that the contractor intends to implement to ensure a safe construction site as far as is reasonably practicable.
4) Where more than one principal contractor is appointed as contemplated in sub regulation (1)(k), the client must take reasonable steps to ensure co-operation between all principal contactors and contractors in order to ensure compliance with these Regulations.

5) Where a construction work permit is required as contemplated in regulation 3(1), the client must, without derogating from his or her health and safety responsibilities or liabilities, appoint a competent person in writing as an agent to act as his or her representative, and where such an appointment is made the duties that are imposed by these Regulations upon a client, apply as far as reasonably practicable to the agent so appointed.
6) Where notification of construction work is required as contemplated in regulation 4(1), the client may, without derogating from his or her health and safety responsibilities or liabilities, appoint a competent person in writing as an agent to act as his or her representative, and where such an appointment is made the duties that are imposed by these Regulations upon a client, apply as far as reasonably practicable to the agent so appointed: Provided that, where the question arises as to whether an agent is necessary, the decision of an inspector is decisive.
7) An agent contemplated in sub regulations (5) and (6) must-
   a) manage the health and safety on a construction project for the client; and
   b) be registered with a statutory body approved by the Chief Inspector as qualified to
   c) perform the required functions;
8) When the chief inspector has approved a statutory body as contemplated in sub regulation (7)(b), he or she must give notice of that approval in the Gazette.

- 12. Duties of designer

6. (1) the designer of a structure must-
   a) ensure that the applicable safety standards incorporated into these Regulations
   b) under section 44 of the Act are complied with in the design; take into consideration the health and safety specification submitted by the client;
   c) before the contract is put out to tender, make available in a report to the client-
      i) All relevant health and safety information about the design of the relevant structure that may affect the pricing of the construction work;
      ii) The geotechnical-science aspects, where appropriate; and
      iii) The loading that the structure is designed to withstand;
   d) inform the client 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;
   e) refrain from including anything in the design of the structure necessitating the use of dangerous procedures or materials hazardous to the health and safety of persons, which can be avoided by modifying the design or by substituting materials;
   f) take into account the hazards relating to any subsequent maintenance of the relevant structure and must make provision in the design for that work to be performed to minimize the risk;
   g) When mandated by the client to do so, carry out the necessary inspections at appropriate stages to verify that the construction of the relevant structure is carried out in accordance with his design: Provided that if the designer is not so mandated, the client's appointed agent in this regard is responsible to carry out such inspections;
   h) When mandated as contemplated in paragraph (g), stop any contractor from executing any construction work which is not in accordance with the relevant design's health and safety aspects: Provided that if the designer is not so mandated, the client's appointed agent in that regard must stop that contractor from executing that construction work;
   i) When mandated as contemplated in paragraph (g), in his or her final inspection of the completed structure in accordance with the National Building Regulations, include the health and safety aspects of the structure as far as reasonably practicable, declare the structure safe for use, and issue a completion certificate to the client and a copy thereof to the contractor; and
   j) During the design stage, take cognisance of ergonomic design principles in order to minimize ergonomic related hazards in all phases of the life cycle of a structure.

13. The designer of temporary works must ensure that-
   a) All temporary works are adequately designed so that it will be capable of supporting all anticipated vertical and lateral loads that may be applied;
   b) The designs of temporary works are done with close reference to the structural design drawings issued by the contractor, and in the event of any uncertainty consult the contractor;
   c) All drawings and calculations pertaining to the design of temporary works are kept at the office of the temporary works designer and are made available on request by an inspector; and
   d) The loads caused by the temporary works and any imposed loads are clearly indicated in the design.

14. Duties of principal contractor and contractor

(1) a Principal Contractor must-

a) Provide and demonstrate to the client a suitable, sufficiently documented and coherent site specific health and safety plan, based on the client's documented health and safety specifications contemplated in regulation 5(1)(b), which plan must be applied from the date of commencement of and for the duration of the construction work and which must be reviewed and updated by the principal contractor as work progresses;

b) open and keep on site a health and safety file, which must include all documentation required in terms of the Act and these Regulations, which must be made available on request to an inspector, the client, the client's agent or a contractor; and

c) On appointing any other contractor, in order to ensure compliance with the provisions of the Act-

i) Provide contractors who are tendering to perform construction work for the principal contractor, with the relevant sections of the health and safety specifications contemplated in regulation 5(1) (b) pertaining to the construction work which has to be performed;

ii) Ensure that potential contractors submitting tenders have made sufficient provision for health and safety measures during the construction process;

iii) Ensure that no contractor is appointed to perform construction work unless the principal contractor is reasonably satisfied that the contractor that he or she intends to appoint, has the necessary competencies and resources to perform the construction work safely;

iv) ensure prior to work commencing on the site that every contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer as contemplated in the Compensation for Occupational Injuries and Diseases Act, 1993;

v) appoint each contractor in writing for the part of the project on the construction site; take reasonable steps to ensure that each contractor's health and safety plan contemplated in sub regulation (2)(a) is implemented and maintained on the construction site;

vi) ensure that the periodic site audits and document verification are conducted at intervals mutually agreed upon between the principal contractor and any contractor, but at least once every 30 days;

vii) stop any contractor from executing construction work which is not in accordance with the client's health and safety specifications and the principal contractor's health and safety plan for the site or which poses a threat to the health and safety of persons;

viii) Where changes are brought about to the design and construction, make available sufficient health and safety information and appropriate resources to the contractor to execute the work safely; and

ix) Discuss and negotiate with the contractor the contents of the health and safety plan contemplated in sub regulation (2)(a), and must thereafter finally approve that plan for implementation;

d) ensure that a copy of his or her health and safety plan contemplated in paragraph (a), as well as the contractor's health and safety plan contemplated in sub regulation (2)(a), is available on request to an employee, an inspector, a contractor, the client or the client's agent;

e) Hand over a consolidated health and safety file to the client upon completion of the construction work and must, in addition to the documentation referred to in sub regulation (2)(b), include a record of all drawings, designs, materials used and other similar information concerning the completed structure;

f) in addition to the documentation required in the health and safety file in terms of paragraph (c)(v) and sub regulation (2)(b), include and make available a comprehensive and updated list of all the contractors on site accountable to the principal contractor, the agreements between the parties and the type of work being done; and

g) Ensure that all his or her employees have a valid medical certificate of fitness specific to the construction work to be performed and issued by an occupational health practitioner in the form of Annexure 3.

(2) A contractor must prior to performing any construction work-

a) Provide and demonstrate to the principal contractor a suitable and sufficiently documented health and safety plan, based on the relevant sections of the client's health and safety specification contemplated in regulation 5(1)(b) and provided by the principal contractor in terms of sub regulation (1)(a), which plan must be applied from the date of commencement of and for the duration of the construction work and which must be reviewed and updated by the contractor as work progresses;

b) Open and keep on site a health and safety file, which must include all documentation required in terms of the Act and these Regulations, and which must be made available on request to an inspector, the client, the client's agent or the principal contractor;

c) Before appointing another contractor to perform construction work be reasonably satisfied that the contractor that he or she intends to appoint has the necessary competencies and resources to perform the construction work safely;
d) Co-operate with the principal contractor as far as is necessary to enable each of them to comply with the provisions of the Act; and
e) as far as is reasonably practicable, promptly provide the principal contractor with any information which might affect the health and safety of any person at work carrying out construction work on the site, any person who might be affected by the work of such a person at work, or which might justify a review of the health and safety plan.

(3) Where a contractor appoints another contractor to perform construction work, the duties determined in sub regulation (1)(b) to (g) that apply to the principal contractor apply to the contractor as if he or she were the principal contractor.

(4) A principal contractor must take reasonable steps to ensure co-operation between all contractors appointed by the principal contractor to enable each of those contractors to comply with these Regulations.

(5) No contractor may allow or permit any employee or person to enter any site, unless that employee or person has undergone health and safety induction training pertaining to the hazards prevalent on the site at the time of entry.

(6) A contractor must ensure that all visitors to a construction site undergo health and safety induction pertaining to the hazards prevalent on the site and must ensure that such visitors have the necessary personal protective equipment.

(7) A contractor must at all times keep on his or her construction site records of the health and safety induction training contemplated in sub regulation (6) and such records must be made available on request to an inspector, the client, the client's agent or the principal contractor;.

(8) A contractor must ensure that all his or her employees have a valid medical certificate of fitness specific to the construction work to be performed and issued by an occupational health practitioner in the form of Annexure 3.

15. Management and supervision of construction work

(1) A principal contractor must in writing appoint one full-time competent person as the construction manager with the duty of managing all the construction work on a single site, including the duty of ensuring occupational health and safety compliance, and in the absence of the construction manager an alternate must be appointed by the principal contractor.

(2) A principal contractor must upon having considered the size of the project, in writing appoint one or more assistant construction managers for different sections thereof: Provided that the designation of any such person does not relieve the construction manager of any personal accountability for failing in his or her management duties in terms of this regulation.

(3) Where the construction manager has not appointed assistant construction managers as contemplated in sub regulation (2), or, in the opinion of an inspector, a sufficient number of such assistant construction managers have not been appointed, that inspector must direct the construction manager in writing to appoint the number of assistant construction managers indicated by the inspector, and those assistant construction managers must be regarded as having been appointed under sub regulation (2).

(4) No construction manager appointed under sub regulation (1) may manage any construction work on or in any construction site other than the site in respect of which he or she has been appointed.

(5) A contractor must, after consultation with the client and having considered the size of the project, the degree of danger likely to be encountered or the accumulation of hazards or risks on the site, appoint a full-time or part-time construction health and safety officer in writing to assist in the control of all health and safety related aspects on the site: Provided that, where the question arises as to whether a construction health and safety officer is necessary, the decision of an inspector is decisive.

(6) No contractor may appoint a construction health and safety officer to assist in the control of health and safety related aspects on the site unless he or she is reasonably satisfied that the construction health and safety officer that he or she intends to appoint is registered with a statutory body approved by the Chief Inspector and has necessary competencies and resources to assist the contractor.

(7) A construction manager must in writing appoint construction supervisors responsible for construction activities and ensuring occupational health and safety compliance on the construction site.

(8) A contractor must, upon having considered the size of the project, in writing appoint one or more competent employees for different sections thereof to assist the construction supervisor contemplated in sub regulation (7), and every such employee has, to the extent clearly defined by the contractor in the letter of appointment, the same duties as the construction supervisor: Provided that the designation of any such employee does not relieve the construction supervisor of any personal accountability for failing in his or her supervisory duties in terms of this regulation.

(9) Where the contractor has not appointed an employee as contemplated in sub regulation (8), or, in the opinion of an inspector, a sufficient number of such employees have not been appointed, that inspector must instruct the employer to appoint the number of employees indicated by the inspector, and those employees must be regarded as having been appointed under sub regulation (8).

(10) No construction supervisor appointed under sub regulation (7) may supervise any construction work on or in any construction site other than the site in respect of which he or she has been appointed: Provided that if a sufficient number of competent employees have been appropriately designated under sub regulation (7) on all the relevant construction sites, the appointed construction supervisor may supervise more than one site.

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16. Notification to Department of Labour

The Principal Contractor shall before commencement of the Project, notify the Department of Labour in writing of the construction work to be undertaken if it include:

1. The demolition of a structure exceeding a height of 3meters or
2. The use of explosive to perform construction work or
3. The dismantling of fixed plant at height greater than 3 meters
4. Exceeds 30 days or when the construction work involve more than 300 person days and
5. Includes excavation work deeper than 1 meter or
6. Includes working at a height greater than 3 meters above ground or a landing

The notification must be done in the form of the pro forma included under the Occupational Health and Safety Act of the tender document.

A copy of the notification must be kept on site, available for inspection by inspectors, occupational health and safety unit representatives, employer, engineer, employees and persons on site.

17. Establishment of Health and Safety Committee

The Principal Contractor shall establish a Health and Safety Committee in terms of Section 19 of the Occupational Health and Safety Act 85 of 1993.

The Principal Contractor shall hold meeting at least once a month with appointed supervisors, Health and Safety Reps and the chairperson of the Health and Safety Committee and copies of the safety meeting to be forwarded to the client.

Matters that are to be discussed should include at least the following as minimum:

- Accident/safety incident
- Hazardous conditions
- Hazardous material/substances
- Work procedures
- PPE
- Housekeeping
- Work permits

- Non conformances
- Emergency preparedness
- Traffic control
- Access control
- Medicals
- Training
- Forthcoming high hazard activities
- Liquor and drugs
- Occupational health and hygiene issues
- General health and safety issues
- Matters arising from principal contractor safety meetings

18. Confidentiality

18.1 The Contractor must, at all times, consider all data or information given to him or that is required in connection with the work of the Company, as confidential and not makes unauthorized use of it.
18.2 He/she must ensure that such data or information is not given to any non- employee of the contractor without written consent of the employees.
18.3 The Contractor shall be aware of the confidentiality of the mentioned information and is compelled to treat it accordingly.
18.4 The contractor must provide adequate physical protection for any confidential documents, etc, which were obtained from Safety Consultant in connection with the contract work as well as any copies made thereof. If any documents or sketches are lost Safety Consultant must be notified immediately.

19. Health and Safety Hazards

The Principal Contractor shall take cognisance of the following hazards that are prevalent in the project:

<u>Hazardous Environment</u>

- Asbestos work
- Demolition work
- Dust
- Fumes
- Noise
- Insufficient lighting
- Confined space
- Weather conditions – Heat/Rain/Wind/Cold
- Working at height and on elevated structures above persons (fall protection plans required)
- Working in and around deep excavations (shoring and bracing required)
- Working next to revolving equipment
- Working next to moving plant
- Working with chemical products

<u>Hazardous Equipment</u>

- Cranes
- Earth moving equipment
- Excavators
- Trucks
- Batch plant
- Ladders
- Lifting equipment
- Pressure vessels
- Scaffolding
- Air compressors

- Chains and slings

Hazardous Operations

- Crane lifts (sometimes in windy conditions)
- DB Installations
- Excavations
- Concrete pouring
- Welding
- Concreting
- Erecting and dismantling scaffolding
- Erecting and dismantling support-work and formwork

Hazardous Tools

- Angle grinders
- Electric hand tools
- Circular saws
- Welding units – arc and gas

Hazardous Substances

- Chemicals & solvents
- Liquid petroleum
- Diesel

20. Arrangements for controlling significant site risks

The following are some examples requiring arrangements for controlling the most significant site risks.

20.1 Safety Risks

- Services, including temporary electrical installations
- Preventing employees from falling into excavations, from trucks etc
- Work with, on or near fragile materials
- Control of lifting operations
- The maintenance of plant and equipment
- Poor ground conditions
- Traffic routes and segregation of vehicles and pedestrians
- Storage of hazardous materials
- Dealing with existing unstable structures/land
- Accommodating adjacent land use
- Other significant safety risks as and when identified

20.1. Health Risks

- Storage and use of hazardous chemical substances
- Dealing with contaminated land or material
- Manual handling
- Reducing noise and vibration
- Provision of adequate lighting
- Extreme heat and cold temperature considerations
- Dealing with HIV/Aids and other illnesses
- Provision of and maintaining ablution and eating facilities
- Other significant health risks as and when identified.

All safe operating procedures, method statements or rules implemented mitigate the risk whilst performing hazardous tasks are to be effectively communicated to the contractor's staff performing the tasks.

It is to be noted that these are some of the hazards that may be prevalent in this Project.

Others may be identified during the Risk Assessment.

21. Risk Assessment

The contractor shall appoint a suitable qualified person to prepare the Health and Safety File and to keep it to date for the duration of the contract. The health and Safety File shall include the following information:

- Notification of construction Work (Construction Regulation 3) (Schedule A)
- Copy of OHS Act (updated) (General Administrative Regulation 4)
- Proof of Registration and good standing with a COID Insurer (Construction Regulation 4(g)
- Copy Health and Safety plan (Construction Regulation 5(1))
- OHS programme agreed with client including the underpinning Risk Assessment and Method Statements (Construction Regulation 5(1))
- Design/ drawings (Construction Regulation 5(8))
- A list of Contractors (subcontractors) including copies of the agreements between the parties and the type of work being done by each Contractor (Construction Regulation 9)
- Appointment/Designation forms required by the ACT and Regulations
- Registers as follows:

22. Accident/Incident Register (Annexure 1 of the General Administrative Regulations)

- OHS Representatives Inspection Register
- Form/Support work inspection
- Excavation inspection
- Lifting equipment
- Demolition Inspections
- Designers Inspection of Structure record
- Batch plant inspections
- Arc and Gas welding and Flame Cutting Equipment Inspections
- Construction Vehicles and mobile plant Inspections
- Fire equipment inspection and maintenance
- First aid
- Hazardous Chemical Substances
- Lifting Tackle and Equipment inspections
- Inspection of cranes
- Inspection of ladders
- Inspection of vessels and pressure
- Machinery inspections
- Drivers/Operators of mobile plant/construction vehicles daily inspections
- Accommodation of traffic daily inspection book

The Health and Safety File shall be handed over to the client on completion of the contract. It must contain all the documentation handed to the contractor by any sub-contractors together with a record of all drawings, designs, materials used and other similar information concerning the completed project

23. Written Safe Work Procedures

Written Safe Work Procedures are to be available in order to mitigate, reduce or control the hazards and risks identified in the Risk Assessment.

24. Personal Protective Equipment

The Principal Contractor shall ensure that the following minimum personal protective equipment and wear are issued to his employees:

- No person is allowed to enter the site without the required PPE. This must be discussed at the safety meeting and adhered to by all contractors on site.
- Principal Contractor must ensure that PPE is being used as a last resort upon trying all reasonable means to remove the hazard.
- All contractors are required to keep an updated register of all PPE issued.
- Strict compliance measures must be administered to ensure employees use PPE.
- Hard hats, safety shoes with steel toe caps and protective clothing shall be provided by the contractor free of charge for all his employees and shall be worn at all times, except in the offices. Employees working near live electricity installations shall wear non metallic helmets. Other protective equipment such as gloves, safety glasses, face shield, dust mask, ear plugs etc shall be issued and used when required. Additional safety equipment may be required for certain activities. The contractor shall ensure that his employees understand why the PPE is necessary and that they use them correctly.
- Safety belts are not allowed on site. Only double lanyard safety harnesses are allowed and must be used when conducting work at elevated positions except on properly built scaffold platform.
- Suitable impact resistant eye protection shall be worn for grinding, chipping and chasing.
- Welders, blazers and cutters shall wear suitable eye protection, gloves, apron spats and screens shall be provided to protect onlookers and passers-by.
- When handling corrosive liquids e.g. acids or caustic suitable eye protection, gloves, and special overalls shall be worn.
- Ear protection shall be worn in any designated noise zone.
- Safety harnesses shall be provided and suitably secured for work in elevated locations.
- Suitable respirators shall be provided where gas or dust pose a hazard
- Any person refusing to wear protective clothing when instructed to do so by the responsible person shall be removed from the site.

Other personal protective equipment/wear, hall be provided by the Principal Contractor based on the outcome of the Risk Assessment.

25. Access Scaffolding

The principal contractor shall provide suitable access scaffolding. The contractor shall ensure that a permit to work is always displayed on scaffolding “Safe to use” or “Not safe to use” issued by competent scaffolding inspector. When the construction work includes working at a height greater than 3m above the ground the Principal Contractor shall notify the Department of Labour.

All erection and dismantling of scaffolding will be done under the supervision of the competent personnel. The supervisor of any scaffolding team will be certificated and appointed in writing. All scaffold erectors will be trained by an accredited facility.

The erection of scaffolding will comply with all safety requirements to the satisfaction of the client and SABS Code 085 and as a minimum be fitted with the following:

- Toe boards to prevent slipping
- Correct and sufficient braces to ensure integrity
- Access ladders for personnel
- Correct and sufficient floor boards (preferably total floor coverage)
- Sole plates to ensure stability of the scaffold

Daily inspections will be carried out on all scaffolding to ensure the integrity of the erected scaffold.

26. Excavations

It is essential that the contractor shall follow the instructions and precautions in the standard specifications and Project Specifications as well as the provisions of the Construction Regulations to the letter as unsafe excavations can be a major hazard on any construction site. The contractor shall therefore ensure that all excavation work is carried out under the

supervision of a competent person that the inspections are carried out by a professional engineer or technologist on daily bases.

Supervision by competent person will not relieve the contractor from his duties and responsibilities under Regulation 11 of Construction Regulations.

27. Suspended platform

Wherever suspended platforms will be necessary on any contract, the Contractor shall ensure that the copies of the system design issued by a Professional Engineer are submitted to the Engineer for inspection and approval. The contractor shall appoint competent persons as supervisors and competent scaffold erectors, operators and inspectors and ensure that all work related to suspend platforms are done in accordance with Regulation 15 of the Construction Regulations

28. Boatswain's Chair

Wherever applicable, the contractor shall comply with provisions of Regulation 16.

29. Material Hoist

Wherever applicable, the contractor shall comply with provisions of Regulation 17.

30. Batch plant

Wherever applicable, the Contractor shall ensure that all lifting machines, lifting tackle, conveyors, etc. used in the operation of a batch plant shall comply with, and that all operators, supervisors and employees are strictly held to the provisions of Regulation 18. The Contractor shall ensure that the General Safety regulation (Government Notice R1031 of 30 May 1986), the Driven Machinery Regulation (Government Notice R2271 of 11/10/1995) are adhered to by all involved.

In terms of Regulations, records of repairs and maintenance shall be kept on site.

31. Explosive powered tools

The contractor shall ensure that, wherever explosive-powered tools are required to be used, all safety provisions of Regulation 19 are complied with.
It is especially important that warning notices are displayed and that the issue and return of cartridges and spent cartridges be recorded in a register to be kept on site.

32. Cranes

Wherever the use of tower cranes becomes necessary, the provisions of Regulation 20 shall be complied with.

33. Construction Vehicles and mobile plant

The contractor shall ensure that all construction vehicles and plant are in good working condition and safe for use, and that they are used in accordance with their design and intended use. The vehicles and plant shall only be operated by workers, operators who have received appropriate training, all in accordance with all the requirements of regulation 21.

All vehicles and plant must be inspected on daily basis, prior to use, by a competent person and the findings must be recorded in a register to be kept on site.

34. Electrical installation and machinery on construction sites

The contractor shall comply with the electrical installation Regulations (Government Notice R2920 of 23 October 1992) and the electrical Machinery Regulations (Government Notice R1953 of 12 August 1993). Before commencement of construction, the Contractor shall take adequate steps to ascertain the presence of, and guard against dangers and hazards due to electrical cables and apparatus under, over on site.

All temporary electrical installations on the site shall under the control of a competent person, without relieving the Contractor of his responsibility for the health and safety of all workers and persons on site in terms of Regulation 22.

35. Use of temporary storage of flammable liquids on construction sites.

The contractor shall comply with the provisions of the General Safety Regulations (Government Notice R1031 of May 1986) and all the provisions of Regulation 23 of Construction Regulations to ensure a safe and hazard-free environment to all workers and persons on site.

36. Water environments

Where construction work is done over or in close proximity to water, the provisions of Regulation 24 shall apply.

37. Stacking and storage on construction sites

The provisions of the stacking of articles contained in the General Safety Regulations (Government notice R1031 of 30 May 1986) as well as all the provisions of Regulation 26 of the Construction Regulations shall apply.

38. Fire precautions on construction sites

The provisions of the environmental Regulations for Workplaces (Government Notice R2281 of 16 October 1987) shall apply

In addition the necessary precautions shall be taken to prevent the incidence of fires, to provide adequate and sufficient fire protection equipment, sirens, escape routes etc. all in accordance with Regulation 27 of the Construction Regulations.

39. Occupational Hygiene

39.1. The Principal Contractor shall conduct Health Risk Assessments of all the Occupational Hygiene/Environmental stressors (e.g. noise, dust, illumination, HCS, heat & cold stressors, ergonomics, etc.) present in the area where they operate to determine if there is any possible worker exposure. Records of all these assessment should be documented and kept up to date.

39.2. The Principal Contractor shall monitor the extent to which their employees are exposed to the occupational hygiene stressors. These assessments shall be conducted by an Approved Inspection Authority as listed on the Department of Labour database. The findings from these assessments should be kept on the SHE file, communicated to all affected parties and be reported to relevant authorities.

40. Construction welfare facilities

The contractor shall comply with the construction site provisions as in the Facilities Regulations (Government Notice R1593 of 12 August 1988) and the provisions of Regulation 28 of the Construction Regulations.

41. Weather precautions

41.1. In the event of adverse weather (high winds, flooding, storm surge, lighting etc) or other conditions, the Contractor must institute precautionary measures to protect employees on site.

41.2. The Contractor shall take steps to prevent heat stroke, dehydration and exhaustion of employees as a result of exposure to excessive heat on site. Such steps may include employees taking regular brakes, consuming enough water, provision of sun brims for their hard hats and sun screen to protect them against sun burn.

41.3. The contractor shall take steps to prevent

42. Formwork and Support work

The contractor will be responsible for the adequate of all formwork and support structures by competent person.

All drawings pertaining to formwork shall be kept on site and checked for suitability by competent person.

The provisions of Regulation 10 of the Construction Regulations shall be followed in every detail.

43. Fall protection plan

A comprehensive fall protection plan is to be established in order to prevent employees from falling from elevated positions

- The contractor shall stop all persons working with erection of steelwork during periods of inclement weather or if the possibility of lightning is present
- Safety harness as fall arrest devices will be worn when working at an elevation, unless working from a safe platform
- Working on elevated positions shall only be carried out under the supervision of a competent person.
- Provision must be made to prevent objects and material from falling from elevated areas and the protection of persons working below.
- All unprotected openings in floors, edges, slabs, hatchways and stairs will be adequately barricaded and suitable visible means will be used to demarcate such barricading
- Where necessary life lines will be installed for the purpose of fall protection

All personnel working at height exceeding 3metres will be declared medically and psychological fit.

44. Permit to work

The contractor is to ensure that the proper permit is in hand and duly authorised by appointed person before commencing with the work in question, some of the activities that require a permit to work are:

- Hot works
- Working in confined spaces
- Excavation work more than 1.5m deep
- Demolition work
- Work being done 3m of an overhead power line
- Use of hazardous substances e.g. asbestos, lead

45. Housekeeping on Site

The Principal Contractor shall ensure a high level of housekeeping on site. Adequate care must be taken by the contractor to ensure that storage and stacking is correctly and safely carried out. On completion the contractor is responsible for clearing the site of all material, scrap, temporary building to the satisfaction of the client.

Removal and transportation of asbestos sheets/material shall be in full compliance with the Asbestos Regulation and suitable measures to be taken to protect the health of staff.

46. First Aid Facilities

- Adequate first aid facilities are to be available on site.
- Individuals that are trained and certified competent to administer first aid is to be on site at all times, serving as First Aid Officer.
- The following welfare facilities must be provided for and kept in clean and suitable condition, shower facility, sanitary facility, changing facility, sheltered eating facility and drinking water at strategic locations on site.

47. Compensation for Occupational Injuries and Diseases

- The Principal Contractor is to be registered and in good standing with the Compensation Fund or a licensed Compensation Insurer.
- Proof of Good Standing is to be supplied by the Principal Contractor.
- A copy of the Good Standing Certificate is to be included in the “Safety File”

48. SHE Cost

48.1. The Principal Contractor shall ensure that it has made adequate provision for the cost of health and safety measures in the tender offer.
48.2. The Principal Contractor shall ensure that its subcontractors have made adequate provision for the cost of health and safety measures in the tender offer.

49. Training/Competency Levels of Employees

The Principal Contractor is to ensure that employees engaged in this project are in possession of the necessary skills/training that is required. The following are key areas of training:

- General induction
- Site/job specific induction (also visitors)
- Site/Project Manager
- Construction supervisor
- OHS Representatives
- Training of the appointees indicated
- Operation of cranes
- Operators and Drivers
- Basic fire prevention and Protection
- Basic first aid
- Store keeping methods and safe stacking
- Emergency, Security and Fire Coordinator

50. Health and Safety Induction

- The Principal Contractor shall ensure that all employees undergo a health and safety induction.
- Proof of induction is to be included in the “Safety File”.
- The contractor is expected to have a daily safety “tool box” meeting. Subject topics that are applicable to the job at hand e.g. near misses that have happened, accident and up and coming work will be discussed along suggestion and comments.
- These meetings can be used as a training meeting with the central idea of educating employees.

51. Health and Safety Plan

The Principal Contractor is to establish a Health and Safety Plan based on the requirements of this document and the Risk Assessment and Safety Specification

52. Health and Safety File

The Contractor shall in terms of Construction Regulation 5(7) maintain a Health and Safety File on site at all times. The Health and Safety File is a file or other permanent record containing information on aspects of the construction project – which will be necessary to ensure the health and safety of any person who may be affected by the construction work. The contractor shall appoint a suitable qualified person to prepare the Health and Safety File and to keep it up to date for the duration of the contract. The Health And Safety file shall include the following information:

- Notification of construction work
- Copy of OHS Act
- Proof of registration and good standing with a COID Insurer
- Copy of health and safety plan
- OHS Programme agreed with Client including the underpinning Risk Assessment And Method Statements
- Design/drawings
- A list of Contractors (Subcontractors) including copies of the agreements between the parties and the type of work being done by each Contractor
- Appointment/Designation forms required by the Act and Regulations
- Registers as follows

53. Accident/Incident Registers (annexure 1 of the General Administrative Regulation)

- OHS Representatives Inspection register
- Form/Support Work Inspection
- Lifting Equipment
- Demolition Inspections
- Designer's Inspection of structure Record
- Batch Plant
- Arc & Gas Welding & Flame Cutting Equipment Inspections
- Construction Vehicles and Mobile plant inspection
- Electrical Installation and Machinery inspections
- Fire equipment Inspection and maintenance
- First aid
- Hazardous Chemical Substance
- Lifting Tackle and Equipment Inspection
- Inspection of cranes
- Inspection of ladders
- Inspection of vessels under pressure
- Machinery inspections
- Drivers/Operators of mobile Plant/construction Vehicles daily inspections
- Accommodation of traffic daily inspection book

The health and Safety File shall be handed over to the client on completion of the contract. It must contain all the documentation handed to the Contractor by any Subcontractors together with a record of all drawings, designs, materials used and other similar information concerning the completed project

54. Health and Safety Meetings

- Health and Safety meetings are to be held at least once per month during the project period.
- Minutes of such meetings shall be maintained and included in the "Safety File".

55. Accident/Incident Reporting and Investigations

- All accidents/incidents shall be recorded and investigated and reported to Occupational Health & Safety Unit.
- Accidents/incidents are to be reported to the Designated Gamagara Development Forum Project Manager.
- All reportable incidents in terms of Section 24 of the OHS ACT shall be investigated and recorded by the contractor as required by the legislation and also reported to Occupational Health & Safety Unit.
- The contractor shall compile an investigation report and ensure that all the preventative actions recommended are in place.

56. Health and Safety Inspections/Audits

- The Principal Contractor shall ensure that the work area, equipment, machinery, safety equipment and wear, etc are inspected on a regular basis.
- Proof of such inspections are to be maintained in the "Safety File"
- All non conformances revealed during the inspections are to be noted and rectified as soon as possible. The client, health and safety unit will also conduct formal audits at least once a month and deviations that are revealed must be rectified within the required time frame.
- All portable tools shall be inspected daily by the user as well as weekly recorded inspections and testing to be done.

57. Medical Surveillance

- The Principal Contractor shall ensure that all his employees undergo the appropriate medical surveillance based on the risk and hazards expose to, particular to employees working with asbestos.
- The medical surveillance records is to be included in the "Safety File"

58. Site Security

The Principal Contractor shall ensure that access to site is controlled so that children or unauthorised persons are prevented from wandering onto site.

Suitable signage to be displayed in this respect, it is imperative that the principal contractor ensures the safety of all workers as well as property and material on site.

The Principal Contractor safety officer shall also in collaboration with the sub contractor personnel develop traffic plan for the site to ensure the safe movement of all construction related mobile plant and employees at large and this plan is to be reviewed at monthly safety meeting to ensure its applicability.
The contractor shall demarcate the route along which their employees may proceed when coming or going off shift and all security requirements shall be highlighted at the induction given by the Principal Contractor.

59. Management of Subcontractors

59.1. The Principal Contractor is directly responsible for the actions of his contractors/subcontractors.
59.2. The principal contractor will also be responsible for initiating any remedial action (recovery plan) that may be necessary to ensure that the contractor complies with all requirements.
59.3. The principal contractor shall provide any contractor who is making a bid or appointed to perform construction work, with the relevant sections of the documented she specification, who would in turn provide a she plan for approval.
59.4. The principal contractor shall carry out inspection /audits on the contractor /subcontractor to ensure that their she plan is being implemented and maintained and submit audit report to TFR Representative.
59.5. The principal contractor shall stop any contractor/subcontractor from executing construction work which poses a threat to the safety and health of persons or the environment.
59.6. The contractor shall ensure that the sub-contractors appointed have the necessary competencies and resources to perform the work safety.
59.7. The principal contractor will be required to submit 37(2)mandatory agreement between the principal contractor and subcontractor to the TFR contract Representative

60. Emergency Preparedness

The Principal Contractor shall develop and implement an emergency plan for site in collaboration with sub contractors and the client representative. The plan would have to be revised due to the changing environment on construction site. Specific requirements for first aid and medical as well as fire and rescue will be addressed. The contractor is to ensure that the necessary fire fighting equipment is in place in respective area.

61. Non Compliance to Health and Safety Standards

The Gamagara Development Forum Representatives reserve the right to stop the operations of the Principal Contractor should it be found that the operations are being undertaken in non compliance with the laid down health and safety plan based on this specification.

The client has the authority to issue a non conformance report to any contractor not complying to the SHE requirements on site, with necessary required rectification action required within a specific time frame.

It is noted to the contractors that any expenses incurred due to non conformances shall be for Contractor's account in question.

Safety officers and other personnel have the authority to stop work if there is a life threatening situation or danger of material loss/damage and direct immediate remedial action under the supervision of contractor's manager is required.

Any "stop work order' shall be followed up and the site manager shall present a written report including remedial actions to avoid the re-occurrence and disciplinary action for contravening safety regulation and if considered necessary to instruct the site manager to remove certain of his personnel from site.

62. Demolition work safety requirements

The principal contractor shall appoint a competent person in writing to supervise and control all demolition work on site.

The principal contractor shall ensure that prior to demolition work being carried out, a detailed structural engineering survey of the structure to be demolished is carried out by competent person and a method statement on the safe working procedure to be followed is developed and all people are familiar with.

During the demolition, a competent person shall check the structural integrity of the structure at intervals determined in the method statement in order to avoid any premature collapses.

The principal contractor shall ensure that no floor, roof or other part of the structure is overloaded with debris in a manner which would render it unsafe.

The principal contractor shall ensure that all reasonable practicable precautions are taken in the form of adequate shoring and bracing or such other means as may be necessary to prevent the accidental collapse of any part of the structure.

The principal contractor shall ensure that as far as is reasonably practicable the location of electricity, water, sprinkler system, gas, break glass unit, alarm system and smoke detectors or any similar services which may be affected by the demolition work, take the steps that may be necessary to render circumstances safe for all persons involved.
The principal contractor shall ensure that every stairway and every floor where demolishing is taken place ensure that such places are adequately illuminated by either natural or artificial means.

The principal contractor shall ensure that a catch platform or net is erected above an entrance or passageway or above a place where persons work or pass under or fence off the danger area to avoid people struck by falling objects.
Where the risk assessment indicates the presence of lead or asbestos, the principal contractor shall ensure that work is conducted in accordance with the provisions of Lead or Asbestos Regulation.

Where the demolition work involves the use of explosive, a method statement is to be developed in accordance with applicable explosive legislation, by an appointed person who is competent in the use of explosive for demolition work and the procedures therein are adhered to.

The principal contractor shall ensure that all waste and debris is as soon as reasonably practicable removed and disposed of from the site in accordance with the applicable legislation.

63. Environmental management

63.1. Aspect/impact register and plan

Contractor will comply with the client's system. All impacts identified will conform to the client's procedures. Aspects include air, soil and water pollution.

63.2. Waste management

To ensure the control of waste from the site
Generating of waste will be managed in such a way as to minimize the amount of waste that is produced.

- Specific waste bins will be provided for specific types of waste.
- All the bin and skip locations on site will be clearly marked.
- All bins and skips will be emptied out regularly to prevent overflowing

63.3. Pollution management

To ensure effective management of surface and air pollution originating from the company's sites.

An environmental impact study will be done on all types of pollution that is generated from this site were required.
Control measures must be upgraded regularly as technology improves on pollution control and prevention systems.
All employees must be trained on the control measures and the standards that are set.

Spill control and clean-up plans and procedures must be drawn up and set in place.
Training must be given on the spill control plans to ensure quick and effective cleaning after spillages.

63.4. Resource Conservation

Electricity and water usage will be recorded and monitored in order to optimize usage.

63.5. Environmental Monitoring

Monitoring will comply with The National Environmental association. The Contractor will must submit monthly Environmental Management Report which indicates monitoring of all aspects and activities of the project.

- ACKNOWLEDGEMENT OF RECEIPT

I _____ (Name & Surname) in my capacity as _____ (Title), a representative of _____ (Contractor). Hereby acknowledge receipt of the Site Safety Health and Environment (SHE) Specification. I commit to execute all my work activities of this project from the beginning to the end in accordance to the requirements of the specification.

Name and Surname	Capacity	Date	Signature

PSHSS 2.0 MEASUREMENT AND PAYMENT

PSHSS 2.1 Safety Precautions for open trenches…….sum

PSHSS 2.2 Health and Safety Requirements (incl permit of work application)…….sum

PSHSS 2.3 Health and Safety Plan……..sum

PSHSS 2.4 Health and Safety File……sum

PSHSS 2.5 Health and Safety Medicals (Entry Medicals)……sum

PSHSS 2.6 Health and Safety Medicals (Exit Medicals)……..sum

PSHSS 2.7 Provisional Sum for the contractor to provide PPE to all local part time labourers for the entire contract period as required in terms of the OHS specification. PPE to be replaced every 6 months in case where labourers are employed for periods longer than 6 months. All labourers to received own PPE. ……Sum

PSHSS 2.8 Overheads, charges and profit on item 1.75…….%

PSHSS 2.9 Penalty to be deducted for non-compliance with regard to OHS requirements……no

SECTION PSEMS: ENVIRONMENTAL MANAGEMENT SPECIFICATION

PSEMS.1 General

In order to ensure that the construction works is carried out in an environmentally sensitive matter, strict compliance to the Environmental Management Plan (EMP) guidelines is required. The maximum proposed pipelines which are 355mm in diameter and are not listed items in terms of the latest amended National Environmental Management Act and they will also be constructed on the existing servitude, and therefore, the existing Environmental Impact Assessment will be sufficient. The purpose of the EMP is to:

- Encourage good management practices through planning and commitment to environmental issues,
- Provide rational and practical environmental guidelines to:
  I. Minimize disturbance of the natural environment,
  II. Prevent pollution of land, air and water,
  III. Prevent soil erosion and facilitate re-vegetation.
- Adopt the best practicable means available to prevent or minimize adverse environmental impact,
- Develop waste management practices based on prevention, minimization, recycling, treatment or disposal of wastes,
- Train employees and contractors with regard to environmental obligations.

PSEMS.2 Training and Induction of Employees

- The Contractor has a responsibility to ensure that all those people involved in the project are aware of and familiar with the environmental requirements for the project (this includes sub-contractors, casual labour, etc.). The EMP shall be part of the terms of reference for all contractors, sub-contractors and suppliers.

PSEMS.3 Complaints Register and Environmental Incident Book

Any complaints received by the project team from the public will be recorded. The complaint should be brought to the attention of the site manager, who will respond.

The following information must be recorded:

- Time, date and nature of the complaint,
- Type of communication (telephone, letter etc),
- Name, contact address and telephone number of the complainant,
- Response and investigation undertaken and
- Actions taken and by whom.

All complaints received will be investigated and a response given to the complainant within 14 days.

All environmental incidents occurring on the site will be recorded. The following information will be provided:

- Time, date, location and nature of the incident,
- Actions taken and by whom.

PSEMS.4 Working Areas, Site Cleanliness and Neatness

- Construction activities may be conducted only in designated working areas. Limitation of construction activities to specific working areas minimises the impact on the natural environment and facilitates control of the works. Sites shall be divided into working areas and “no-go” areas:
- Working areas are those areas required by the Contractor to construct the Works and as approved by the Employer’s Agent. These areas include the area of permanent works, borrow areas and haul roads between the site and borrow areas. If necessary, the working areas may be demarcated during the construction period. The Contractor will not be permitted to undertake any work outside of the designated working areas.

- "No-go" areas are those areas outside of working areas.
- Location of a construction camp is to be approved by the Engineer and is to be restored to its previous condition after completion of construction.
- The construction camp should preferably be fenced with a 1.8m bonnox fence or similar approved.
- All materials, equipment, plant and vehicles must be stored within the construction camp.
- A dedicated area must be made available for construction staff to change and store their personal belongings.

PSEMS.5 Access

- Access to existing roads, schools, buildings, shops and residential properties must not be impeded during construction.
- Access roads utilised by the Contractor must be maintained in good condition.

PSEMS.6 Borrow Pits

- Mining authorizations (permits) for borrow pits must be obtained from the Department of Minerals and Energy (DME) in consultation with the Department of Water Affairs and Forestry (DWAF).
- Spoil dumps resulting from borrow pits must not interfere with any natural surface drainage.
- Borrow pits must be rehabilitated after use in accordance with the requirements of DME and DWAF.
- Borrow pits will be fenced and the necessary warning signs will be erected.

PSEMS.7 Dust Control / Air Quality

- Dust suppression measures must be implemented during construction by ensuring that all surfaces prone to dust generation are kept damp (e.g. use of water tanker).
- Ensure that vehicles and equipment are in good working conditions and that emissions are not excessive.
- Ensure that vehicles and equipment are in good working conditions and that emissions are not excessive.
- Special care must be taken in areas where the route passes close to schools and residential areas.
- The speed of construction vehicles must be reduced.

PSEMS.8 Fauna

- Contractor staff may not chase, catch or kill animals encountered during construction.

PSEMS.9 Fire Prevention and Control

- Smoking is prohibited in the vicinity of flammable substances.
- The contractor must ensure that fire-fighting equipment is available on site, particularly where flammable substances are being stored or used, and that construction staff are aware of where it is kept and how it is operated.
- Fires started for comfort (warmth) are prohibited, due to the risk of veld fires and risk to adjacent property owner's lands.

PSEMS.10 Grave Sites

- Gravesites in close proximity to the road must not be disturbed during construction.

PSEMS.11 Materials Handling and Spills Management

- Any hazardous materials to be used during construction (e.g. lime, fuel, paint, etc) are to be stored in a designated area at the campsite.
- The storage containers/facilities (including any diesel/petrol tanks) must be placed on an impermeable surface and surrounded by a bund wall, in order to ensure that accidental spillage does not pollute the environment.

- Workers must at all times be made aware of the health and safety risks associated with any hazardous substances used (e.g. smoking near fuel tanksju) and must be provided with appropriate protective clothing/equipment in case of spillages or accidents.
- Ensure all staff and contractors undergo relevant training in the maintenance of equipment to prevent the accidental discharge or spill of fuel, oil, lubricants and other chemicals.
- Any spill of potentially hazardous materials must be cleaned up immediately (Potentially hazardous materials on site include paint, oil, grease, fuel, turpentine, etc).
- The area of contaminated soil or spill must be deposited into the hazardous waste container(s).
- The contractor should keep Peat, Sorb or a similar absorbent on site to clean up any spills. The absorbent must be stored in a designated area and be available for inspection.
- All spills are to be recorded in the environmental incident book.

PSEMS.12 Noise

- Noise generating activities must be restricted to between 07:00 and 17:00 Monday to Friday, unless otherwise approved by the appropriate competent person in consultation with adjacent landowners/affected persons.
- All equipment, vehicles and machinery must be in good working condition and be equipped with sound mufflers if necessary.
- Construction staff must be trained and made aware of not creating unnecessary noise such as hooting and shouting.

PSEMS.13 Pollution Control

- Soil and water pollution through usage of fuel, oil, paint, bitumen or other hazardous substances must be avoided.
- All construction vehicles are to be maintained in good working order so as to prevent soil or water pollution from oil, fuel or other leaks, and to reduce noise pollution.

PSEMS.14 Rivers and Streams

- During construction of bridge structures, there must be no obstruction of the water flow of rivers and streams.
- Excavated material must not be stockpiled on or near riverbanks, in order to prevent sedimentation occurring.
- Erosion control measures must be employed both during and after construction.
- No impediments to natural surface water flow, other than approved erosion control measures, must occur.

PSEMS.15 Safety

- Safety measures, such as detour signs, must be implemented during construction to ensure the safety of workers, pedestrians and drivers/passengers in vehicles in the vicinity of construction work.
- Special care must be taken in the vicinity of schools to ensure the safety of children wishing to cross the road under construction.
- The relevant signage (e.g. speed control signs) must be erected alongside the road during the operation phase in order to control traffic.
- Accommodation must be made for pedestrian pathways alongside the road during the construction and operation phases.

PSEMS.16 Soil Management

- Stormwater drainage pipes must be installed alongside the road in all areas susceptible to soil erosion.
- Erosion should be minimized by the construction of meadow drains and the planting of indigenous vegetation on the side slopes and drains to reduce flow velocity of stormwater.
- Spoil from cuts may be used in existing erosion galleys.
- Stone pitching and gabions should be constructed at pipe culvert outlets.

- Accidental spills of contaminants onto the ground e.g. oil, concrete, fuel and chemicals should be removed together with the contaminated soil.
- If necessary an absorbent such as Peat Sorb should be used the aid in cleaning up the spill. The contaminated soil should be disposed of in an appropriate container, depending on its classification.
- Servicing and re-fuelling of vehicles must only be carried out at construction camp.

PSEMS.17 Worker Conduct

Code of Conduct for Construction Personnel:

- Do not leave the construction site untidy and strewn with rubbish which will attract animal pests.
- Do not set fires.
- Do not cause any unnecessary, disturbing noise at the construction camp/site or at any designated worker collection/drop off points.
- Do not drive a construction-related vehicle under the influence of alcohol.
- Do not exceed the national speed limits on public roads or exceed the recommended speed limits on the site.
- Do not drive a vehicle which is generating excessive noise or gaseous pollution (noisy vehicles must be reported and repaired as soon as possible).
- Do not litter along the roadsides, including both the public and private roads.
- Do not pollute any water bodies (whether flowing or not).
- No member of the construction team is allowed to enter the areas outside the construction site.

PSEMS.18 Traffic Disturbances and Diversions

- Any traffic diversions must be undertaken with the approval of all relevant authorities and in accordance with all relevant legislation.
- Wherever possible, traffic diversion must only take place on existing disturbed areas and remain within the existing road reserve.
- Traffic diversion routes must be rehabilitated after use.

PSEMS.19 Vegetation

- Only vegetation falling directly on the route must be removed where necessary.
- Alien vegetation within the road reserve must be eradicated, and management measures must be implemented for future control of these species.
- Vegetation that has been removed from large areas (e.g. on traffic diversion routes) during construction must be replaced with indigenous vegetation after construction has been completed.

PSEMS.20 Waste Management

- All general, non-hazardous waste must be placed in a skip container and disposed of at a registered waste disposal site.
- The contractor is to ensure that the portable toilet facilities at the campsite are properly maintained and in working order.
- No disposal, or leakage, of sewage must occur on or near the site.
- All hazardous waste (e.g. oil, paint, empty lime bags, contaminated wash water, etc) must be stored in leak proof containers and disposed of at a registered hazardous waste disposal site.
- The contents of waste storage containers must, under no circumstances, be emptied to the surrounding area. In general, littering, discarding or burying of any materials is not allowed on site or along the route.
- Adequate waste receptacles must be available at strategic points around the construction camp and site for all domestic refuse and to minimize the occurrence of littering.
- Concrete rubble must be collected and disposed of as directed by the Project Manager.
- Each working area must be cleared of litter and building waste (e.g. rubble, wood, concrete packets etc) on completion of the day's work.
- Any spill around the container(s) should be treated as per Section EMP11 and EMP16.

PSEMS.21 PENALTIES

The Responsible Person shall issue fines if the Contractor infringes these Environmental Specifications. The Contractor shall be advised in writing of the nature of the infringement and the amount of the fine. Monies for the fine will be deducted from the monthly certificates. The Contractor shall determine how to recover the fine from the relevant employee and/or sub-Contractor. The Contractor shall also take the necessary steps (e.g. training) to prevent a recurrence of the infringement.

The Contractor is also advised that the imposition of spot fines does not replace any legal proceedings the authorities, landowners and/or members of the public may institute against the Contractor.

In addition to the fine, the Contractor shall be required to make good any damage caused as a result of the infringement at his own expense.

A preliminary list of infringements for which fines will be imposed is as follows:

INFRINGEMENT	PENALTY
Infringement of PSEMP 4	R1 000
Infringement of PSEMP 8	R 1 000 per plant
Infringement of PSEMP 11.	R1 000 per incident.
Infringement of PSEMP 12.	R1 000 per incident.
Infringement of PSEMP 13.	R1 000 per incident.
Infringement of PSEMP 16.	R1 000 per incident.
Any other infringement of the Environmental Specifications.	R1000 per infringement.

PSEMS .22 PAYMENTS

PSEMS 22.1 Complying with the Environmental Management Plan…….sum

PSEMS 22.2 Penalty for non-compliance with requirements…….no

GAMAGARA LOCAL MUNICIPALITY

CONTRACT NO: **2020/48**

FOR: **GROUNDWATER SUPPLY IN OLIFANTSHOEK: CONSTRUCTION OF BULK LINK LINE FROM 4 BOREHOLES TO 7ML RESEVIOR: PHASE 3**

PART C4 SITE INFORMATION

1 NATURE OF GROUND AND SUBSOIL CONDITIONS

Tenderers shall be deemed to have inspected and examined the Sites and its surroundings and information available in connection therewith and to have satisfied himself before submitting his tender as to the

a) the form and nature of the site and its surroundings, including subsurface conditions,
b) the hydrological and climate conditions,
c) the extent and nature of the work and materials necessary for the execution and completion of the Works,
d) the means of access to the Sites and the accommodation he may require.

For the purposes of the Contract it will be deemed that, prior to submitting his Bid, the Contractor acquainted himself fully with the Site information.

2 LOCATION

Please refer to attached Drawings (Locality Plan)