Ugu District Municipality

PANEL FOR PIPELINE REPLACEMENT PROGRAMME

CONTRACT №: UGU 07-1628-2023

UGU DISTRICT MUNICIPALITY PIPELINE REPLACEMENT PROGRAMME: PLANNED REPLACEMENT OF BULK AND RETICULATION PIPELINES AND MISCELLANEOUS WORKS FOR A PERIOD OF THIRTY-SIX (36) MONTHS

CIDB CONTRACTOR GRADING: 4CE OR HIGHER

Tender Closes: 31 March 2023

NAME OF TENDERER	
ADDRESS OF TENDERER	
TELEPHONE	
FAX	
Tender Sum	

CONTACT DETAILS:
Ugu District Municipality
P O Box 33
PORT SHEPSTONE
4240
Tel Nº: +27 39 688 3441
Email: rowan.mlambo@ugu.gov.za

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Ugu District Municipality

CIDB CONTRACTOR GRADING: 4CE OR HIGHER
UGU DISTRICT MUNICIPALITY PIPELINE REPLACEMENT PROGRAMME:
THE MUNICIPALITY REQUEST FOR A PANEL OF CONTRACTORS FOR THE PLANNED REPLACEMENT OF BULK AND RETICULATION PIPELINES AND MISCELLANEOUS WORKS FOR ACROSS UGU DISTRICT MUNICIPALITY AREAS OF OPERATIONS FOR A PERIOD OF THIRTY-SIX (36) MONTHS

CONTRACT №: 07-1628-2023

The Ugu District Municipality invites A Panel of Contractors for or the planned replacement of aged pipelines ranging from 32 mm – **525** mm Diameter and associated works at various locations throughout the Ugu District Municipality, incorporating the water supply networks.

The contract is for 3 years and requires resources to be available over this contract period to be deployed to respective sites within the entire Ugu District Municipality supply areas. It is estimated that the Tenderers should have a CIDB grading of 4CE, or higher. Joint ventures and potentially emerging enterprises that satisfy the criteria stated in the tender data are eligible to tender.

The physical address for collection of tender documents is **Ugu District Municipality at No. 28 Connor Street, Port Shepstone, 4240**. No documents will be distributed at the tender briefing meeting.

Tender Documents are obtainable during the following times: 08h00 to 15h00 (Monday to Friday) as from 27 February 2023.

A non-refundable tender deposit of R**300** payable in cash or by a bank guaranteed cheque made out in favour of **Ugu District Municipality is required on collection of the tender documents. The bid will also be advertised on National Treasury's E Tender portal and Ugu District Municipality website and documents can be downloaded from the websites, free of charge.**

Queries relating to the technical issues of these documents may be addressed to Mr Rowan Mlambo from Ugu District Municipality under Water Resource Management on Telephone 039 688 3441 (8am – 5pm) or email at rowan.mlambo@ugu.gov.za

A compulsory clarification meeting with representatives of the Employer will take place at the entrance of Phase 2 Building of the Ugu District Municipality Offices 96 Marine Drive, Oslo Beach Offices on Tuesday 07 March 2023 starting at 10h00. The closing time for receipt of tenders is **12h00 on Friday 31 March 2023**. Only tenders deposited into the official tender box by the closing time and date will be accepted.

Tenders, completed as prescribed, shall be sealed in an envelope marked:

"UGU DISTRICT MUNICIPALITY PIPELINE REPLACEMENT PROGRAMME:
Tender No: 07-1628-2023

and deposited in the official tender box in the foyer of Ugu District Municipality Offices at **96 Marine Drive, OSLO BEACH**. (The municipality will not be held responsible for any tenders delivered by courier services.)

The municipality reserves the right to request bidders for the extension of the tender validity period.
Ugu District Municipality subscribes to the Preferential Procurement Regulations 2022, pertaining to the Preferential Procurement Policy Framework Act (PPPFA) principles whereby a bidder's submission will be evaluated according to the sum of the award of points in respect of the tender value and Specific Goals.

Price and Preference and quality will be used for evaluation. The **80/20 or 90/10** preferential point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system. For Specific Goals (*See below table)*, in terms of revised Preferential Procurement Regulation in effect from 16 January 2023 Gazette Notice No. 47452 dated 04 November 2022.

Points to be allocated as follows:

	Categories	Weight	80|20	90|10
1	Ownership	60%	12	6
2	Reconstruction & Development Programme	30%	6	3
3	Other Specific Goals-	10%	2	1
		100%	20	10
#	Specific Goal(s)	Weight	80|20 PP	90|10 PP
	Ownership Categories :			
1	**Broad Based Black Economic Empowerment:**			
	1. BBBEE Level 1	100%	12	6
	2.BBBEE Level 2	80%	10	5
	3. BBBEE Level 3 to 8	40%	6	3
2	**Promotion of Local Business(s)**			
	1. Enterprise Located within the District Municipality - Rural	100%	6	3
	2. Enterprise Located within the District Municipality - Urban	67.7%	4	2
	2. Enterprise Located within the Province	33.3%	2	1
3	**Other Specified Goals**			
	1. Enterprise 100% owned by Youth/Women/Disabled/ Military V	100%	2	1

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

Description
Experience of Bidder with respect to similar projects
Experience of Key Personnel (Contracts Manager)
Experience of Key Personnel (Construction Manager/ Site Agent)
Experience of Key Personnel (Foreman)
Experience of Key Personnel (Artisan)
Construction Methodology and Preliminary Programme

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

The Council reserves the right not to accept the lowest bid or any bid and reserves the right to accept the whole or part of the bid, or to reject all bids and cancel the notice to tender.

Tenderers shall take note of the following tender conditions:

- *Ugu District Municipality does not bind itself to accept the lowest or any tender.*
- ***Ugu District Municipality may negotiate final rates with preferred bidders and award to more than one tenderer. Preferential Procurement Regulations 2017 make provision for negotiating a fair market price with preferred bidders.***

- *Tenders submitted are to remain valid for 90 days from the closing date for submission of tenders.*
- *Only Tenderers with a CIDB category grading of 4CE or higher will be considered.*
- ***Kindly note that Regulation 44 of the Municipal Supply Chain Management Regulation states that the municipality may not make any award to a person who is in the service of the state.***

VO MAZIBUKO
Acting Municipal Manager
Ugu District Municipality

T1.2: Tender Data

The Conditions of Tender applicable to this contract are the Standard Conditions of Tender as contained in Annexure F of the CIDB *Standard for Uniformity in Construction Procurement,* and as *Annex F* of the CIDB *Standardized Construction Procurement Documents for Engineering and Construction Works (28 May 2010).This document is obtainable separately.*

The Tender Data make several references to the Standard Conditions of Tender for details that apply specifically to this tender. The Tender Data shall have preference in the interpretation of any ambiguity or inconsistency between it and the Standard Conditions of Tender.

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

Clause Number	**Description**
F.1.1	The Employer is **Ugu District Municipality**
F.1.2	The tender documents issued by the employer comprise: **Tendering Procedures** T1.1 Tender Notice and Invitation to Tender T1.2 Tender Data **Returnable Documents** T2.1 List of Returnable Documents T2.2 Returnable Schedules **Part 1: Agreements and Contract Data** C1.1 Form of offer and acceptance C1.2 Contract data C1.3 Form of Guarantee C1.4 Adjudicator's Contract C1.5 Agreement in terms of the Occupational Health and Safety Act No. 85 of 1993 **Part 2: Pricing data** C2.1 Pricing instructions C2.2 Activity schedules / Bills of Quantities **Part 3: Scope of work** C3 Scope of work **Part 4: Site information** C4 Site information

Clause No.	Description
F.1.4	The Employer's representative, for the purpose of any communication between the Employer and the tenderer is: Name: Mr Rowan Mlambo Address: 96 Marine Drive, Oslo Beach Tel Nº: 0396883441 Email: Rowan.mlambo@ugu.gov.za
F.2.1	The following tenders who are registered with the CIDB or are capable of being so registered prior to the evaluation of submissions, are eligible to submit tenders. a) contractors who have a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a 4CE class of construction work; and b) contractors registered as potentially emerging enterprises with the CIDB who are registered in one contractor grading designation lower than that required in terms of a) above (ie 4CE PE) and who satisfy the following criteria: • They can demonstrate they have the financial resources to undertake the work being tendered for • They have priced documents fairly and can demonstrate the basis of pricing of items where in the Employer Representative's opinion the pricing is unbalanced • They can demonstrate that they have experienced personnel to manage the work being tendered for. c) Joint ventures are eligible to submit tenders provided that: 1. Every member of the joint venture is registered with the CIDB; 2. the lead partner has a contractor grading designation in the CE class of work. The combined contractor grading designation calculated in accordance with the Construction Industry Board Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for 4CE class of construction or a value determined in accordance Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations.
F2.7	The arrangements for a compulsory briefing meeting are: Location: Oslo Beach office Parking Date: *07 March 2023* Starting Time: *10h00* **Tenderers must sign the Attendance Register in the name of the tendering entity. Addenda will be issued to and tenders will be received only from those tendering entities appearing on the Attendance Register.**

F2.12	If a tenderer wishes to submit an alternative offer, the only criteria permitted for such alternative tender offer is that it demonstrably satisfies the Employer's standards and requirements, the details of which may be obtained from the Employer's Agent. Calculations, drawings and all other pertinent technical information and characteristics as well as modified or proposed Pricing Data must be submitted with the alternative tender offer to enable the Employer to evaluate the efficacy of the alternative and its principal elements, to take a view on the degree to which the alternative complies with the Employer's standards and requirements and to evaluate the acceptability of the pricing proposals. Calculations must be set out in a clear and logical sequence and must clearly reflect all design assumptions in the development of the pricing proposal. Acceptance of an alternative tender offer will mean acceptance in principle of the offer. It will be an obligation of the contract for the tenderer, in the event that the alternative is accepted, to accept the full responsibility and liability that the alternative offer complies in all respects with the Employer's standards and requirements. The modified Pricing Data must include an amount equal to 5% of the amount tendered for the alternative offer to cover the Employer's costs of confirming the acceptability of the detailed design before it is constructed.
F2.13.2	Return all returnable documents to the Employer after completing them in the entirety by writing in black ink.
F2.13.3	Tender offers shall be submitted as an original only. Photocopies of the original tender documentation may be used, but an original signature must appear on such photocopies.
F2.13.4	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 in 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 F2.15.1	The employer's address for delivery of tender offers and identification details to be shown on each tender offer package are as follows: Location of Tender Box: **Foyer of Ugu District Municipality Offices** Physical Address: **96 Marine Drive, Oslo Beach, PORT SHEPSTONE,4240** Identification details: *Pipeline Replacement Contract no: UGU-07-1628-2023*
F.2.13 F.3.5	A two-envelope procedure will not be followed.
F.2.15	The closing time for submission of tender offers is …**12h00 on Friday 31 March 2023.**
F.2.15	Telephonic, telegraphic, telex, facsimile or e-mailed tender offers will not be acceptable.
F.2.16	The tender offer validity period is **90 days** from the tender closing date.
F.2.23	The tenderer is required to submit with his tender: 1) either a copy of the Certificate of Contractor Registration issued by the Construction Industry Development Board or a computer printout confirming the registration of the tenderer. ***The tenderer has the responsibility to ensure that his/her details are reflected correctly on the CIDB Website, which may be used for confirmation.*** 2) Copies of company registration documents. 3) An original valid Tax Clearance issued by the South African Revenue Services. 4) Copies of ID documents of Shareholders/Members/Directors of the business enterprises. 5) The BBBEE compliance certificate issued by an accredited Institution. 6) Skills Development Levy Certificate

	7) Unemployment Insurance Fund Certificates 8) Workman's Compensation Registration Certificate (or Proof of Payment of contributions in terms of the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993
F.3.4	The time and location for opening of the tender offers are: Time: **12h00** Date: *31 MARCH 2023* Location: *96 Marine Drive, Olso Beach Phase 2 Building, Ugu District Municipality*

F.3.11	**Method 4: Quality, Financial Offer and Preference** This method can be used for more complex project that would require specialist services. Assessment of functionality or quality must be done separately from the 80/20 and 90/10 principles There must be two stages in the evaluation of such bids: • The first stage must be the assessment of functionality through the use of any rating criteria determined by the concerned institution, wherein the bidders with sufficient experience and technical capacity will be selected to move to the stage. The determination of elimination threshold will depend on the nature of service required and criteria preferred • The second stage must be the assessment and evaluation of bidders in terms of 90/10 or 80/20 , where the 90 or 80 points shall be used for pricing scores only, and the 10 or 20 used for BEE status only as envisaged by the act When an institution invites a bid that will also be evaluated on the basis of functionality as a criterion, the AO/ AA must clearly specify the following aspects in the bid documents: • ***Evaluation criteria for measuring functionality*** The evaluation criteria may include criteria such as the contractor's relevant experience for the assignment, the quality of the methodology; the qualifications of key personnel; transfer of knowledge etc. • ***Weight of each criterion*** The weight that is allocated to each criterion should not be generic but should be determined separately for each bid on a case-by-case basis. • ***Applicable value*** The applicable values that will be utilised when scoring each criterion should be objective. As a guide, values ranging from 1 being poor, 2 being average, 3 being good, 4 being very good and 5 being excellent, any be utilised. • ***Minimum qualifying score for functionality*** The minimum qualifying score that must be obtained for functionality in order for a bid to be considered further should not be generic. It should be determined separately for each bid on a case-by-case basis. The minimum qualifying score must not be prescribed so low that it may jeopardise the quality of the service required nor so high that it may be restrictive to the extent that it jeopardizes the fairness of the SCM system.

F3.11.3	(a)	Quality criteria In order to be considered for a contract in terms of this tender, tenderers must achieve the minimum score for quality as stated below. The description of the quality criteria and the maximum possible score for each is shown in the table below. The score achieved for quality will be the sum of the scores achieved for the individual criteria.

The procedure for the evaluation of responsive tenders is **Method 4** with the 80/20 Preference Point System. Tenderers will be scored for quality first and only those tenders that meet the specified minimum total score for quality will be considered further. These tenders will then be evaluated on the basis of the 80/20 Preference Points System.

Method 4: Financial Offer, Quality and Preferences

(a) Quality
The score for quality is to be calculated using the following formula:

$$W_q = W_2 x S_o / M_s$$

where:
W_2 = is the percentage score given to quality and equals **100**
S_o = is the score for quality allocated to the submission under consideration
M_s = is the maximum possible score for quality in respect to the submission, which equals **100**

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

Description
Experience of Bidder with respect to similar projects
Experience of Key Personnel (Contracts Manager)
Experience of Key Personnel (Construction Manager/ Site Agent)
Experience of Key Personnel (Foreman)
Experience of Key Personnel (Artisan)
Construction Methodology and Preliminary Programme

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

Key Aspect Criterion	Basis for points allocation	Score	Verification Method
Experience of Bidder	Six completed water projects with similar scope of works and value (i.e Water pipeline construction, replacement) each of at least R0.9M	Very Good	A set of certified copies of Letter of Appointment and Completion Certificate per project (From a government entity)
	Five completed water projects with similar scope of works and value (i.e Water pipeline construction, replacement) each of at least R0.9M	Good	
	Four completed water projects with similar scope of works and value (i.e Water pipeline	Fair	

	construction, replacement) each of at least R0.9M		
	Three completed water projects with similar scope of works and value (i.e Water pipeline construction, replacement) each of at least R0.9M	Poor	
	One to Two completed water projects with similar scope of works and value (i.e Water pipeline construction, replacement) each of at least R0.9M	Very Poor	
	No response/no similar water project completed.	Dismal	
Experience of Key Personnel (Contracts Manager)	Five (5) or more years' experience of the Contracts Manager in projects with similar scope of works with a minimum qualification of a BSC Civil Eng /Btech Degree in Civil Engineering and registered as a Professional Engineer / Technologist with the Engineering Council of South Africa (ECSA)	Very Good	Curriculum Vitae to be attached with traceable references
	Five (5) or more years' experience of the Contracts Manager in projects with similar scope of works with a minimum qualification of a BSC Civil Eng /Btech Degree in Civil Engineering and not registered as a Professional Engineer / Technologist with the Engineering Council of South Africa (ECSA)	Good	
	Less than five (5) years' experience of the Contracts Manager in projects with similar scope of works with a minimum qualification of a BSC Civil Eng /Btech Degree in Civil Engineering and registered as a Professional Engineer / Technologist with the Engineering Council of South Africa (ECSA)	Fair	
	Less than five (5) years' experience of the Contracts Manager in projects with similar scope of works with a minimum qualification of a BSC Civil Eng /Btech Degree in Civil Engineering and not registered	Poor	

	as a Professional Engineer / Technologist with the Engineering Council of South Africa (ECSA)		
	Contracts Manager proposed does not fit the above requirements (No BSC Civil Eng /Btech Degree, less than five (5) years' experience and not registered as a Professional Engineer / Technologist with the Engineering Council of South Africa)	Very Poor	
Experience of Key Personnel (Construction Manager/Site Agent)	Four (4) or more years' experience of the Construction Manager/Site Agent in projects with similar scope of works with a minimum qualification of a NQF 6/ National Diploma in Civil Engineering	Very Good	Curriculum Vitae and Certified Copies of Qualification certificates
	Three (3) or more years' experience of the Construction Manager/Site Agent in projects with similar scope of works with a minimum qualification of a NQF 6 National Diploma in Civil Engineering	Good	
	Construction Manager/Site Agent proposed does not fit the above requirements (No NQF 6 National Diploma in Civil Engineering and less than three (3) years' experience)	Poor	
Experience of Key Personnel (Foreman)	Six (6) or more years' experience of the Foreman in projects with similar scope of works with a relevant trade test certificate	Very Good	Curriculum Vitae to be attached with traceable references
	Less than six (6) years' experience of the Foreman in projects with similar scope of works with a relevant trade test certificate	Good	
	Foreman proposed does not fit the above requirements (No relevant trade test certificate and less than six (6) years' experience)	Poor	
Experience of Key Personnel (Artisan)	Three (3) or more years' experience of the Artisan in projects with similar scope of works with a relevant trade test certificate	Very Good	

	Less than three (3) years' experience of the Artisan in projects with similar scope of works with a relevant trade test certificate	Good	Curriculum Vitae to be attached with traceable references.
	Artisan proposed does not fit the above requirements (No relevant trade test certificate and less than three (3) years' experience)	Poor	
Construction Methodology and Preliminary Programme Construction Methodology (relevant to the tendered project. The methodology and preliminary programme must include the following sub-headings: Approach Method, Time Frames, Activities (in construction sequence), Construction Administration, Quality Management, Health and Safety	Construction Methodology met all the requirements. The methodology is precise and specific to this project and preliminary programme has correct linkages to relevant activities	Very Good	Construction Methodology And Preliminary Programme
	Construction Methodology and preliminary sub tasks are in line with the scope of works.	Good	
	Construction Methodology and preliminary programme are generic for similar works	Fair	
	Construction Methodology and preliminary programme are inadequate and unrealistic and/or no submission.	Very Bad	

NB: Tenderers are required to submit supporting documents to score full points

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

	The minimum score for quality is **60 points (60%)**. Tenderers that fail to achieve the minimum score for quality will be rejected. (a) Financial Offer The financial offer will be scored in terms of **Formula 2, Option 1 of Table F.1** in Conditions of Tender F.3.11.6.1:

	Where W_1 = 90 points where the financial value, inclusive of VAT, of all responsive tenders received have a value above R 1 000 000.00 (b) <u>Preference points</u> Price and Preference and quality will be used for evaluation. The 80/20 or 90/10 preferential point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system. For Specific Goals (See below table), in terms of revised Preferential Procurement Regulation in effect from 16 January 2023 Gazette Notice No. 47452 dated 04 November 2022. It is solely the responsibility of vendors, who want to make use of the preferences available under this policy to familiarise themselves with its contents, and to comply with its conditions, to be able to make a claim for preference. **NB!! VALID BBBEE CERTIFICATES TO BE SUBMITTED WITH THE TENDER IF YOU WISH TO CLAIM PREFERENCE POINTS IN TERMS OF THE ABOVEMENTIONED REGULATIONS.**
F.3.13.1	**Tender offers will only be accepted if:** a) The tenderer must include an original valid Tax Clearance Certificate with his tender. b) The tenderer is registered with the Construction Industry Development Board in an appropriate contractor grading designation, by tender closing date. c) The tenderer is not in arrears for more than 3 months with the municipal rates and taxes and municipal services charges; d) The tenderer or any of its directors is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited form doing business with the public sector; e) The tender has not i) abused the Employer's Supply Chain Management System; or ii) failed to perform on any previous contract and has been given a written notice to this effect; and f) The tenderer has completed the Compulsory Enterprise Questionnaires and there are no conflicts of interest which may impact on the tenderer's ability to perform the contract in the best interest of the employer or potentially compromise the tender process. g) The tenderer has fully completed and signed the form of offer. h) The tenderer has completed the schedule of quantities in full. Items against which no price is entered are to be considered as incomplete and will invalidate the tender. Items against which **N/A, left blank or –** is entered are to be considered as incomplete and will also invalidate the tender. Items against which NIL or zero (0) is entered are to be considered to be fully priced and the tenderer will provide the items in question as specified at **zero (0) or NIL price.** i) The tenderer or competent representative has attended the compulsory site meeting or site inspection. j) The tenderers declaration of compliance with the occupational Health and Safety Act No 85 of 1993 and the Construction Regulations 2003 is included with his tender.

	k) A tender who submitted a tender as a Joint Venture has included an acceptable Joint Venture agreement with his tender. l) The tenderer acknowledged receipt of all addenda and alterations and amendments according to addenda have been considered.
F.3.18	The number of paper copies of the signed contract to be provided by the employer is one original plus one original duplicate.

APPENDIX: STANDARD CONDITIONS OF TENDER

(These Standard Conditions of Tender have been reproduced, without any changes, from Appendix A of the CIDB Standardized Construction Procurement Documentation for Engineering Construction Works (May 2010).

F.1 General

F.1.1 Actions

F1.1.1.

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

F1.1.2.

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

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

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

F.1.1.3

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

F.1.2 Tender Documents

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

F.1.3 Interpretation

F.1.3.1

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

F.1.3.2

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

F.1.3.3

For the purposes of these conditions for the calling for expressions of interest, the following definitions apply:

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

- **i)** someone in a position of trust has competing professional or personal interest which make it difficult to fulfil his or her duties impartially;
- **ii)** an individual or organisation is in a position to exploit a professional or official capacity in some way for their personal or corporate benefit; or
- **iii)** incompatibility or contradictory interests exist between an employee and the organisation which employs that employee.

(b) **comparative offer** means the tenderer's financial offer after the factors of non-firm prices, all unconditional discounts and any other tendered parameters that will affect the value of the financial offer have been taken into consideration

(c) **corrupt practice** means the offering, giving, receiving or soliciting of anything of value to influence the action of the employer or his staff or agents in the tender process; and

(d) **fraudulent practice** means the misrepresentation of the facts in order to influence the tender process or the award of a contract arising from a tender offer to the detriment of the employer, including collusive practices intended to establish prices at artificial levels

(e) **Organisation** means a company, firm, enterprise, association or other legal entity, whether incorporated or not, or a public body

(f) **Quality (functionality)** means the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs.

F.1.4 Communication and employer's agent

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

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

F.1.5.1

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

F.1.5.2

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

F.1.6 Procurement Procedures

F.1.6.1 General

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

F.1.6.2 Competitive Negotiation Procedure

F.1.6.2.1

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

F.1.6.2.2

All responsive tenderers, or not less than three responsive tenderers that are highest ranked in terms of the evaluation method and evaluation criteria stated in the data, shall be invited in each round to enter the competitive negotiations, based on the principle of equal treatment and keeping confidential the proposed solutions and associated information. Notwithstanding the provisions of F.2.17, the Employer may request that tenders be clarified, specified and fine-tuned in order to improve a tenderer's competitive position provided that such clarification, specification, fine-tuning and additional information does not alter any fundamental aspects of the offers or impose substantial new requirements which restrict or distort competition or have a discriminatory effect.

F.1.6.2.3

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

F.1.6.2.4

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

F.1.6.3 Proposal Procedure using two stage system

F.1.6.3.1 Option 1

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

F.1.6.3.2 Option 2

F.1.6.3.2.1

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

F.1.6.3.2.2.

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

F.2 Tenderer's obligations

F.2.1 Eligibility

F.2.1.1

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

F.2.1.2

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

F.2.2 Cost of tendering

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

F.2.3 Check documents

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

F.2.4 Confidentiality and copyright of documents

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

F.2.5 Reference documents

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

F.2.6 Acknowledge addenda

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

F.2.7 Site visit and clarification meeting

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

F.2.8 Seek clarification

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

F.2.9 Insurance

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

F.2.10 Pricing the tender offer

F.2.10.1

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

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

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

F.2.12 Alternative tender offers

F.2.12.1

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

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

F.2.13 Submitting a tender offer

F.2.13.1

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

F.2.13.2

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

F.2.13.3

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

F.2.13.4

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

F.2.13.5

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

F.2.13.6

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

F.2.13.7

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

F.2.13.8

Accept that the employer shall not assume any responsibility for the misplacement or premature opening of the tender offer if the outer package is not sealed and marked as stated.

F.2.13.9

Accept that tender offers submitted by facsimile or email will be rejected by the Employer, unless stated otherwise in the tender data.

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

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

F.2.15 Closing time

F.2.15.1

Ensure that the employer receives the tender offer at the address specified in the tender data not later than the closing time stated in the tender data. Proof of posting shall not be accepted as proof of delivery. The employer shall not accept tender offers submitted by telegraph, telex, facsimile or e-mail, unless stated otherwise in the tender data.

F.2.15.2

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

F.2.16 Tender offer validity

F.2.16.1

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

F.2.16.2

If requested by the employer, consider extending the validity period stated in the tender data for an agreed additional period.

F.2.16.3

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

F.2.16.4

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

F.2.17 Clarification of tender offer after submission

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

F.2.18 Provide other material

F.2.18.1

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

F.2.18.2

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

F.2.19 Inspections, tests and analysis

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

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

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

F.2.21 Check final draft

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

F.2.22 Return of other tender documents

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

F.2.23 Certificates

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

F.3 The employer's undertakings

F.3.1 Respond to requests from the tenderer

F.3.1.1

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

F.3.1.2

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

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

F.3.2 Issue Addenda

If necessary, issue addenda that may amend or amplify the tender documents to each tenderer during the period from the date of the Tender Notice until seven days before the tender closing time stated in the Tender

Data. If, as a result a tenderer applies for an extension to the closing time stated in the Tender Data, the Employer may grant such extension and, will then notify it to all tenderers who drew documents.

F.3.3 Return late tender offers

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

F.3.4 Opening of tender submissions

F.3.4.1

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

F.3.4.2

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

F.3.4.3

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

F.3.5 Two-envelope system

F.3.5.1

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

F.3.5.2

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

F.3.6 Non-disclosure

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

F.3.7 Grounds for rejection and disqualification

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

F.3.8 Test for responsiveness

F.3.8.1

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

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

F.3.8.2

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

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

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

F.3.9 Arithmetical errors

F.3.9.1

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

F.3.9.2

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

a) The gross misplacement of the decimal point in the unit rate,
b) Omissions made in completing the pricing schedule or bills of quantities or
c) Arithmetic errors in

    - Line item totals resulting from the product of unit rate and a quantity in bills of quantities or schedule of prices; or
    - The summation of the prices.

F3.9.2

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

F.3.9.3

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

d) If bills of quantities or pricing schedules apply and there is an error in the line item total resulting from the product of the unit rate and the quantity, the line item total as quoted shall govern, and the unit

rate will be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line item total as quoted shall govern and the unit rate shall be corrected.

e) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall govern and the tenderer will be asked to revise selected item prices (and their rates if a bill of quantities applies) to achieve the tendered total of the prices.

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

F.3.10 Clarification of a tender offer

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

F.3.11 Evaluation of tender offers

F3.11.1 General

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

F.3.11.2 Method 1: Financial offer

In the case of a financial offer:

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

F.3.11.3 Methods 2: Financial offer and preference

In the case of a financial offer and preferences:

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

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

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

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

tenderer with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated.

F.3.11.4 Method 3: Financial offer and quality

In the case of a financial offer and quality:

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

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

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

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

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

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

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

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

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

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

F.3.11.6 Decimal Places

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

F.3.11.7 Scoring Financial Offers

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

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

N_{FO} = the number of tender evaluation points awarded for the financial offer.

W_1 = the maximum possible number of tender evaluation points awarded for the financial offer as stated in the Tender Data.

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

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

Where:

Pm = the comparative offer of the most favourable tender offer.

P = the comparative offer of tender offer under consideration.

F.3.11.8 Scoring Preferences

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

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

F.3.11.9 Scoring quality (functionality)

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

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

$$N_o = W_2 x S_o / M_s$$

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

F.3.12 Insurance provided by the employer

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

F.3.13 Acceptance of tender offer

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

a) Is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement
b) Can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial

resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel to perform the contract.

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

F.3.13.2

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

F.3.14 Notice to unsuccessful tenderers

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

F.3.15. Prepare contract documents

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

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

F.3.16 Issue final contract

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

F.3.17 Complete adjudicator's contract

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

F.3.18 Provide copies of the contracts

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

F.3.19 Provide written reasons for actions taken

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

PART T2: RETURNABLE DOCUMENTS

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T2.1 LIST OF RETURNABLE DOCUMENTS

The Tender Document must be submitted as a whole. All forms must be properly completed as required, and the document shall not be taken apart or altered in any way whatsoever.

The list of returnable documents comprises the following: tick ☐

1. LIST OF COMPULSORY RETURNABLE SCHEDULES AND OTHER DOCUMENTS

- Details of Registration with CIDB ..... ☐
- Certificate of Attendance at Site Meeting ..... ☐
- Certificate of Authority for Signatory and Registration ..... ☐
- Municipal Bid Document (MBD) 1 ..... ☐
- Registration Certificate / Agreement / ID Document ..... ☐
- Record of Addenda to Tender Documents ..... ☐
- Amendments, Qualifications and Alternatives ..... ☐
- Letter from the bank confirming existence of the company account ..... ☐
- VAT Registration Certificate ..... ☐
- Tax Clearance Certificate ..... ☐
- Workmen's Compensation Registration Certificate ..... ☐
- Compulsory Enterprise Questionnaire ..... ☐
- Bidder's Disclosure Form ..... ☐
- Contract Form - Rendering of Services ..... ☐
- Health and Safety Declaration ..... ☐
- Declaration of Payment of Municipal Services ..... ☐

2. LIST OF RETURNABLE SCHEDULES AND OTHER DOCUMENTS REQUIRED FOR TENDER EVALUATION PURPOSES

- Tenderer's Financial Standing ..... ☐
- Schedule of Similar Work Undertaken ..... ☐
- Preference Schedules and Affidavit ..... ☐
- Preliminary Programme ..... ☐

- Schedule of Plant and Equipment ..... ☐
- Proposed Subcontractors ..... ☐
- Key Personnel..... ☐

Note: Tenderer to tick off each box to ensure that the necessary schedules and documents have been filled in and are included into the tender document.

T2.2 RETURNABLE SCHEDULES AND DOCUMENTS

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T2.2.1 COMPULSORY RETURNABLE SCHEDULES AND DOCUMENTS

A. DETAILS OF REGISTRATION WITH CIDB

PRIMARY CONTRACTOR

Contractor's Name:
……..……

Contractor's CIDB Registration Number:
……..……

Contractor's CIDB Registration Classification:
……..……

JOINT VENTURE PARTNER 1 (Where Applicable)

Contractor's Name:
……..……

Contractor's CIDB Registration Number:
……..……

Contractor's CIDB Registration Classification:
……..……

JOINT VENTURE PARTNER 2 (Where Applicable)

Contractor's Name:
……..……

Contractor's CIDB Registration Number:
……..……

Contractor's CIDB Registration Classification:
……..……

Note: This information will be checked on the CIDB Website

B. CERTIFICATE OF ATTENDANCE AT SITE MEETING

This is to certify that *(tenderer)*…… of *(address)*

.....……was represented by the

person(s) named below at the compulsory meeting held for all tenderers at *(location)*

.....……....

..... on *(date)*.....

starting at *(time)* .....

I / We acknowledge that the purpose of the meeting was to acquaint myself / ourselves with the site of the works and / or matters incidental to doing the work specified in the tender documents in order for me / us to take account of everything necessary when compiling our rates and prices included in the tender.

Particulars of person(s) attending the meeting:

Name: .. .. Signature:

Capacity: .....

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

Capacity: .....

Attendance of the above person(s) at the meeting is confirmed by the Employer's representative, namely:

Name: ..... Signature: ……

Capacity:..... Date and Time:.....

C. CERTIFICATE OF AUTHORITY FOR SIGNATORY

Indicate the status of the tenderer by ticking the appropriate box hereunder. The tenderer must complete the certificate set out below for the relevant category, **and attach their Registration Certificates for Companies, Close Corporations and Partnerships, or Agreements and Powers of Attorney for Joint Ventures, or ID documents to the page provided at the end of this form.**

(I) COMPANY	(II) CLOSE CORPORATION	(III) PARTNERSHIP	(IV) JOINT VENTURE	(V) SOLE PROPRIETOR

(I) CERTIFICATE FOR COMPANY

I, ...chairperson of the Board of Directors of …….

hereby confirm that any contract resulting from it, on behalf of the company.

Chairman: .....

As Witnesses: 1. . .....

2. .....

Date: .....

(II) CERTIFICATE FOR CLOSE CORPORATION

We, the undersigned, being the key members in the business trading as……
……hereby authorise Mr/Ms ……..,

acting in the capacity of ..... , to sign

all documents in connection with the tender for Contract Nº Ugu 07-1628-2023 and any contract resulting from it, on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

Note : This certificate is to be completed and signed by all of the key members upon whom rests the direction of the affairs of the Close Corporation as a whole.

(III). CERTIFICATE FOR PARTNERSHIP

We, the undersigned, being the key partners in the business trading as, ……

..... hereby authorize Mr/Ms ……

acting in the capacity of …… ..... , to sign all

documents in connection with the tender for Contract N° UGU-07-1628-2023 and any contract resulting from it, on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

Note : This certificate is to be completed and signed by all of the key partners upon whom rests the direction of the affairs of the Partnership as a whole.

(IV) CERTIFICATE FOR JOINT VENTURE

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorize Mr/Ms,

authorized signatory of the company, ...
acting in the capacity of lead partner,

to sign all documents in connection with the tender offer for Contract N° UGU-07-1628-2023 and any contract resulting from it, on our behalf.

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

NAME OF FIRM	ADDRESS	AUTHORISING SIGNATURE, NAME AND CAPACITY
Lead partner		

Note : This certificate is to be completed and signed by all of the key partners upon whom rests the direction of the affairs of the Partnership as a whole

(V) CERTIFICATE FOR SOLE PROPRIETOR

I, ..., hereby confirm that I am the sole owner of the business trading as .....

Signature of Sole owner: .....

As Witnesses:

1. .....

2. .....

Date: .....

D. MUNICIPAL BID DOCUMENT (MBD) 1

MBD 1

PART A
INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF UGU DISTRICT MUNICIPALITY					
BID NUMBER:	UGU-07-1628-2023	CLOSING DATE:	14 APRIL 2023	CLOSING TIME:	12H00
DESCRIPTION	**REPLACEMENT & REFURBISHMENT OF PLANNED REPLACEMENT OF BULK AND RETICULATION PIPELINES AND MISCELLANEOUS WORKS**				

BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT *(STREET ADDRESS*

UGU DISTRICT MUNICIPALITY
93 MARINE DRIVE
PHASE 2 BUILDING
OSLO BEACH

SUPPLIER INFORMATION							
NAME OF BIDDER							
POSTAL ADDRESS							
STREET ADDRESS							
TELEPHONE NUMBER	CODE			NUMBER			
CELLPHONE NUMBER							
FACSIMILE NUMBER	CODE			NUMBER			
E-MAIL ADDRESS							
VAT REGISTRATION NUMBER							
TAX COMPLIANCE STATUS	TCS PIN:		OR	CSD No:			
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE [TICK APPLICABLE BOX]	☐ Yes ☐ No		B-BBEE STATUS LEVEL SWORN AFFIDAVIT	☐ Yes ☐ No			
ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS ISERVICES IWORKS OFFERED?	☐Yes ☐No [IF YES ENCLOSE PROOF]		ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS ISERVICES IWORKS OFFERED?	Yes No [IF YES, ANSWER PART B:3]			
TOTAL NUMBER OF ITEMS OFFERED			TOTAL BID PRICE	R			
SIGNATURE OF BIDDER	.....		DATE				
CAPACITY UNDER WHICH THIS BID IS SIGNED							

BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:		TECHNICAL INFORMATION MAY BE DIRECTED TO:	
DEPARTMENT	SCM Unit	CONTACT PERSON	MR R Mlambo
CONTACT PERSON	Ms N Mkhize	TELEPHONE NUMBER	039-688 3441
TELEPHONE NUMBER	039-688 5743	FACSIMILE NUMBER	N/A
FACSIMILE NUMBER	N/A	E-MAIL ADDRESS	Rowan.mlambo@ugu.gov.za
E-MAIL ADDRESS	Ntokozo.Mkhize@ugu.gov.za		

PART B

TERMS AND CONDITIONS FOR BIDDING

1.	BID SUBMISSION:
1.1.	BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.
1.2.	ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED–(NOT TO BE RE-TYPED)
1.3.	THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.
2.	TAX COMPLIANCE REQUIREMENTS
2.1	BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS AND ARE REQUIRED TO SUBMIT VALID TAX CLEARANCE CERTIFICATE.
2.2	IN BIDS WHERE CONSORTIA I JOINT VENTURES I SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.

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

SIGNATURE OF BIDDER: ……

CAPACITY UNDER WHICH THIS BID IS SIGNED: …… ……

DATE: ……..

Please attach copies of the following documents. Failure to provide the following duly completed and up to date documents and certified where applicable will lead to automatic disqualification.

- **Company registration documents.**
- **Tax Reference Number and Pin**
- **All Declarations Forms**
- **ID Document (for sole proprietors)**
- **Joint Venture Agreement (where applicable)**
- **Proof of payment for Municipal Services**
- **Central Supplier Database Registration**
- **Form of Offer**
- **Pricing Schedule**

E. REGISTRATION CERTIFICATE / AGREEMENT / ID DOCUMENT

[Important note to Tenderer: Registration Certificates for Companies, Close Corporations and Partnerships, or Agreements and Powers of Attorney for Joint Ventures, certified copies of Identification documents as referred to in T2.1, must be inserted here]

Companies listed on the Johannesburg Stock Exchange to submit their latest audited annual financial statements in lieu of the above documents

F. RECORD OF ADDENDA TO TENDER DOCUMENTS

I / We confirm that the following communications amending the tender documents that I / we received from the employer or his agent before the closing date for submission of this tender offer have been taken into account in this tender offer.

ADDENDUM No	DATE	TITLE OR DETAILS

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

G. AMENDMENTS, QUALIFICATIONS AND ALTERNATIVES

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

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

(a) AMENDMENTS

PAGE, CLAUSE OR ITEM N°	PROPOSED AMENDMENT

[Notes: 1. Proposals for amendments to the General and Special Conditions of Contract will not be considered, and may invalidate the offer;

2. The Tenderer must give full details of all the financial implications of the amendments and qualifications in a covering letter attached to his tender.]

(b) ALTERNATIVES

PROPOSED ALTERNATIVE	DESCRIPTION OF ALTERNATIVE

[Notes: 1. Individual alternative items that do not justify an alternative tender, and an alternative offer for time for completion should be listed here.

2. In the case of a major alternative to any part of the work, a separate Bill of Quantities, programme, etc, and a detailed statement setting out the salient features of the proposed alternatives must accompany the tender.

3. Alternative tenders involving technical modifications to the design of the works and methods of construction shall be treated separately from the main tender offer.]

(c) DISCOUNTS

ITEM ON WHICH DISCOUNT IS OFFERED	DESCRIPTION OF DISCOUNT OFFERED

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

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

H. LETTER FROM THE BANK CONFIRMING THE COMPANY BANK RATING

[The Tenderer shall insert here a copy of a letter from their bank confirming their bank rating].

I. VAT REGISTRATION CERTIFICATE

[Note: If company is a VAT vendor, a copy of the VAT registration certificate must be inserted here.]

J. TAX CLEARANCE CERTIFICATE

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

1 In order to meet this requirement bidders are required to complete in full the attached form TCC 001 "Application for a Tax Clearance Certificate" and submit it to any SARS branch office nationally. The Tax Clearance Certificate Requirements are also applicable to foreign bidders / individuals who wish to submit bids.

2 SARS will then furnish the bidder with a Tax Clearance Certificate that will be valid for a period of 1 (one) year from the date of approval.

3 **The original Tax Clearance Certificate must be submitted together with the bid. Failure to submit the original and valid Tax Clearance Certificate will result in the invalidation of the bid. Certified copies of the Tax Clearance Certificate will not be accepted.**

4 In bids where Consortia / Joint Ventures / Sub-contractors are involved, each party must submit a separate Tax Clearance Certificate.

5 Copies of the TCC 001 "Application for a Tax Clearance Certificate" form are available from any SARS branch office nationally or on the website www.sars.gov.za.

6 Applications for the Tax Clearance Certificates may also be made via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za.

APPLICATION FORM FOR TAX CLEARANCE CERTIFICATE*]*

(IN RESPECT OF TENDER) .... [EXAMPLE]

1. NAME OF TAXPAYER/TENDERER: ……..……..

2. TRADE NAME: …….....……

3. IDENTIFICATION No. (if applicable) :

4. COMPANY/CLOSE CORPORATION REG No. :

5. INCOME TAX REFERENCE No. :

6. VAT REGISTRATION No. :

7. PAYE EMPLOYERS REG No. (if applicable) :

NB : Copy of the tender request must be attached to this application.

CONTACT PERSON REQUIRING TAX CLEARANCE CERTIFICATE:

SIGNATURE : ....

NAME : ....

TELEPHONE NUMBER : CODE: ……..... NUMBER: .....

ADDRESS : ....

.....

DATE : 20 ...../...../.....

Please note that the Commissioner for the South African Revenue Service (SARS) will not exercise his discretionary powers in favour of any person with regard to any interest, penalties and/or additional tax leviable due to the late or underpayment of taxes, duties or levies or the rendition of returns by any person.

NAME OF PERSON RESPONSIBLE FOR CONTRACT :.....

(ST 5.1) March 1999

NB: This example of the application form for a tax clearance certificate is included for the convenience of tenderers. The application form has to be submitted to SARS to enable them to issue the required Tax Clearance Certificate. The original and valid Tax Clearance Certificate obtained from the SARS must be submitted with the tender (to be attached to the next page).

TAX CLEARANCE CERTIFICATE

[Original Tax Clearance Certificate obtained from SARS to be inserted here].

K. WORKMEN'S COMPENSATION REGISTRATION CERTIFICATE

[The tenderer's Workmen's Compensation Registration Certificate / COID Registration or proof of payment of contributions to be inserted here].

L. COMPULSORY ENTERPRISE QUESTIONNAIRE

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

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

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

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

Section 4: Particulars of sole proprietors and partners in partnerships

Name*	Identity number*	Personal income tax number*

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

Section 5: Particulars of companies and close corporations

Company registration number:.....

Close corporation number: .....

Tax reference number: .....

Section 6: Record in the service of the state

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

a member of any municipal council		an employee of any provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 1 of 1999)	
a member of any provincial legislature			
a member of the National Assembly or the National Council of Province			
a member of the board of directors of any municipal entity		a member of an accounting authority of any national or provincial public entity	
an official of any municipality or municipal entity		an employee of Parliament or a provincial legislature	

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

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

*insert separate page if necessary

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

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

a member of any municipal council		an employee of any provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 1 of 1999)	
a member of any provincial legislature			
a member of the National Assembly or the National Council of Province			
a member of the board of directors of any municipal entity		a member of an accounting authority of any national or provincial public entity	
an official of any municipality or municipal entity		an employee of Parliament or a provincial legislature	

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

Name of spouse, child or parent	Name of institution, public office, board or organ of state and position held	Status of service (tick appropriate column)	
		Current	Within last 12 months

*insert separate page if necessary

The undersigned, who warrants that he/she is duly authorised to do so on behalf of the enterprise:

i) authorizes the Employer to obtain a tax clearance certificate from the South African Revenue Services that my/our tax matters are in order;

ii) confirms that neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;

iii) confirms that no partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise, has within the last five years been convicted of fraud or corruption;

iv) confirms that I/we are not associated, linked or involved with any other tendering entities submitting tender offers and have no relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; and

v) confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

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

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

Enterprise name:.....

M. BIDDER'S DISCLOSURE FORM

1 BIDDER'S DISCLOSURE

1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest1 in the enterprise, employed by the state? **YES/NO**

2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

Full Name	**Identity Number**	**Name of State institution**

2.2 Do you, or any person connected with the bidder, have a relationship

1 the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.

with any person who is employed by the procuring institution? **YES/NO**

2.2.1 If so, furnish particulars:
……
……

2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract? **YES/NO**

2.3.1 If so, furnish particulars:
……
……

3 DECLARATION

I, the undersigned, (name) ..... in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:

3.1 I have read and I understand the contents of this disclosure;

3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;

3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium2 will not be construed as collusive bidding.

3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.

3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring

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

institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.

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

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

…… ……

Signature Date

…… ……

Position Name of bidder

N. CONTRACT FORM - RENDERING OF SERVICES

CONTRACT FORM - RENDERING OF SERVICES

THIS FORM MUST BE FILLED IN DUPLICATE BY BOTH THE SERVICE PROVIDER (PART 1) AND THE PURCHASER (PART 2). BOTH FORMS MUST BE SIGNED IN THE ORIGINAL SO THAT THE SERVICE PROVIDER AND THE PURCHASER WOULD BE IN POSSESSION OF ORIGINALLY SIGNED CONTRACTS FOR THEIR RESPECTIVE RECORDS.

PART 1 (TO BE FILLED IN BY THE SERVICE PROVIDER)

1. I hereby undertake to render services described in the attached bidding documents to (name of the institution)…… in accordance with the requirements and task directives / proposals specifications stipulated in Bid Number…….. at the price/s quoted. My offer/s remain binding upon me and open for acceptance by the Purchaser during the validity period indicated and calculated from the closing date of the bid.

2. The following documents shall be deemed to form and be read and construed as part of this agreement:

   (i) Bidding documents, *viz*
   - Invitation to bid;
   - Proof of tax compliance status;
   - Pricing schedule(s);
   - Filled in task directive/proposal;
   - Preference claim form for Preferential Procurement in terms of the Preferential Procurement Regulations;
   - Declaration of interest;
   - Declaration of Bidder's past SCM practices;
   - Certificate of Independent Bid Determination;
   - Special Conditions of Contract;

   (ii) General Conditions of Contract; and

   (iii) Other (specify)

3. I confirm that I have satisfied myself as to the correctness and validity of my bid; that the price(s) and rate(s) quoted cover all the services specified in the bidding documents; that the price(s) and rate(s) cover all my obligations and I accept that any mistakes regarding price(s) and rate(s) and calculations will be at my own risk.

4. I accept full responsibility for the proper execution and fulfilment of all obligations and conditions devolving on me under this agreement as the principal liable for the due fulfillment of this contract.

5. I declare that I have no participation in any collusive practices with any bidder or any other person regarding this or any other bid.

6. I confirm that I am duly authorised to sign this contract.

NAME (PRINT) ……

CAPACITY ……

SIGNATURE ……

NAME OF FIRM ……

DATE ……

WITNESSES

1 ……

2 ……

DATE: ……..

MBD 7.2

CONTRACT FORM - RENDERING OF SERVICES

PART 2 (TO BE FILLED IN BY THE PURCHASER)

1. I…… in my capacity as……..…… accept your bid under reference number ……dated……for the rendering of services indicated hereunder and/or further specified in the annexure(s).

2. An official order indicating service delivery instructions is forthcoming.

3. I undertake to make payment for the services rendered in accordance with the terms and conditions of the contract, within 30 (thirty) days after receipt of an invoice.

DESCRIPTION OF SERVICE	PRICE (ALL APPLICABLE TAXES INCLUDED)	COMPLETION DATE	TOTAL PREFERENCE POINTS CLAIMED	POINTS CLAIMED FOR EACH SPECIFIC GOAL

4. I confirm that I am duly authorised to sign this contract.

SIGNED AT …… ON ……..

NAME (PRINT) ……

SIGNATURE ……

OFFICIAL STAMP

WITNESSES

1 ……

2 ……

DATE: ……..

O. HEALTH AND SAFETY DECLARATION

In terms of Clause 4(4) of the OHSA 1993 Construction Regulations 2014 (referred to as "the Regulations" hereafter), a Contractor may only be appointed to perform construction work if the Employer is satisfied that the Contractor has the necessary competencies and resources to carry out the work safely in accordance with the Occupational Health and Safety Act No 85 of 1993 and the OHSA 1993 Construction Regulations 2014.

To that effect a person duly authorised by the tenderer must complete and sign the declaration hereafter in detail.

Declaration by Tenderer

1. I the undersigned hereby declare and confirm that I am fully conversant with the Occupational Health and Safety Act No 85 of 1993 (as amended by the Occupational Health and Safety Amendment Act No 181 of 1993), and the OHSA 1993 Construction Regulations 2014.
2. I hereby declare that my company / enterprise has the competence and the necessary resources to safely carry out the construction work under this contract in compliance with the Construction Regulations and the Employer's Health and Safety Specifications.
3. I hereby undertake, if my tender is accepted, to provide a sufficiently documented Health and Safety Plan in accordance with Regulation 5(1) of the Construction Regulations, approved by the Employer or his representative, before I will be allowed to commence with construction work under the contract. I hereby agree that my company/enterprise will not have a claim for compensation for delay or extension of time because of my failure to obtain the necessary approval for the said safety plan.
4. I confirm that copies of my company's approved Health and Safety Plan, the Employer's Safety Specifications as well as the OHSA 1993 Construction Regulations 2014 will be provided on site and will at all times be available for inspection by the Contractor's personnel, the Employer's personnel, the Engineer, visitors, and officials and inspectors of the Department of Labour.
5. I hereby confirm that adequate provision has been made in my tendered rates and prices in the bill of quantities to cover the cost of all resources, actions, training and all health and safety measures envisaged in the OHSA 1993 Construction Regulations 2014, including the cost for specific items that may be scheduled in the bill of quantities.
6. I hereby confirm that I will be liable for any penalties that may be applied by the Employer in terms of the said Regulations for failure on my part to comply with the provisions of the Act and the Regulations as set out in Regulation 30 of the Regulations.
7. I agree that my failure to complete and execute this declaration to the satisfaction of the Employer will mean that I am unable to comply with the requirements of the OHSA 1993 Construction Regulations 2014, and accept that my tender will be prejudiced and may be rejected at the discretion of the Employer.
8. I am aware of the fact that, should I be awarded the contract, I must submit the notification required in terms of Regulation 3 of the OHSA 1993 Construction Regulations 2014 before I will be allowed to proceed with any work under the contract.

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

P. CERTIFICATE FOR PAYMENT OF MUNICIPAL SERVICES

CERTIFICATE FOR PAYMENT OF MUNICIPAL SERVICES

DECLARATION IN TERMS OF CLAUSE 112(1) OF THE MUNICIPAL FINANCE MANAGEMENT ACT (NO.56 OF 2003) - (To be signed in the presence of a Commissioner of Oaths)

FAILURE TO SUBMIT ANY PROOF AS REQUIRED, WILL INVALIDATE THE BID

I, _____, _____ (full name and ID no.), hereby acknowledge that according to SCM Regulation 38(1)(d)(i), the Municipality may reject the tender of the tenderer if any municipal rates and taxes or municipal service charges owed by the Tenderer or any of its directors/members/partners to Ugu District Municipality, or to any other municipality or municipal entity, are in arrears for more than 3 (three) months.

I declare that I am duly authorised to act on behalf of _____ (name of the firm) and hereby declare, that to the best of my personal knowledge, neither the firm nor any director/member/partner of said firm is in arrears on any of its municipal accounts with any municipality in the Republic of South Africa, for a period longer than 3 (three) months.

I further hereby certify that the information set out in this schedule and/or attachment(s) hereto is true and correct.

The Bidder acknowledges that failure to properly and truthfully complete this schedule may result in the bid being disqualified.

Director / Shareholder / partner.....

Physical /residential address of the Director /shareholder / partner.....

Municipal Account number(s).....

Director / Shareholder / partner.....

Physical /residential address of the Director /shareholder / partner.....

Municipal Account number(s).....

Physical address of the Business.....

Municipal Account number(s)..... ....

....
.....

Signature Position Date

NB: Bidders who reside/whose businesses are situated in the rural area and are not liable for any Municipal Payment for Services MUST submit an Affidavit (SAPS) in confirmation of their declaration.

NB: Bidders who are tenants and are not liable for any Municipal Payment for Services MUST submit a valid Lease Agreement

NB: Bidders who reside/operating their businesses in a property situated in an urban/ township area that they do not own or rent MUST submit the Municipal Account for the owner and an Affidavit from the owner confirming same.

COMMISSIONER OF OATHS

Signed and sworn to before me at....., on this .....day of 2021

by the Deponent, who has acknowledged that he/she knows and understands the contents of this Affidavit, it is true and correct to the best of his/her knowledge and that he/she has no objection to taking the prescribed oath, and that the prescribed oath will be binding on his/her conscience.

COMMISSIONER OF OATHS:-

Name & Surname.....

Signature.....

Position:.....

COMMISSIONER OF OATHS STAMP

ATTACH COPY OF THE LATEST MUNICIPAL ACCOUNT OR AFFIDAVIT OR LEASE AGREEMENT

[Failure of a Bidder to submit this will invalidate the bid]

T2.2.2 RETURNABLE SCHEDULES AND OTHER DOCUMENTS REQUIRED FOR TENDER EVALUATION PURPOSES

Q. TENDERER'S FINANCIAL STANDING

In terms of **Clause F.2.18.1 of the Standard Conditions of Tender** the Tenderer shall provide information about his commercial position, which includes information necessary for the Employer to evaluate the Tenderer's financial standing.

To that end, the Tenderer must attach herewith a bank rating that is specific to this tender, the tendered amount and the specified time for completion. The bank rating must be on the tenderer's bank's letterhead.

Failure to provide a bank rating with this tender will invalidate the Tender, as it will be concluded that the tenderer does not have the necessary financial resources at his disposal to complete the contract successfully within the specified time for completion.

Furthermore, the bank rating provided herewith will be used in determining the Tenderer's points for Criteria 2: Financial Resources (Bank Rating) for Functionality in terms of F.3.11.9.2 in Section T1.2.

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

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

R. SCHEDULE OF SIMILAR WORK UNDERTAKEN IN THE LAST 5 YEARS

Principal Contractor

NAME: _____

No	Name of Similar Project Successfully Undertaken	Description	Year Completed	Contract Value R	Referees		
					Name	Position	Contact Details
1							
2							
3							
4							
5							

Signed by Tenderer: _____

Note: 1. If there is more than 1 Joint Venture Partner/Consortium/Association , the page is to be copied and completed for each additional partner.

S. PREFERENCE SCHEDULES AND AFFIDAVIT

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

This preference form must form part of all bids invited. It contains general information and serves as a claim form for preference points for Broad-Based Black Economic Empowerment (B-BBEE) Status Level of Contribution.

NB: BEFORE COMPLETING THIS FORM, BIDDERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF B-BBEE, AS PRESCRIBED IN THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022.

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to all bids:

- the 80/20 system for requirements with a Rand value of up to R 50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R 50 000 000 (all applicable taxes included).

1.2 The value of this bid is estimated to not exceed R 50 000 000 (all applicable taxes included) and therefore the 80/20 system shall be applicable.

1.3 Preference points for this bid shall be awarded for:

(a) Price; and
(b) B-BBEE Status Level of Contribution.

1.3.1 The maximum points for this bid are allocated as follows:

		POINTS
1.3.1.1	**PRICE**	**80 or 90**
1.3.1.2	**B-BBEE STATUS LEVEL OF CONTRIBUTION**	**20 or 10**
	Total points for Price and B-BBEE must not exceed	**100**

1.4 Failure on the part of a bidder to fill in and/or to sign this form and submit a B-BBEE Verification Certificate from a Verification Agency accredited by the South African Accreditation System (SANAS) or a Registered Auditor approved by the Independent Regulatory Board of Auditors (IRBA) or an Accounting Officer as contemplated in the Close Corporation Act (CCA) together with the bid, will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.

1.5. The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

2. DEFINITIONS

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

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

2.3 "**B-BBEE status level of contributor"** means the B-BBEE status received by a measured entity based on its overall performance using the relevant scorecard contained in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;

2.4 **"bid"** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of services, works or goods, through price quotations, advertised competitive bidding processes or proposals;

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

2.6 **"comparative price"** means the price after the factors of a non-firm price and all unconditional discounts that can be utilized have been taken into consideration;

2.7 **"consortium or joint venture"** means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract;

2.8 **"contract"** means the agreement that results from the acceptance of a bid by an organ of state;

2.9 **"EME"** means any enterprise with an annual total revenue of R5 million or less .

2.10 **"Firm price"** means the price that is only subject to adjustments in accordance with the actual increase or decrease resulting from the change, imposition, or abolition of customs or excise duty and any other duty, levy, or tax, which, in terms of the law or regulation, is binding on the contractor and demonstrably has an influence on the price of any supplies, or the rendering costs of any service, for the execution of the contract;

2.11 **"functionality"** means the measurement according to predetermined norms, as set out in the bid documents, of a service or commodity that is designed to be practical and useful, working or operating, taking into account, among other factors, the quality, reliability, viability and durability of a service and the technical capacity and ability of a bidder;

2.12 **"non-firm prices"** means all prices other than "firm" prices;

2.13 **"person"** includes a juristic person;

2.14 **"rand value"** means the total estimated value of a contract in South African currency, calculated at the time of bid invitations, and includes all applicable taxes and excise duties;

2.15 **"sub-contract"** means the primary contractor's assigning, leasing, making out work to, or employing, another person to support such primary contractor in the execution of part of a project in terms of the contract;

2.16 **"total revenue"** bears the same meaning assigned to this expression in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act and promulgated in the *Government Gazette* on 9 February 2007;

2.17 **"trust"** means the arrangement through which the property of one person is made over or bequeathed to a trustee to administer such property for the benefit of another person; and

2.18 **"trustee"** means any person, including the founder of a trust, to whom property is bequeathed in order for such property to be administered for the benefit of another person.

3. ADJUDICATION USING A POINT SYSTEM

3.1 The bidder obtaining the highest number of total points will be awarded the contract.
3.2 Preference points shall be calculated after prices have been brought to a comparative basis taking into account all factors of non-firm prices and all unconditional discounts;.

3.3 Points scored must be rounded off to the nearest 2 decimal places.

3.4 In the event that two or more bids have scored equal total points, the successful bid must be the one scoring the highest number of preference points for **SPECIFIC GOALS**.

3.5 However, when functionality is part of the evaluation process and two or more bids have scored equal points including equal preference points for **SPECIFIC GOALS**, the successful bid must be the one scoring the highest score for functionality.

3.6 Should two or more bids be equal in all respects; the award shall be decided by the drawing of lots.

4. POINTS AWARDED FOR PRICE

THE 80/10 PREFERENCE POINT SYSTEMS

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

$$Ps = 80\ (1 - (Pt - Pmin/Pmin))$$

Where

Ps = Points scored for comparative price of bid under consideration
Pt = Comparative price of bid under consideration
Pmin = Comparative price of lowest acceptable bid

5. POINTS AWARDED FOR SPECIFIC GOALS

5.1 In terms of Regulation 5 (2) and 6 (2) of the Preferential Procurement Regulations, preference points must be awarded to a bidder for attaining the Specific Goals points in accordance with the table below:

	Categories	Weight	80|20	90|10
1	Ownership	60%	12	6
2	Reconstruction & Development Programme	30%	6	3
3	Other Specific Goals-	10%	2	1
		100%	20	10
#	Specific Goal(s)	Weight	80|20 PP	90|10 PP
	Ownership Categories :			
1	**Broad Based Black Economic Empowerment:**			
	1. BBBEE Level 1	100%	12	6
	2.BBBEE Level 2	80%	10	5
	3. BBBEE Level 3 to 8	40%	6	3
2	**Promotion of Local Business(s)**			
	1. Enterprise Located within the District Municipality - Rural	100%	6	3
	2. Enterprise Located within the District Municipality - Urban	67.7%	4	2

	2. Enterprise Located within the Province	33.3%	2	1
3	**Other Specified Goals**			
	1. Enterprise 100% owned by Youth/Women/Disabled/ Military V	100%	2	1

5.2 Bidders who qualify as EMEs in terms of the B-BBEE Act must submit a certificate issued by an Accounting Officer as contemplated in the CCA or a Verification Agency accredited by SANAS or a Registered Auditor. Registered auditors do not need to meet the prerequisite for IRBA's approval for the purpose of conducting verification and issuing EMEs with B-BBEE Status Level Certificates.

5.3 Bidders other than EMEs must submit their original and valid B-BBEE status level verification certificate or a certified copy thereof, substantiating their B-BBEE rating issued by a Registered Auditor approved by IRBA or a Verification Agency accredited by SANAS.

5.4 A trust, consortium or joint venture, will qualify for points for their B-BBEE status level as a legal entity, provided that the entity submits their B-BBEE status level certificate.

5.5 A trust, consortium or joint venture will qualify for points for their B-BBEE status level as an unincorporated entity, provided that the entity submits their consolidated B-BBEE scorecard as if they were a group structure and that such a consolidated B-BBEE scorecard is prepared for every separate bid.

5.6 Tertiary institutions and public entities will be required to submit their B-BBEE status level certificates in terms of the specialized scorecard contained in the B-BBEE Codes of Good Practice.

5.7 A person will not be awarded points for B-BBEE status level if it is indicated in the bid documents that such a bidder intends sub-contracting more than 25% of the value of the contract to any other enterprise that does not qualify for at least the points that such a bidder qualifies for, unless the intended sub- contractor is an EME that has the capability and ability to execute the sub-contract.

5.8 A person awarded a contract may not sub-contract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level than the person concerned, unless the contract is sub-contracted to an EME that has the capability and ability to execute the sub-contract.

6. BID DECLARATION

6.1 Bidders who claim points in respect of B-BBEE Status Level of Contribution must complete the following:

7. SPECIFIC GOAL CONTRIBTION CLAIMED IN TERMS OF PARAGRAPHS 1.3.1.2 AND 5.1

7.1 Specific Goals Points: …… = ……(maximum of 10 points for 90/10 or 20 Points for 80/20)
(Points claimed in respect of paragraph 7.1 must be in accordance with the table reflected in paragraph 5.1 and must be substantiated by means of a B-BBEE certificate issued by a Verification Agency accredited by SANAS or a Registered Auditor approved by IRBA or an Accounting Officer as contemplated in the CCA), Proof of Residence which would be the Utility Statement, Lease Agreement or SAPS Affidavit in case the business is from Rural Areas.

8. SUB-CONTRACTING

8.1 Will any portion of the contract be sub-contracted? YES / NO
(delete which is not applicable)

8.1.1 If yes, indicate:

(i) what percentage of the contract will be subcontracted? .....……%

(ii) the name of the sub-contractor? ……..

(iii) the Specific Goals level of the sub-contractor? ……..……..

(iv) whether the sub-contractor is an EME? YES / NO
(delete which is not applicable)

9 DECLARATION WITH REGARD TO COMPANY/FIRM

9.1 Name of firm .....

9.2 VAT registration number .....

9.3 Company registration number …….

9.4 TYPE OF COMPANY/ FIRM

- ☐ Partnership/Joint Venture / Consortium
- ☐ One person business/sole propriety
- ☐ Close corporation
- ☐ Company
- ☐ (Pty) Limited

[TICK APPLICABLE BOX]

9.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

……. .....
…… .....
……..…..

9.6 COMPANY CLASSIFICATION

- ☐ Manufacturer
- ☐ Supplier
- ☐ Professional service provider
- ☐ Other service providers, e.g. transporter, etc.

[TICK APPLICABLE BOX]

9.7 MUNICIPAL INFORMATION

Municipality where business is situated

……..

Registered Account Number …….

Stand Number …….

9.8 TOTAL NUMBER OF YEARS THE COMPANY/FIRM HAS BEEN IN BUSINESS?
……

9.9 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the **SPECIFIC GOALS** status level of contribution indicated in paragraph 7 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

(i) The information furnished is true and correct;

(ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form.

(iii) In the event of a contract being awarded as a result of points claimed as shown in paragraph 7, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;

(iv) If the **SPECIFIC GOAL Points have** been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –

(a) disqualify the person from the bidding process;

(b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;

(c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;

(d) restrict the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, from obtaining business from any organ of state for a period not exceeding 10 years, after the audi alteram partem (hear the other side) rule has been applied; and

(e) forward the matter for criminal prosecution

WITNESSES:

1. ……

2. ……

……
SIGNATURE(S)OF BIDDER(S)

DATE: …….

ADDRESS: …….....

…….....

T. PRELIMINARY PROGRAMME

The Tenderer shall detail below or attach a preliminary programme reflecting the proposed sequence, duration and tempo of execution of the various activities comprising the work for this Contract. The programme shall be in accordance with the information supplied in the Contract, requirements of the Scope of Work, Project Specifications and with all other aspects of his Tender.

PROGRAMME

ACTIVITY	WEEKS													

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

]

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

U. SCHEDULE OF PLANT AND EQUIPMENT

The following are lists of major items of relevant equipment that I / we presently own or lease and will have available for this contract if my / our tender is accepted.

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

DESCRIPTION ***(type, size, capacity etc)***	**QUANTITY**	**YEAR OF MANUFACTURE**

Attach additional pages if more space is required

(b) Details of major equipment that will be hired, or acquired for this contract if my / our tender is accepted

DESCRIPTION ***(type, size, capacity etc)***	**QUANTITY**	**HOW ACQUIRED**	
		HIRE/ BUY	**SOURCE**

Attach additional pages if more space is required

The Tenderer undertakes to bring onto site without additional cost to the Employer any additional plant not listed but which may be necessary to complete the contract within the specified contract period.

Failure to complete this form properly and correctly, will lead to the conclusion that the tenderer does not have the necessary plant and equipment resources at his disposal, which will prejudice his tender.

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

V. PROPOSED SUBCONTRACTORS

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

If I/we am/are awarded a contract I/we agree that this notification does not change the requirement for me/us to submit the names of proposed subcontractors in accordance with requirements of the contract for such appointments. If there are no such requirements in the contract, then your written acceptance of this list shall be binding between us.

NAMES AND ADDRESSES OF PROPOSED SUBCONTRACTORS **(< CIDB GRADING 4CE, or higher)**	**DESCRIPTION OF WORK** TO BE EXECUTED BY SUBCONTRACTOR	**VALUE** OF THE WORK	**PERCENTAGE** VALUE OF WORK TO BE SUBCONTRACTED
TOTAL TENDER OFFER AMOUNT			**100%**

Tenderers are to attach to this page the following of the proposed Sub-Contractors.

1. ***Sub Contact Agreement***
2. ***Sub-Contractor CIDB Rating Certificate***
3. ***B-BBEE Level Certificate***
4. ***Proof of Residence (Utilities, Lease Agreement, SAPS Affidavit if from Rural)***
5. ***EME or QSE Sworn Affidavit***
6. ***Directors ID***

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

W. KEY PERSONNEL

In terms of the Scope of Work and the Conditions of Tender, unskilled workers may only be brought in from outside the local community if such personnel are not available locally.

The Tenderer shall list below the personnel which he intends to utilize on the Works, including key personnel which may have to be brought in from outside if not available locally.

CATEGORY OF EMPLOYEE	NUMBER OF PERSONS		
	KEY PERSONNEL, PART OF THE CONTRACTOR'S ORGANISATION	KEY PERSONNEL TO BE IMPORTED IF NOT AVAILABLE LOCALLY	UNSKILLED PERSONNEL TO BE RECRUITED FROM LOCAL COMMUNITY
Contracts Manager			
Construction Manager/ Site Agent			
Foreman			
Artisan			
Others:			

The Tenderer shall attach hereto the *curricula vitae*, in the form included hereafter, of the Project Director / Contracts Manager, the Site Agent / Project Manager and the Site Supervisor / Foreman. The information is necessary for evaluation of the tender.

The above information will be used to evaluate **Criteria 3: Experience of Key Personnel** for Functionality under F.3.11.9.3 in Section T1.2.

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

CURRICULUM VITAE OF CONTRACTS MANAGER

Name:	**Date of birth:**
Profession:	**Nationality:**
Qualifications:	**Full time on Project: Y / N**
Professional Registration Number:	**Attend site meetings: Y / N**
Name of Employer (firm):	
Current position:	**Years with firm:**
Employment Record:	
Experience Record Pertinent to Required Service:	
State number of years of appropriate experience:	

Certification:

I, the undersigned, certify that, to the best of my knowledge and belief, this data correctly describes me, my qualifications, and my experience.

..... **…….**

SIGNATURE OF THE INCUMBENT IN THE SCHEDULE **DATE**

CURRICULUM VITAE OF CONSTRUCTION MANAGER/SITE AGENT

Name:	**Date of birth:**
Profession:	**Nationality:**
Qualifications:	**Full time on Project: Y / N**
Professional Registration Number:	**Attend site meetings: Y / N**
Name of Employer (firm):	
Current position:	**Years with firm:**
Employment Record:	
Experience Record Pertinent to Required Service:	
State number of years of appropriate experience:	

Certification:

I, the undersigned, certify that, to the best of my knowledge and belief, this data correctly describes me, my qualifications, and my experience.

..... **……..……**

SIGNATURE OF THE INCUMBENT IN THE SCHEDULE **DATE**

CURRICULUM VITAE OF FOREMAN

Name:		**Date of birth:**
Profession:		**Nationality:**
Qualifications:		**Full time on Project: Y / N**
Professional Registration No:		**Attend site meetings: Y / N**
Name of Employer (firm):		
Current position:		**Years with firm:**
Employment Record:		
Experience Record Pertinent to Required service:		
State number of years of appropriate experience:		

Certification:

I, the undersigned, certify that, to the best of my knowledge and belief, this data correctly describes me, my qualifications, and my experience.

..... **…….**
SIGNATURE OF THE INCUMBENT IN THE SCHEDULE **DATE**

CURRICULUM VITAE OF ARTISAN

Name:		**Date of birth:**
Profession:		**Nationality:**
Qualifications:		**Full time on Project: Y / N**
Professional Registration No:		**Attend site meetings: Y / N**
Name of Employer (firm):		
Current position:		**Years with firm:**
Employment Record:		
Experience Record Pertinent to Required service:		
State number of years of appropriate experience:		

Certification:

I, the undersigned, certify that, to the best of my knowledge and belief, this data correctly describes me, my qualifications, and my experience.

..... **…….**
SIGNATURE OF THE INCUMBENT IN THE SCHEDULE **DATE**

Ugu District Municipality

VOLUME 1

CONTRACT

PART C1:

AGREEMENT AND CONTRACT DATA

PART C1: AGREEMENT AND CONTRACT DATA

Table of Contents

C1.1 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:

**UGU DISTRICT MUNICIPALITY PIPELINE REPLACEMENT PROGRAMME:
PLANNED REPLACEMENT OF BULK AND RETICULATION PIPELINES AND MISCELLANEOUS WORKS**

CONTRACT Nº UGU-07-1628-2023

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

By the representative of the Tenderer, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance, the Tenderer offers to perform all of the obligations and liabilities of the Contractor under the Contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the Conditions of Contract identified in the Contract Data. **Tenderer is to carry forward to this offer a total of all sections upon which the tenderer is bidding**

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

.....

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

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

Signature _____

Name _____

Capacity _____

For the Tenderer _____
(Name and address of organization)

Name and signature of witness _____

_____ **Date** _____

Acceptance

By signing this part of the Form of Offer and Acceptance, the Employer identified below accepts the Tenderer's Offer. In consideration thereof, the Employer shall pay the Contractor the amount due in accordance with the Conditions of Contract identified in the Contract Data. Acceptance of the Tenderer's Offer shall form an agreement between the Employer and the Tenderer upon the terms and conditions contained in this Agreement and in the Contract that is the subject of this Agreement.

The terms of the contract are contained in

Part 1 Agreement and Contract Data, (which includes this Agreement)
Part 2 Pricing Data
Part 3 Scope of Work
Part 4 Site Information (if applicable)

and drawings and documents or parts thereof, which may be incorporated by reference into Parts 1 to 4 above.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules as well as any changes to the terms of the Offer agreed by the Tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Agreement. No amendments to or deviations from said documents are valid unless contained in this Schedule, which must be duly signed by the authorized representative(s) of both parties.

The Tenderer shall within two weeks after receiving a completed copy of this Agreement, including the Schedule of Deviations (if any), contact the Employer's agent (whose details are given in the Contact Data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the Conditions of Contract identified in the Contract Data at, or just after, the date of this Agreement comes into effect. Failure to fulfill any of these obligations in accordance with those terms shall constitute a repudiation of this Agreement.

Notwithstanding anything contained herein, this Agreement comes into effect on the date when the Tenderer receives one fully completed original copy of this document, including the Schedule of Deviations (if any). Unless the Tenderer (now the Contractor) within five days after 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 binding contract between the parties,

Signature (s) _____

Name(s) _____

Capacity _____

For the Employer _____
(Name and address of organization)

Name and signature of witness _____

_____ **Date** _____

SCHEDULE OF DEVIATIONS

Notes:

1. The extent of deviations from the tender documents issued by the employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender,
2. A Tenderer's covering letter shall not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid become the subject of agreements reached during the process of offer and acceptance, the outcome of such agreement shall be recorded here,
3. Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the tender documents and which it is agreed by the Parties becomes an obligation of the contract shall also be recorded here,
4. Any change or addition to the tender documents arising from the above arrangements 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 Tenderer agree to and accept the foregoing Schedule of deviations as the only deviations from and amendments to the documents listed in the Tender Data and addenda thereto as listed in the Tender Schedules, as well as any confirmation, clarification or change to the terms of the offer agreed by the Tenderer and the Employer during the process of offer and acceptance.

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

For the Tenderer:

Signature _____

Name _____

Capacity _____

_____
(Name and address of organisation)

Name and signature of witness _____ **Date** _____

For the Employer:

Signature _____

Name _____

Capacity _____

_____
(Name and address of organisation)

Name and signature of witness _____

_____ **Date** _____

C1.2 CONFIRMATION OF RECEIPT

The Tenderer, (now Contractor), identified in the Offer part of this Agreement hereby confirms receipt from the Employer, identified in the Acceptance part of this Agreement, of one fully completed original copy of this Agreement, including the Schedule of Deviations (if any) today:

The ..... (day)

Of ..... (month)

20..... (year)

At ..... (place)

For the Contractor:

……

Signature

…….

Name

…….

Capacity

Signature and name of witness:

……

Signature

…….

Name

…….

C1.3 CONTRACT DATA

PART 1: DATA PROVIDED BY THE EMPLOYER

C.1.3 CONTRACT DATA

C1.3.1 Part 1: Data provided by the Employer

C1.3.1.1 Conditions of Contract

The Conditions of Contract are

- the "General Conditions of Contract"
  as they appear in the commercially available publication "General Conditions of Contract for Construction Works, Third Edition, 2015", hereinafter referred to as **"GCC 2015";** and
- specific data as contained in this Contract Data.

Each party to the Contract shall purchase its own copy of the GCC 2015 with the specified print number that applies to this Contract (see Note 1 below), available from its publisher:

South African Institution of Civil Engineering
Private Bag X200
Halfway House 1685
South Africa
Tel +27 (0)11 805 5947

All of the following Notes apply:

NOTES

Note 1

The ***edition*** number (3rd Edition) of GCC 2015 must not be confused with its ***print*** number. The GCC 2015 in itself currently only has had one print run.

Note 2

The GCC 2015 makes several references to the Contract Data. The Contract Data shall take precedence over the GCC 2015 in the interpretation of any ambiguity or inconsistency.

Each item of data below is cross-referenced to the clause in the GCC 2015 to which it applies.

The documents forming the Contract are to be taken as mutually explanatory of one another. For the purpose of interpretation, the priority of the documents shall be in accordance with the following sequence:

a) the Form of Offer and Acceptance.
b) amplifications of the General Conditions of Contract within the Contract Data.
c) additional special conditions or amendments to the General Conditions of Contract within the Contract Data.
d) the General Conditions of Contract.
e) the Specifications, Drawings, Schedules and other documents forming part of the Contract (in that order) contained in the Scope of Work and the Site Information.

If any ambiguity or discrepancy is found in the documents, the Employer's Agent shall issue any necessary clarification or instruction.

Note 3

Certain pro-forma forms and pro-forma agreements contained in the GCC 2015 have been adapted for this particular contract. Those pro-forma forms and pro-forma agreements contained in the GCC 2015 do not apply where replaced by similar pro-forma forms and pro-forma agreements in this document.

C1.3.1.2 Contract-Specific Data

The following contract-specific data, referring to the General Conditions of Contract, are applicable to this Contract:

C1.3.1.2.1 Compulsory Data

Clause	Data
1.1.1.13	The Defects Liability Period is 365 days.
1.1.1.14	The time for achieving Practical Completion is **24 weeks**.
1.1.1.15	The name of the Employer is Ugu District Municipality
1.1.1.26	The Pricing Strategy of a Re-measurement Contract shall apply.
1.2.1.2	The address of the Employer is: Physical address: 96 Marine Drive Oslo Beach 4240 Postal address: P O Box 33 Port Shepstone 4240 Contact numbers: Corporate : 039 688 5700 Fax : 039 682 4820

<table>
<tr><th>Clause</th><th>Data</th></tr>
<tr><td>1.2.1.2</td><td>The following Clauses of the Conditions of contract govern certain functions and duties of the Employer's Agent. The list may not necessarily be complete:
<table>
<tr><th>Clause No</th><th>Event</th><th>Employer's Agent requires Employer's written approval to act</th></tr>
<tr><td>4.10.1</td><td>Use of Site for Contractor's employees</td><td>Y</td></tr>
<tr><td>5.7.3</td><td>Acceleration of rate of progress</td><td>Y</td></tr>
<tr><td>5.7.3</td><td>Payment for acceleration</td><td>Y</td></tr>
<tr><td>5.11.2</td><td>Suspension of the Works</td><td>N</td></tr>
<tr><td>5.11.6</td><td>Proceeding with Works after suspension</td><td>N</td></tr>
<tr><td>5.12.4</td><td>Acceleration instead of extension of time</td><td>N</td></tr>
<tr><td>5.13.2</td><td>Reduction in penalty</td><td>N</td></tr>
<tr><td>6.3.1</td><td>Variation orders</td><td>N</td></tr>
<tr><td>9.1.5</td><td>Termination of Contract</td><td>N</td></tr>
</table></td></tr>
<tr><td>3.2.3</td><td></td></tr>
<tr><td></td><td></td></tr>
</table>

Clause	Data
5.3.1	The documentation required before commencement with Works execution are: • Health and Safety Plan (Refer to Clause 4.3) • A signed Agreement between the Employer and the Contractor for the Works to be completed by the Contractor in terms of the provisions of Section 37(2) of the Occupational Health and Safety Act (Act No.85 of 1993) and the Construction Regulations promulgated thereunder (Refer to Clause 4.3). • Proof of payment to the Employer, that the Contractor has paid all contributions required in terms of the Compensation for Occupational Injuries and Diseases Act, No. 130 of 1993 (Refer to Clause 4.3). • Initial programme (Refer to Clause 5.6) • Security (Refer to Clause 6.2) • Insurance (Refer to Clause 8.6)
5.3.2	The time to submit the documentation required before commencement with Works execution is **14 Days**.
5.4.2	The access and possession of Site shall not be exclusive to the Contractor.
5.8.1	The non-working Days are Sundays The special non-working Days are: Statutory public holidays; and All annual year-end shutdown periods as recommended by the South African Federation of Civil Engineering Contractors (SAFCEC), and which commence after the Commencement Date and which commence before the Due Completion Date.
5.13.1	The penalty for failing to complete the Works is **R 3 500.00 per Day**.
5.14.1	The requirements for achieving Practical Completion are; ▪ All pipe lines shall have been replaced and successfully pressure tested. ▪ All pressure reducing valves shall be operating and set correctly. ▪ All consumers shall be reconnected. ▪ Any trenches in sealed roads shall be satisfactorily repaired. Any customer water meters that need to be replaced shall be installed.
5.16.3	The latent defect period is ten years, commencing on the Day after the date of certification of Practical Completion.
6.2.1	Performance Guarantee of 10% of the Contract Sum plus retention of 5% of the value of the works.

Clause	Data
6.8.2	The value of the certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule with the following values: The values of the coefficients shall be: a = 0.15 b = 0.20 c = 0.55 d = 0.10 The urban area nearest to the Site shall be KwaZulu-Natal, Durban, as listed in the Statistical Release P0141, Additional Tables: Table 14 "CPI – all items, according to area" of Statistics South Africa (which shall apply to the "Labour Index" as a relevant Consumer Price Index). The Construction Equipment shall be Civil engineering plant, as listed in Statistical Release P0151, Table 4 "Producer Price Index" of Statistics South Africa (which shall apply to the "Plant Index" as a relevant Producer Price Index). The Materials shall be Construction - Civil Engineering, as listed in the Statistical Release P0151, Table 3 or Table 4 respectively, of Statistics South Africa (which shall apply to the "Materials Index" as a relevant Producer Price Index). The area for Diesel at wholesale level shall be Coast, as listed in the Statistical Release P0151, Table 4 of Statistics South Africa (which shall apply to the "Fuel Index" as a relevant Producer Price Index). The base month is one month prior to tender closing.
6.10.1.5	The percentage advance on materials not yet built into the Permanent Works is 80%. Proof of ownership is required.
6.10.3	The limit of retention money is 15% of the contract value.
8.6.1.1.2	The value of Plant and materials supplied by the Employer to be included in the insurance sum is nil.
8.6.1.1.3	The amount to cover professional fees for repairing damage and loss to be included in the insurance sum is a maximum of R300 000,00.
8.6.1.3	The limit of indemnity for liability insurance is R5 000,00 for any single claim. The number of claims during the construction and Defects Liability Periods shall be unlimited.

C1.3.1.2.2 Variations to the General Conditions of Contract

Clause	Data
5.14.5.1	**Consequences of Completion** *Amend Clause 5.14.5.1 as follows:* *In the second line, substitute the word* 'Guarantor' *with* 'Contractor'.

6.9.3	**Identification of Plant and Materials** *Add the following at the end of Sub-Clause 6.9.3:* **Storage of Plant** In consideration of receiving, from the Employer, payment on account, after the deduction of retention monies, in respect of items of Plant stored at the Contractor's workshop or his suppliers' premises or his other storage facilities, the Contractor shall complete the standard Employer Certificate of Indemnity. In so doing the Contractor: (a) acknowledges that the items of Plant are the sole property of, and are held on behalf of, the Employer; (b) indemnifies the Employer against any loss or damage whatsoever of or to the said items of Plant whilst in the Contractor's possession or in transit and undertakes to effect adequate insurance against these risks in the name of the Employer and to produce of such insurance to the Employer's Agent; (c) undertakes to deliver and install, at the site, the said Plant when required by the Employer; (d) undertakes that no payment has been received, in respect of the said items of Plant, from any other of his clients or employers and that the Employer has prior claim to the value of payments so received for same, prior to all others, from any assets of the Contractor's company; and (e) undertakes to act in accordance with such instructions as received from the Employer, through its officers, to protect the interests of the Employer. Payment for Plant stored at the Contractor's workshop or his suppliers' premises or his other storage facilities, shall be at the sole discretion of the Employer's Agent and the Employer's Agent reserves the right to amend the requirements of the standard Certificate of Indemnity.
6.10.6	**Set-off and delayed payments** *Amend Clause 6.10.6.2 as follows:* *Delete the words '*Contractor's Bank*' and substitute with the words '*Employer's Bank*'*
7.8.2	**Cost of making good of defects** *Amend Clause 7.8.2.1 as follows:* *In the first line, correct the spelling of '*therefore*'.*
8.3.1	**Excepted Risks** *Amend Clause 8.3.1.12 as follows:* *In the second line, delete the words '*Employer or any of their*' and substitute with '*or any of its*'.*

9.1.2	**State of Emergency** *In the fifth line, delete the words* 'supply of' *and substitute with* 'availability of'.
Clause	**Data**
Contract Price Adjustment Schedule	**Contract Price adjustment Schedule** *Replace the descriptions of all the indices with the following descriptions:* ' "L" is the "Labour Index" and shall be the Consumer Price Index for the urban area nearest to the Site, as stated in the Contract Data, and as published in the Statistical News Release, P0141, Additional Tables: Table 14 "CPI – all items according to area" of Statistics South Africa. "P" is the "Plant Index" and shall be the Producer Price Index applicable to the appropriate Construction Equipment as stated in the Contract Data and as published in the Statistical Release P0151, Table 4 of Statistics South Africa. "M" is the "Materials Index" and shall be the Producer Price Index applicable to the appropriate materials as stated in the Contract Data and as published in the Statistical Release P0151, Table 3 or Table 4 of Statistics South Africa. "F" is the "Fuel Index" and shall be the Producer Price Index for Diesel at wholesale level for the area as stated in the Contract Data and as published in the Statistical News Release P0151, Table 4 of Statistics South Africa.'

C1.3.1.2.3 Additional clauses to the General Conditions of Contract

Clause	**Data**
1.1	**Definitions** *Add the following at the end of Sub-Clause 1.1.1:*
1.1.1.35	"Client", as used in the Occupational Health and Safety Act - Construction Regulations, means Employer.
1.1.1.36	"Principal Contractor", as used in the Occupational Health and Safety Act - Construction Regulations, means Contractor.
1.1.1.37	"Designer", as used in the Occupational Health and Safety Act - Construction Regulations, means Employer's Agent.

C1.4 FORM OF GUARANTEE

PRO-FORMA PERFORMANCE GUARANTEE

For use with the General Conditions of Contract for Construction Works, Second Edition, 2010.

GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means: .....

Physical address: .....

"Employer" means: **Ugu District Municipality**

"Contractor" means: .....

"Engineer" means: .....

"Works" means: Contract .....

"Site" means: .....

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

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

Amount in words: .....

"Guaranteed Sum" means: The maximum aggregate amount of R .....

Amount in words: .....

"Expiry Date" means: .....

CONTRACT DETAILS

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

PERFORMANCE GUARANTEE

1. The Guarantor's liability shall be limited to the amount of the Guaranteed Sum.

2. The Guarantor's period of liability shall be from and including the date of issue of this Performance Guarantee and up to and including the Expiry Date or the date of issue by the Engineer of the Certificate of Completion of the Works or the date of payment in full of the Guaranteed Sum, whichever occurs first. The Engineer and/or the Employer shall advise the Guarantor in writing of the date on which the Certificate of Completion of the Works has been issued.

3. The Guarantor hereby acknowledges that:

3.1 any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship;

3.2 its obligation under this Performance Guarantee is restricted to the payment of money.

. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 4.1 to 4.3:

4.1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Engineer in an Interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 4.2;

4.2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 4.1 and the sum certified has still not been paid;

4.3 A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum certified in 4.

5. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee, such demand stating that:

5.1 the Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 5; or

5.2 a provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Performance Guarantee is called up in terms of 5; and

5.3 the aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.

6. It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.

7. Where the Guarantor has made payment in terms of 5, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Performance Guarantee have been expended and shall refund the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.

8. Payment by the Guarantor in terms of 4 or 5 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.

9. Payment by the Guarantor in terms of 5 will only be made against the return of the original Performance Guarantee by the Employer.

10. The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may deem fit and the Guarantor shall not have the right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.

11. The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.

12. This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.

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

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

Signed at .....

Date .....

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

Capacity .....

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

Capacity .....

Witness signatory (1) .....

Witness signatory (2)

C1.5 ADJUDICATOR'S AGREEMENT

C1.5.1 DISCLOSURE STATEMENT

Please note that words in italics within brackets are items which should be stated.

(Date)

Contract: UGU DISTRICT MUNICIPALITY PIPELINE REPLACEMENT PROGRAMME:

Contractor: .....

Employer: Ugu District Municipality

Engineer: N/A

Dear Sirs

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

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

I shall act with complete impartiality and know of nothing at this time, which could affect my impartiality.

I have had no previous involvement with this project.

I do not have any financial interest in this project.

I am not currently employed by the Contractor, Employer or Engineer.

I do not have any financial connections with the Contractor, Employer or Engineer.

I do not have or have not had a personal relationship with any authoritative member of the Contractor, Employer or the Engineer which could affect my impartiality.

I undertake to immediately disclose to the parties any changes in the above position which could affect my impartiality or be perceived to affect same.

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

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

Name in full: .....

Signature: .....

C1.5.2: ADJUDICATION BOARD MEMBER AGREEMENT

This Agreement is entered into between:

Adjudication Board Member:

Name:.....

Physical address: .....

.....

.....

Postal address: .....

.....

.....

e-mail address: ..... Fax number: .....

Telephone number: ..... Mobile number: .....

Contractor:

Name:.....

Physical address: .....

.....

.....

Postal address: .....

.....

.....

e-mail address: ..... Fax number: .....

Telephone number: ..... Mobile number: .....

Employer:

Name:Ugu District Municipality

Physical address:28 Connor Street, Port Shepstone 4240

Postal address:P O Box 33 Port Shepstone 4240

Fax number:039 682 2646 ..... Telephone number: 033 688 5700

The Contractor and the Employer will hereinafter be collectively referred to as the Parties.
The Parties entered into a Contract for:

UGU DISTRICT MUNICIPALITY PIPELINE REPLACEMENT PROGRAMME:
PLANNED REPLACEMENT OF BULK AND RETICULATION PIPELINES AND MISCELLANEOUS WORKS:

which provides that a dispute under or in connection with the General Conditions of Contract for Construction Works, Second Edition, 2010, must be referred to *(ad-hock adjudication/standing adjudication)*.

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

1, The Adjudication Board Member accepts to perform his duties in accordance with the terms of Contract, the General Conditions of Contract for Construction Works Adjudication Board Rules and this Agreement.

2. The Adjudicator undertakes to remain independent and impartial of the Contractor, Employer and Engineer for the duration of the Adjudication Board proceedings.

3. The Adjudication Board Member agrees to serve for the duration of the Adjudication Board proceedings.

4. The Parties may at any time, without cause and with immediate effect, jointly terminate this Agreement.

5. Unless the Parties agree, the Adjudication Board Member shall not act as arbitrator or representative of either Party in any subsequent proceedings between the Parties under the Contract. No Party may call the Adjudication Board Member as a witness in any such subsequent proceedings.

6. The standing Adjudication Board's duties shall end upon the Adjudication Board Member(s) receiving notice from the Parties of their joint decision to disband the Adjudication Board.

7. The Adjudication Board Member shall be paid in respect of time spent upon or in connection with the adjudication including time spent travelling:

   (a) A monthly retainer of ..... *(amount)* for ..... *(number)* of months, and/or

   (b) A daily fee of ..... *(amount)* based on a ..... .*(number)* hour day, and or

   (c) A hourly free of..... *(amount)*, and/or

   (d) A non-recurrent appointment fee of ..... *(amount)* which shall be accounted for in the final sums payable.

8. The Adjudication Board Member's expenses incurred in adjudication work shall be reimbursed at cost.

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

This Agreement is entered into by:

Contractor's signature: .....

Contractor's name: .....

Place: .....

Date: .....

Employer's signature .....

Employer's name: Ugu District Municipality

Place: .....

Date: .....

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

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

Place: .....

Date: .....

**Delete the inapplicable party*

C1.6 AGREEMENT IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT No 85 OF 1993

THIS AGREEMENT is made between Ugu District Municipality (hereinafter called the EMPLOYER)

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

in his capacity as: .....

AND: .....

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

.....

in his capacity as: .....

duly authorized to sign on behalf of the Contractor.

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

PLANNED REPLACEMENT OF BULK AND RETICULATION PIPELINES AND MISCELLANEOUS WORKS:
32T32T

for the construction, completion and maintenance of the works;

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

NOW THEREFORE the parties agree as follows:

1. The CONTRACTOR undertakes to acquaint the appropriate officials and employees of the CONTRACTOR with all relevant provisions of the ACT and the regulations promulgated in terms thereof.

2. The CONTRACTOR undertakes to fully comply with all relevant duties, obligations and prohibitions imposed in terms of the ACT and Regulations: Provided that should the EMPLOYER have prescribed certain arrangements and procedures that same shall be observed and adhered to by the CONTRACTOR, his officials and employees. The CONTRACTOR shall bear the onus of acquainting himself/herself/itself with such arrangements and procedures.

3. The CONTRACTOR hereby accepts sole liability for such due compliance with the relevant duties, obligations, prohibitions, arrangements and procedures, if any, imposed by the ACT and Regulations, and the CONTRACTOR expressly absolves the EMPLOYER and the Employer's CONSULTING ENGINEERS from being obliged to comply with any of the aforesaid duties, obligations, prohibitions, arrangements and procedures in respect of the work included in the contract

4. The CONTRACTOR agrees that any duly authorized officials of the EMPLOYER shall be entitled, although not obliged, to take such steps as may be necessary to ensure that the CONTRACTOR has complied with his undertakings as more fully set out in paragraphs 1 and 2 above, which steps may include, but shall not be limited to, the right to inspect any appropriate site or premises occupied by the CONTRACTOR, or to take such steps it may

deem necessary to remedy the default of the CONTRACTOR at the cost of the CONTRACTOR.

5. The CONTRACTOR shall be obliged to report forthwith to the EMPLOYER any investigation, complaint or criminal charge which may arise as a consequence of the provisions of the ACT and Regulations, pursuant to work performed in terms of this agreement, and shall, on written demand, provide full details in writing of such investigation, complaint or criminal charge.

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

on this the ..... day of …….. 20……

SIGNATURE:.....

NAME AND SURNAME: .....

CAPACITY: .....

WITNESSES: 1. .....

2. .....

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

on this the …….. day of .....20……

SIGNATURE: .....

NAME AND SURNAME: .....

CAPACITY: .....

WITNESSES: 1. .....

2. .....

C1.7 NOTIFICATION OF CONSTRUCTION WORK

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993
Regulation 3 of the Construction Regulations, 2003

1. (a) Name and postal address of principal contractor:

_____

_____

1. (b) Name and telephone number of principal contractor's contact person:

_____

_____

2. Principal contractor's compensation registration number: _____

3. (a) Name and postal address of client:

_____

_____

3. (b) Name and telephone number of client's contact person or agent:

_____

4. (a) Name and postal address of designer(s) for this project:

_____

_____

4. (b) Name and telephone number of designer(s) contact person:

_____

5. Name and telephone number of principal contractor's construction supervisor on site appointed in terms of regulation 6.(1).

_____

6. Name/s of principal contractor's sub-ordinate supervisors on site appointed in terms of regulation 8.(2):

_____

7. Exact physical address of the construction site or site office:

_____

8. Nature of construction work:

_____

9. Expected commencement date: _____

10. Expected completion date: _____

11. Estimated maximum number of persons on the construction site: _____

12. Planned number of contractors on the construction site accountable to principal contractor: _____

13. Name(s) of contractors already chosen:

_____

_____

_____ _____

Principal Contractor Date

_____ _____

Client Date

- This document is to be forwarded to the Department of Labour and the Ugu District Municipality prior to commencement of work on site.
- All principal contractors that quality to notify must do so even if another principal contractor on the same site had done so prior to the commencement of work.

Ugu District Municipality

VOLUME 1

CONTRACT

PART C2:

PRICING DATA

PART C2: PRICING DATA

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C2.1 PRICING INSTRUCTIONS

1.0 GENERAL

The Contractor's attention is drawn to the Conditions of Contract, to the Specification and the Tender Drawings, all of which are to be read in conjunction with the Schedule of Quantities.

2.0 STANDARD SYSTEM

The Schedule of Quantities shall be interpreted in accordance with the method of measurement set out in the Specifications except where variations are implied by the omission of items or by the actual wording of the items in the Schedule of Quantities.

The quantities in the Schedule of Quantities are provisional. The Works as executed will be measured for payment in accordance with the Schedule of Quantities and under the items set forth therein, notwithstanding any custom to the contrary.

In the event of any item to be measured not being reasonably covered by the above Schedule, then the Standard Method of Measurement described in Clause 6.7 of the General Conditions of Contract (2010) shall apply and the appropriate rate shall be negotiated between the Engineer and the Contractor.

3.0 MEASUREMENT

Measurement shall be made of the finished work from the net dimensions or masses indicated in the drawings, and no allowance has been made, or will be made for waste.

4.0 PRICES INCLUSIVE

Prices and rates to be inserted in the Schedule of Quantities are to be the full inclusive value of the Work described under the several items. The items shall, unless otherwise stated herein, be held to include making, conveying and delivering, unloading, storing, unpacking, hoisting, setting, fitting and fixing in position, cutting and waste, laps, patterns, models and templates, labour, plant, fuel, hiring costs, temporary works, return of packings, safety precautions, overheads, on-costs, establishment charges, profit and all other costs and expenses which may be required in and for the construction of the work described together with all risks, liabilities and obligations arising out of the Conditions of Contract or implied in the Documents on which the Tender is to be based. Where special risks, liabilities and obligations cannot be dealt with as above, then the price thereof is to be separately stated in the item provided for the purpose.

5.0 SPECIFICATIONS AND DESCRIPTIONS

Descriptions in the Schedule of Quantities are abbreviated, and all Specification Clauses shall be read and deemed to apply to the items described in this Schedule of Quantities which are to be priced accordingly.

In the event of any Clause in the preceding Specifications being in conflict with any description and/or amplification thereof in the Schedule of Quantities the former shall prevail, and the Project Specification shall take precedence over the General Specification.

Directions and description of work and material given in the Specification are not necessarily repeated in the Schedule of Quantities. Reference is to be made to the Conditions of Contract, Specification and other relevant documents for this information. While references may be given in the Schedule, such references are not necessarily complete.

6.0 COMPLETION OF SCHEDULE OF QUANTITIES

Price or rate shall be entered against each item where provision is made for such pricing in the Schedule of Quantities whether quantities are stated or not and no two or more items can be bracketed together for a single price or rate. Items against which **N/A, left blank or –** is entered are to be considered as incomplete and will invalidate the tender. Items against which **NIL or zero (0)** is entered are to be considered to be fully priced and the tenderer will provide the items in question as specified at zero (0) or NIL price.

Tenderers are to complete only those sections that they require to submit a bid in full in black ink. Each section will be treated as a separate component of the contract and will be evaluated individually.

7.0 APPROVED, DIRECTED OR SELECTED

7.1 The words “approved”. “directed” or “selected” refer to the approval, direction or selection of the Engineer.

8.0 TRADE NAMES, PROPRIETARY BRANDS, ETC

All materials, fittings, furnishings, etc., specified under a Trade Name, Proprietary Brand or Catalogue Reference, shall be:

8.1 Used in strict accordance with the Manufacturer’s latest printed instructions.

8.2 Either exactly as described or of equal quality, weight or specification and approved by the Engineer.

The Contractor shall first obtain written approval from the Engineer before goods are placed on order from a source of supply other than is specified herein. Such approval shall not be unreasonably withheld.

9.0 MATERIALS AND WORKMANSHIP

All materials shall be the best of their respective kinds specified and the workmanship shall be the standard defined for the trade tests required for such work and to the approval of the Engineer.

In all cases the materials and workmanship shall be in accordance with the latest edition of the relevant South African Bureau of Standards (SABS) or if not defined therein the British Standard Specification (BSS) or Code of Practice (BSCP) unless otherwise specified.

The quantities given in this Schedule should not be used for ordering materials.

SECTION A:UGU DISTRICT MUNICIPALITY						
ITEM	**PAYMENT**	**DESCRIPTION**	**UNIT**	**QTY**	**RATE**	**AMOUNT**
	SABS 1200 AA	**SECTION A1: PRELIMINARY AND GENERAL**				
A1.1	PSAA 8.2.1	**Fixed - Charge Items (A1.1 - A1.9) for one establishment**				
A1.1.1	8.3.1	Contractual requirements	Sum	1		-
	8.3.2	**Establish Facilities on Site**				-
A1.2	8.3.2 (a)	Facilities for the Engineer (SABS 1200 AB):				
A1.2.1		Nameboard as detailed on Drawing No. J71-D01	Sum	1		-
A1.2.2	PS-8.1	Furnished site office, Drawing No. J71-D03	Sum	1		-
A1.2.3		Survey equipment	Sum	1		-
A1.3	8.3.2 (b)	**Facilities for the Contractor:**				
A1.3.1		Offices, storage sheds, workshops and living accommodation.	Sum	1		-
A1.3.2		Ablution and latrine facilities, tools, equipment, plant, Water supplies, electric power, communications and access	Sum	1		-
A1.4		Dealing with water:				
A1.4.1		Generally on site	Sum	1		-
A1.4.2		At stream/river crossings	Sum	1		-
A1.5	8.3.3	Other fixed charge obligations	Sum	1		-
A1.6	8.3.4	Remove Contractor's site establishment on completion	Sum	1		-
A1.7		Accommodation of traffic:				
A1.7.1		Along roads	Sum	1		-
A1.7.2		At driveways to private properties	Sum	1		-
A1.8	PE	Preparation of risk assessments, safe work procedures, the project H&S File, the H&S plan, the provision of PPE and protective clothing.The sum shall include all fixed costs necessary in complying with the OHS Act (1993 as amended) and the Construction Regulations (2003) and the Health and Safety Specifications	Sum	1		-
A1.9	PES	Compliance with requirements of the project Environmental Management Plan	Sum	1		-
	PSAA 8.2.2	**Time Related Items for one establishment - 6 months Period**				
A1.10	8.4.1	Contractual requirements	Sum	1		-
A1.11	8.4.2	Operate and maintain facilities on the site for the duration of construction:				
A1.11.1	8.4.2 (a)	Facilities for the Engineer-				
A1.11.1.1		Nameboard, Engineer's site offices & survey equipment	Sum	1		-
A1.12	8.4.2 (b)	Facilities for the Contractor-				
A1.12.1		Contractor's establishment as per Item A1.3	Sum	1		-
SUBTOTAL CARRIED FORWARD						-

SECTION A:UGU DISTRICT MUNICIPALITY

SUBTOTAL BROUGHT FORWARD						-
A1.13	PSAA 5.3	Dealing with water:				
A1.13.1		Generally on the site	Sum	1		-
A1.13.2		At stream/river crossings	Sum	1		-
A1.14	8.4.3	Supervision for duration of construction	month	6		-
A1.15		Accommodation of traffic and maintance of vehicular access to properties	Sum	1		-
A1.15.1		Along roads including road signage and flagman as necessary	Sum	1		-
A1.16	8.4.3	Company and head office overhead costs for the duration of the contract	Sum	1		-
A1.17	PE	Updating and amending the risk assessments, safe work procedures, the project H&S File, the H&S plan, the provision of PPE and protective clothing and any other H&S matters that the contractor deems necessary including compliance with all H&S matters during the construction	Sum	1		-
A1.18		Compliance with requirements of the project Environmental Management Plan	Sum	1		-
A1.19	8.4.3	Other time related obligations	Sum	1		-
						-
	8.5	**Provisional Sums**				-
A1.20		Locate existing services where ordered	Sum	1		-
A1.21		Relocation of existing services and fences where ordered	Sum	1		-
A1.22		Inspection of Materials by Inspectors appointed by the Engineer	Sum	1		-
A1.23		Allowance for Engineer's technical Assistant for duration of construction works	Sum	1		-
A1.24		Engineer's Representative cell phone calls	Sum	1		-
A1.25		Allowance for tools and equipment as directed by Employer	Sum	1		-
A1.26		Inspections by appointed Health and Safety Auditor	Sum	1		-
A1.27		Allowance for Social facilitation and public relations	Sum	1		-
A1.28		Contractor's mark up on items A1.23 to A28	%			-
	8.8	**TEMPORARY WORKS**				
A1.29		Supply or hire and use of specialist equipment for the detection of existing services:				
A1.29.1		Electric Cables	Sum	1		-
A1.29.2		Telkom Services	Sum	1		-
A1.30		Allowance for works as directred by Manager WRM on site	Sum	1		-
TOTAL FOR SECTION A1 CARRIED TO SUMMARY						-

	SABS 1200 DA	**SECTION A2: EARTHWORKS**				
A2.1		**Structures and Chambers**				
A2.1.1	8.3.1(b)	Excavate in all materials and use for backfilling or dispose as ordered for structures, stub column footings and chambers and manholes	m³	2		
	8.3.1 (c)	Extra over Item A2.1.1 for :				
A2.1.1.1		Intermediate excavation	m³	2		
A2.1.1.2		Hard rock excavation	m³	2		
A2.2	8.3.7	Removal of top soil to a depth of 150mm and stockpiling for re-use	m²	2		
A2.3	SABS 1200 DA2	**Site Clearance**				
A2.3.1	8.3.1(a)	Clear vegetation and trees of girth up to 1m along route of pipelines	m	2		
A2.3.2	8.3.1(b)	Clear Trees				
A2.3.2.1		Girth greater than 1m but less than 2m	N°	2		
A2.3.2.2	PSC 8.2	Remove and reinstate fences parallel to pipeline (rate to cover all types of wire fences)	m	2		
A2.4	SABS 1200	**Excavation**				
A2.4.1		Selective excavation *by hand* in all materials, backfill, compact or dispose of surplus/unsuitable material, for pipes up to and including 450 mm diameter for depths:				
A2.4.1.1		0,0m - 1,0m	m	5		
A2.4.1.2		1,0m - 1,5m	m	5		
A2.4.2	8.3.2	Selective excavation *by machine* in all materials for trenches, backfill, compact or dispose of surplus/unsuitable material, for pipes up to and including 450mm dia for depths: (rate to include for shoring where necessary)				
A2.4.2.1		Over and up				
A2.4.2.1		0,0m - 1,0m	m	5		
A2.4.2.2		1,0m - 1,5m	m	5		
A2.4.2.3		1,5m - 2,0m	m	5		
A2.4.2.4		2,0m - 2.5m	m	5		
A2.4.2.5		3,0m - 3,5m	m	5		
A2.4.2.6		3,5m - 4,0m	m	5		
A2.4.2.7		Greater than 4,0m	m	5		
A2.4.3	8.3.2	Excavate in all materials beyond the limits of pipe trenches for thrust walls, valve chambers, anchor blocks and manholes where ordered by the Engineer:				
		Over and Up to				
A2.4.3.1		0,0m - 1,0m	m³	2		
A2.4.3.2		1,0m - 2,0m	m³	2		
SUBTOTAL CARRIED FORWARD						

SUBTOTAL BROUGHT FORWARD						
A2.4.3.3		2,0m - 3,0m	m³	2		
A2.4.3.4		Greater than 3,0m	m³	2		
A2.4.4	DB 8.3.2	Excavate by hand in confined areas for pipe trenches	m³	2		
A2.4.5	8.3.2 (b)	EO Items A2.4.1 to A2.4.3 for :				
A2.4.5.1		Hard rock excavation	m³	2		
A2.4.5.2		Boulders Class A	m³	2		
A2.4.5.3		Boulders Class B	m³	2		
A2.4.6		Removal of rock without the use of explosives (only where ordered by the Engineer)	m³	2		
		Excavation Ancilliaries				
A2.4.7	8.2.2 (c)	Excavate unsuitable material from trench bottom and dispose	m³	2		
A2.4.8		Excavate by hand in soft material to expose existing services for:				
A2.4.8.1		Storm water pipes	m³	2		
A2.4.8.2		Telkom Services	m³	2		
A2.4.8.3		Electrical Cables	m³	2		
A2.4.8.4		Watermains	m³	2		
A2.5		**Stone Bedding**				
A2.5.1		Supply and place stone bedding	m³	2		
A2.5.2		Supply and lay geotextile fabric (as Kaymat U14)	m²	2		
A2.6	SABS 1200 DB	**Imported Backfill Material**				
A2.6.1	8.3.3.1	Imported backfill material from commercial sources	m³	2		
A2.6.2		Imported backfill material from designated borrow pit	m³	2		
A2.7	8.3.3.3	Compaction under roadways with G5 quality material	m³	2		
A2.8	DB 5.1.2.4	Supply and install sack breakers in trenches	N°	2		
A2.9		Build cross embankments as specified where ordered	m³	2		
A2.10	SABS 1200 DK	**Gabions and Pitching**				
A2.10.1	8.2.1 (a)	Surface preparation - cavities filled with excavated material	m²	2		
A2.10.2	8.2.2	Gabions:				
A2.10.2.1		2m x 1m x 1m boxes	m³	2		
A2.10.2.2		2m x 2m x 0,23m boxes	m³	2		
A210.3		Remove existing gabions and re-instate as directed by Engineer. Rate to include all necessary excavaion works, etc	m³	2		
A2.11	8.2.4	Geotexile where ordered	m²	1		
A2.12	8.2.5	Ordinary stone pitching	m²	1		
SUBTOTAL CARRIED FORWARD						

SUBTOTAL BROUGHT FORWARD						
A2.13	8.2.5 (a)	**Services that Intersect a Trench:**				
A2.13.1		Stormwater pipes up to 450mm dia	Nº	1		
A2.13.2		Stormwater pipes over 450mm dia and up to 900mm dia	Nº	1		
A2.13.3		Telkom cables	Nº	1		
A2.13.4		Electric cables (LT)	Nº	1		
A2.13.5		Electric cables (HT)	Nº	1		
A2.13.6		Water mains 0mm to 160mm dia	Nº	1		
A2.13.7		Water mains greater than 160mm dia	Nº	1		
A2.14	8.2.5 (b)	**Services that adjoin a Trench:**				
A2.14.1		Stormwater pipes up to 450mm dia	m	3		
A2.14.2		Stormwater pipes over 450mm dia and up to 900mm dia	m	3		
A2.14.3		Telkom cables	m	3		
A2.14.4		Electric cables (LT)	m	3		
A2.14.5		Electric cables (HT)	m	3		
A2.14.6		Water mains up to 160mm dia	m	3		
A2.14.7		Water mains greater than 160mm dia	m	3		
A2.15		Allow everything necessary for working within 1,0m from existing overhead services poles. Rate to include for supporting and maintaining pole during construction	N°	2		
A2.16	DB 8.3.5	EO Items A2.14 for excavating, backfilling, compacting and reinstating trenches parallel to and within 1,0m from: (rates to incl. for reinstating if damaged in any way by the Contractor):				
A2. 16.1		Precast concrete or brick walls (all types)	m	3		
A2.16.1		Wire fences	m	3		
A2.17		EO Items A2.13 for excavating, backfilling, compacting and reinstating trenches crossing beneath (rates to incl. for reinstating if damaged in any way by the Contractor):				
A217.1		Precast concrete fences / brick wall	N°	2		
A2.17.1		Wire fences	Nº	2		
A2.18	8.3.6.1	Remove and reinstate surfaces complete with all courses for :				
A2.18.1		Brick paved driveways	m²	2		
A2.18.2		Concrete surfaced driveways	m²	2		
A2.18.3		Bitumeninous surfaced driveways	m²	2		
A2.18.4		Bitumeninous surfaced roads 30mm thick asphalt layer on tar tack coat.	m²	2		
A2.18.5		Remove and reinstate kerbing and channelling in driveways and roadways	m	2		
SUBTOTAL CARRIED FORWARD						

SUBTOTAL BROUGHT FORWARD						
		Excavation across gravel roads				
A2.19		Selective excavation in all materials for trenches, backfill with stabilised 5% cement or G5 quality material, compact and dispose of surplus material for trenches under gravel roads for pipes up to 450mm dia (only one half of the road is to be opened at any one time) for depths :				
A2.19.1		1.0 - 1,5m	m	5		
A2.19.2		1.5 - 2,0m	m	5		
		Excavation across and along Tar Roads				
		(Rate to include for reinstating all road layers to their original thickness with approved imported granular material)				
A2.20		Selective excavate in all materials for trenches, backfill, compact or dispose of surplus/unsuitable material, for pipes up to and including 450 mm diameter (only one half of the road to be opened at any one time) for depths:				
		Over and up to				
A2.20.1		1,0m 1,5m	m	5		
A2.20.2		1,5m 2,0m	m	5		
A2.21		Extra over Item B20 for backfilling with:				
A2.21.1		G5 quality material	m^3	5		
A2.21.2		G2 quality material	m^3	5		
		Topsoiling and Grassing				
A2.22		Collect topsoil from stockpile and use in reinstatement, topsoiling and grassing to designated areas	m^2	5		
		Disposal of AC pipes				
A2.23		Disposal of AC pipes at Umdoni Sanitary Landfill site in accordance with Environmental Conservation Act 1989 (Act 73 of 1989). Rate to include for licence requirements	m	5		
TOTAL FOR SECTION B CARRIED TO SUMMARY						

	SABS 1200 LB	**SECTION A3: PIPEWORK**				
A3.1		**Provision of bedding**				
A3.1.1	8.2.1	Selected from trenches, and/or other excavations without the need for screening or other treatment:				
A3.1.1.1		Selected granular material	m³	5		
A3.1.1.2		Selected fill material	m³	5		
A3.1.2	8.2.1	Selected from trenches, and/or other excavations including for screening or other treatment:				
A3.1.2.1		Selected granular material	m³	5		
A3.1.2.2		Selected fill material	m³	5		
A3.1.3		Supply of bedding from commercial sources, where ordered				
A3.1.3.1		Selected granular material	m³	5		
A3.1.3.2		Selected fill material	m³	5		
A3.1.4	8.2.3	Concrete encasing of pipes in trenches in 20/19 concrete	m³	5		
A3.2		**Pipe Laying**				
A3.2.1	SABS 1200 L	**PVC pipes and fittings**				
		Supply, handle, lay and test uPVC pipes with Z lok joints in bedding for flexible pipes (SABS 966-1) in 6m lengths				
A3.2.1.1		**Class 16**				
A3.2.1.1.1		110mm Dia uPVC Class 16	m	5		
A3.2.1.1.2		160mm Dia uPVC Class 16	m	5		
A3.2.1.1.3		200mm dia uPVC Class 16	m	5		
A3.2.1.1.4		250mm Dia uPVC Class 16	m	5		
A3.2.1.1.5		300mm Dia uPVC Class 16	m	5		
A3.2.1.1.6		350mm Dia uPVC Class 16	m	5		
A3.2.1.1.7		400mm Dia uPVC Class 16	m	5		
A3.2.1.1.8		450mm Dia uPVC Class 16	m	5		
A3.2.1.7		E.O. item N° A3.2.1.1 for cutting pipes to length to suit				
A3.2.1.7.1		110mm to 250mm Dia.	N°	1		
A3.2.1.7.2		250mm to 450mm Dia.	N°	1		
		PVC pressure bends with Z Lok on both ends				
		Class 16				
A3.2.2		110mm Dia.				
A3.2.2.1		11¼ º - 45 º bend	N°	1		
A3.2.2.2		45º - 90º bend	N°	1		
A3.2.3		150mm Dia.				
A3.2.3.1		11¼ º - 45 º bend	N°	1		
A3.2.3.2		45º - 90º bend	N°	1		
SUBTOTAL CARRIED FORWARD						

SUBTOTAL BROUGHT FORWARD						
A3.2.4		200mm Dia.				
A3.2.4.1		11¼ º - 45 º bend	N°	1		
A3.2.4.2		45º - 90º bend	N°	1		
A3.2.5		250mm Dia.				
A3.2.5.1		11¼ º - 45 º bend	N°	1		
A3.2.5.2		45º - 90º bend	N°	1		
A3.2.6		300mm Dia.				
A3.2.6.1		11¼ º - 45 º bend	N°	1		
A3.2.6.2		45º - 90º bend	N°	1		
A3.2.7		350mm Dia.				
A3.2.7.1		11¼ º - 45 º bend	N°	1		
A3.2.7.2		45º - 90º bend	N°	1		
A3.2.8		400mm Dia.				
A3.2.8.1		11¼ º - 45 º bend	N°	1		
A3.2.8.2		45º - 90º bend	N°	1		
A3.2.9		450mm Dia.				
A3.2.9.1		11¼ º - 45 º bend	N°	1		
A3.2.9.2		45º - 90º bend	N°	1		
A3.2.10		**Z lok cast iron fittings**				
		Fittings and specials for use with PVC pipes (Flanges to SABS 1123 table 1600)				
A3.2.10.1		**C.I. Flange Adaptors:**				
A3.2.10.1.1		110mm dia	N°	1		
A3.2.10.1.2		160mm dia	N°	1		
A3.2.10.1.3		200mm dia	N°	1		
A3.2.10.1.4		250mm dia	N°	1		
A3.2.10.1.5		315mm dia	N°	1		
A3.2.10.1.6		355mm dia	N°	1		
A3.2.10.1.7		400mm dia	N°	1		
A3.2.10.1.8		450mm dia	N°	1		
A3.2.10.2		**End caps (Class 16)**				
A3.2.10.2.1		110mm	N°	1		
A3.2.10.2.2		160mm	N°	1		
A3.2.10.2.3		200mm	N°	1		
A3.2.10.3		**Reducer (Class 16)**				
A3.2.10.3.1		160 x 110mm	N°	1		
A3.2.10.3.2		160 x 110mm	N°	1		
A3.2.10.3.3		200 x 160mm	N°	1		
SUBTOTAL CARRIED FORWARD						

SUBTOTAL BROUGHT FORWARD						
A3.2.10.4		**Tees**				
A3.2.10.4.1		110 x 110mm	N°	1		
A3.2.10.4.2		160 x 160mm	N°	1		
A3.2.10.4.3		300 x 160mm	N°	1		
A3.2.10.4.4		160 x 110mm	N°	1		
A3.2.10.5		**Crosses**				
A3.2.10.5.1		110 x 110mm	N°	1		
A3.2.10.5.2		160 x 110mm	N°	1		
A3.2.10.5.3		200 x 160mm	N°	1		
A3.3		**Steel Pipes**				
		Stainless Steel Pipes and Fittings				
		Stainless steel pipework grade 304L, wall thickness 3,4 mm. All fittings to be pickled and passivated after welding (flanges to SABS 1123). Stainless steel bolts and nuts to be coated with a nickle anti-seize compound:				
		Supply, handle, lay, joint test and disinfect steel fittings and specials. Rates are to include for all bolts, nuts and gaskets and jointing materials				
A33.1		**Table 1600/3**				
A3.3.1.1		110mm dia x 6000mm long D/FL pipe	N°	1		
A3.3.1.2		150mm dia x 6000mm long D/FL pipe	N°	1		
A3.3.1.3		200mm dia x 6000mm long D/FL pipe	N°	1		
A3.3.1.4		250mm dia x 6000mm long D/FL pipe	N°	1		
A3.3.1.5		315mm dia x 6000mm long D/FL pipe	N°	1		
A3.3.1.6		355mm dia x 6000mm long D/FL pipe	N°	1		
A3.3.1.7		400mm dia x 6000mm long D/FL pipe	N°	1		
A3.3.1.8		450mm dia x 6000mm long D/FL pipe	N°	1		
A3.3.2		**Table 2500/3**				
A3.3.2.1		110mm dia x 6000mm long D/FL pipe	N°	1		
A3.3.2.2		150mm dia x 6000mm long D/FL pipe	N°	1		
A3.3.2.3		200mm dia x 6000mm long D/FL pipe	N°	1		
A3.3.2.4		250mm dia x 6000mm long D/FL pipe	N°	1		
A3.3.2.5		315mm dia x 6000mm long D/FL pipe	N°	1		
A3.3.2.6		355mm dia x 6000mm long D/FL pipe	N°	1		
A3.3.2.7		400mm dia x 6000mm long D/FL pipe	N°	1		
A3.3.2.8		450mm dia x 6000mm long D/FL pipe	N°	1		
SUBTOTAL CARRIED FORWARD						

SUBTOTAL BROUGHT FORWARD						
A3.3.3		**Bends (Table 1600/3)**				
A3.3.3.1		110mm dia				
A3.3.3.1.1		11¼°- 22½° D/FL bend, 230mm C/F - 2 segments	Nº	1		
A3.3.3.1.2		45°-90° D/FL bend 295mm C/F - 3 segments	Nº	1		
A3.3.3.2		150mm dia				
A3.3.3.2.1		11¼°- 22½° D/FL bend, 230mm C/F - 2 segments	Nº	1		
A3.3.3.2.2		45°-90° D/FL bend 295mm C/F - 3 segments	Nº	1		
A3.3.3.3		200mm dia				
A3.3.3.3.1		11¼°- 22½° D/FL bend, 230mm C/F - 2 segments	Nº	1		
A3.3.3.3.2		45°-90° D/FL bend 295mm C/F - 3 segments	Nº	1		
A3.3.3.4		250mm dia				
A3.3.3.4.1		11¼°- 22½° D/FL bend, 230mm C/F - 2 segments	Nº	1		
A3.3.3.4.2		45°-90° D/FL bend 295mm C/F - 3 segments	Nº	1		
A3.3.3.5		300mm dia				
A3.3.3.5.1		11¼°- 22½° D/FL bend, 230mm C/F - 2 segments	Nº	1		
A3.3.3.5.2		45°-90° D/FL bend 295mm C/F - 3 segments	Nº	1		
A3.3.4		**VJ Couplings (Table 1600/3)**				
A3.3.4.1		80 mm diameter VJ adaptor joints for connecting 80mm OD PE pipe	Nº	1		
A3.3.4.2		100 mm diameter VJ adaptor joints for connecting 114.3mm OD PE pipe	Nº	1		
A3.3.4.3		150 mm diameter VJ adaptor joints for connecting 163mm OD PE pipe	Nº	1		
A3.3.4.4		200 mm diameter VJ adaptor joints for connecting 219.1mm OD PE pipe	Nº	1		
SUBTOTAL CARRIED FORWARD						

SUBTOTAL BROUGHT FORWARD						
		Welded Steel Pipe (Class 25)				
A3.3.3.5		Supply, handle, lay, joint, test and disinfect steel pipes in Class C Bedding. Steel pipes to comply with SABS 719				
		Note: The steel pipes to be supplied shall have an outside diameter as detailed hereunder and wall thickness of 4,5mm. The steel pipes shall be copon lined(350 micron) internally and external fusion bonded polyethene coating (sintakote)				
A3.3.3.5.1		9.144m long bevelled-ended steel pipes (to SABS 719) with a welded jointing system. Rate to include for joint welding on site and corrosion protection of weld by denso wrapping:				
		250mm dia	N°	2		
		300mm dia	N°	2		
A3.3.3.5.2		6.1m galvanised roll grooved pipes, Tosa wrapped (as supplied by Robor pipes). Rate to include for one coupling per pipe.				
		250mm dia	N°	2		
		300mm dia	N°	2		
A3.3.3.6		**Scour Arrangement (Table 1600/3)**				
A3.3.3.6.1		200mm x 80mm FL scour tee, 375C/F	N°	2		
A3.3.3.6.2		250mm x 80mm FL scour tee, 375C/F	N°	2		
A3.3.3.6.3		150mm x 80mm FL scour tee, 375C/F	N°	2		
A3.3.3.6.4		80 mm dia x 45º FL bend, 250 mm C/F - 2 segments	N°	2		
A3.3.3.6.5		80 mm dia x 2,0 long FL/PE pipe PE threaded	N°	2		
A3.3.3.6.6		100 mm dia x 2,0 long FL/PE pipe PE threaded	N°	2		
A3.3.3.6.7		80mm dia. Screw on boss flange.	N°	2		
A3.3.3.6.8		100mm dia. Screw on boss flange.	N°	2		
A3.3.3.6.9		80 mm dia jet disperser	N°	2		
A3.3.3.6.10		100 mm dia jet disperser	N°	2		
A3.3.3.7		**Air Valve Arrangement (Table 1600/3)**				
A3.3.3.7.1		200mm x 50 mm dia FL tee, 375mm C/F	No.	2		
A3.3.3.7.2		250mm x 50 mm dia FL tee, 375mm C/F	No.	2		
A3.3.3.7.3		300mm x 50 mm dia FL tee, 375mm C/F	No.	2		
A3.3.3.7.4		50 mm dia x 0,4m long D/FL pipe	No.	2		
A3.3.3.7.5		50mm dia. Screw on boss flange.	No.	2		
A3.3.3.7.6		50mm dia. flanged double orifice air valves,class 16, (Vent-O-Mat RBX 2501 or similar approved)	No.	2		
SUBTOTAL CARRIED FORWARD						

SUBTOTAL BROUGHT FORWARD						
A3.3.3.8		**Hydrants**				
		Supply, handle, install Standard 75mm Durban Pattern Fire hydrant complete as shown on Drawing N° J071-D02				
A3.3.3.8.1		110mm Dia Flange Adaptor (Table 1600/3)	N°	2		
A3.3.3.8.2		160mm Dia Flange Adaptor (Table 1600/3)	N°	2		
A3.3.3.8.3		110mm x 75mm FL Scour Tee	N°	2		
A3.3.3.8.4		160mm x 75mm FL Scour Tee	N°	2		
A3.3.3.8.5		200mm x 75mm FL Sour Tee	N°	2		
A3.3.3.8.6		75mm Dia fire hydrant valve FL	N°	2		
A3.3.3.8.7		90° Duck foot bend x 75mm dia. D/FL steel pipe, 380mm CF	N°	2		
A3.3.3.8.8		800mm x 75mm Dia D/FL steel pipe (Table 1600/3)	N°	2		
A3.3.3.8.9		Standard hydrant Durban pattern with screw couplings	N°	2		
A3.3.3.8.10		N° 58 hinged valve box cover	N°	2		
A3.3.3.8.11		600mm x 75mm Dia D/FL steel pipe (Table 1600/3)	N°	2		
A3.3.3.8.12		250mm x 75mm Dia FL/PE steel pipe, PE end cut on site to suit and threaded (Table 1600/3)	N°	2		
A3.3.3.8.13		75mm Dia BSP threaded Boss Flange	N°	2		
A3.3.3.9		**Valves**				
		Supply, handle, lay, joint, test and disinfect valves. All valves to be SABS approved, (flanged to SABS 1123, Table 1600). Rate to include for all bolts, nuts, gaskets and jointing material				
A3.3.3.9.1		50mm dia wedge gate valve with square cap	N°	2		
A3.3.3.9.2		100mm dia wedge gate valve with square cap	N°	2		
A3.3.3.9.3		150mm dia wedge gate valve with square cap	N°	2		
A3.3.3.9.4		200mm dia wedge gate valve with square cap	N°	2		
A3.3.3.9.5		250mm dia wedge gate valve with square cap	N°	2		
A3.3.3.9.6		300mm dia wedge gate valve with square cap	N°	2		
A3.3.3.9.7		350mm dia wedge gate valve with square cap	N°	2		
A3.3.3.9.8		400mm dia wedge gate valve with square cap	N°	2		
SUBTOTAL CARRIED FORWARD						

SUBTOTAL BROUGHT FORWARD						
A3.3.3.10		**HDPE Pipes and Fittings SABS 533**				
		Supply, handle, lay and test HDPE pipes and fittings (Plasson compression fittings or similar approved)				
		Rate to include for electrofusion and butt fusion welding of pipes for diamater:				
		Pipes				
A3.3.3.10.1		32mm dia, Class 16	m	5		
A3.3.3.10.2		40mm dia, Class 16	m	5		
A3.3.3.10.3		50mm dia, Class 16	m	5		
A3.3.3.10.4		63mm dia, Class 16	m	5		
A3.3.3.10.5		75mm dia, Class 16	m	5		
A3.3.3.10.6		110mm dia, Class 16	m	5		
A3.3.3.10.7		160mm dia, Class 16	m	5		
A3.3.3.10.8		200mm dia, Class 16	m	5		
A3.3.3.10.9		250mm dia, Class 16	m	5		
		Couplings				
A3.3.3.10.10		63mm dia coupling	N°	2		
A3.3.3.10.11		63mm dia x 90° elbow	N°	2		
A3.3.3.10.12		63mm dia equal tee	N°	2		
		Saddles (Class 16)				
A3.3.3.10.13		110 mm x 1½",",N°"	N°	2		
A3.3.3.10.14		160 mm x 1½",",N°"	N°	2		
		Ferrules				
A3.3.3.10.15		25mm Dia brass ferrule to suit 110mm saddle	N°	2		
A3.3.3.10.16		25mm Dia brass ferrule to suit 160mm saddle	N°	2		
A3.3.3.10.17		40mm Dia brass ferrule to suit 110mm saddle	N°	2		
A3.3.3.10.18		32mm Dia brass ferrule to suit 110mm saddle	N°	2		
TOTAL FOR SECTION A3 CARRIED TO SUMMARY						

		SECTION A4 : SUNDRIES				
		Valve Chambers				
A4.1		Supply all materials and construct complete chambers. Pipes and fittings scheduled elsewhere				
A4.1.1		Supply and build valve box complete as shown on Drawing N° J071-D02				
A4.1.1.1		Of overall depth not exceeding 1,25m	N°	2		
A4.1.1.2		EO Item A4.1.1.1 individual precast rings as shown on Drawing N° J071-D02	N°	2		
A4.1.2		Type 3B valve box as detailed in Drawing J071-D02	N°	2		
A4.2		**Concrete**				
A4.2.1		Anchor blocks in Grade 20/19 concrete as per Drawing N° J071-D02 (incl. rough shuttering)	m³	1		
A4.3		**Marker Posts**				
A4.3.1		Supply and install marker beacons as shown on Drawing N° J070-D02 at all horizontal bends on pipeline and where ordered by the Engineer, incl. for painting twice with yellow road marking paint and concrete surround	N°	2		
A4.3.2		Supply and install LV, SV and AV marker posts as per Drawing N° J07-D02 (painted with brown marking paint) including for concrete surround	N°	2		
		Denso Protection				
A4.4		Supply and apply Denso protection to SCJ's, flanges, VJ couplings and VJ adaptor joints :				
A4.4.1.1		100-150 mm dia	N°	2		
A4.4.1.2		200-300mm dia	N°	2		
A4.5		Supply and install M-T-L MC 10 Discus 0370 padlock as supplied by Multi Locking Systems only one security key needed	N°	1		
A4.6		**Connection to Existing**				
		Connect to existing mains, rate to include for excavation, cutting into existing pipelines and dewatering pumps and removal of excess water in trenches				
A4.6.1		Up to 160mm dia	N°	1		
A4.6.2		160-250mm dia	N°	1		
A4.6.3		250-450mm dia	N°	1		
A4.8		**Provisional Sums**				
A4.8.1		Provisional sum for miscellaneous works as identified by the Engineer/WRM Manager on site	Sum	1		100 000.00
SUBTOTAL CARRIED FORWARD						

SUBTOTAL BROUGHT FORWARD						
A4.8.2		Replacement of brackets on steel pipes installed across bridges	Sum	1		250 000,00
A49		**Concrete Sleeve Pipe at Road Crossings**				
A4.9.1		Supply, handle and lay in Class C bedding Class 100D concrete pipes with Ogee joints at road crossings				
		450 mm dia	m	2		
		300 mm dia	m	2		
A4.9.2		EO Item D9.1 for bricking up ends including building drains as shown on Drawing No.J071-D02	No.	2		
A4.9.3		Supply and install sleds for pipes inside concrete sleeve as shown on Drawing No.J071-D02 for dia:				
A4.9.3.1		100mm dia	No.	1		
A4.9.3.2		150mm dia	No.	1		
A4.9.3.3		200mm dia	No.	1		
TOTAL FOR SECTION A4 CARRIED TO SUMMARY						

		SECTION A5: DAYWORKS SCHEDULE				
A5.1		**Labour**				
A5.1.1		Plumber	hrs	2		
A5.1.2		Foreman	hrs	2		
A5.1.3		Bricklayer	hrs	2		
A5.1.4		Carpenter	hrs	2		
A5.1.5		General labour	hrs	2		
A5.1.6		Watchmen	hrs	2		
A5.2		**Plant**				
A5.2.1		Plate compactor	hrs	2		
A5.2.2		Dewatering pump	hrs	2		
A5.2.3		Generator	hrs	2		
A5.2.4		Front End Loader/TLB	hrs	2		
A5.2.5		Excavator	hrs	2		
A5.2.6		Tipper Truck	hrs	2		
A5.3		**Materials**				
A5.3.1		19mm stone	m^3	2		
A5.3.2		River sand	m^3	2		
A5.3.3		190mm Thick blockwork	m^2	2		
A5.3.4		Cement	Bag	2		
TOTAL SECTION A5 CARRIED FORWARD TO SUMMARY						

UGU DISTRICT MUNICIPALITY

PIPELINE REPLACEMENT PROGRAMME - ACROSS UGU DISTRICT MUNICIPALITY
CONTRACT UGU-07-1628-2023
REPLACEMENT & REFURBISHMENT OF PLANNED REPLACEMENT OF BULK AND RETICULATION PIPELINES AND MISCELLANEOUS WORKS FOR A PERIOD OF THIRTY-SIX (36) MONTHS

SCHEDULE OF QUANTITIES SUMMARY

Section	**Description**	**Amount**
Section A1	Preliminary and General	
Section A2	Earthworks	
Section A3	Pipework	
Section A4	Sundries	
Section A5	Dayworks	

Subtotal	
Add: 10% Contingencies allowance	
Subtotal	
Add: 7% Escalation Year 1	
Subtotal	
Add: 7% Escalation Year 2	
Subtotal	
Add: 7% Escalation Year 3	
Subtotal	
Add: 15% VAT	
TOTAL	

Ugu District Municipality

VOLUME 1

CONTRACT

PART C3:

SCOPE OF WORKS

C3: SCOPE OF WORK

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C3.1: DESCRIPTION OF WORKS

C3 SCOPE OF WORK

C3.1 Description of the Works

C3.1.1 Employer's Objectives

Ugu District Municipality as Water Services Authority (WSA) and Water Services Provider (WSP) is responsible for the provision of adequate, reliable and safe water supplies and sanitation to the entire Ugu Region.

A number of the older residential areas have water network pipelines that are AC (asbestos cement) or GI (galvanized iron). Many of these pipelines have degraded faster than anticipated and are experiencing frequent bursts and numerous smaller leaks. In addition the GI pipes typically have a very high roughness factor resulting in significant losses of pressure.

The Employer's objective is to replace water infrastructure in strategically across the Ugu District Municipality water networks/systems.

C3.1.2 Overview of the Works

Ugu District Municipality incorporating the water supply networks are existing predominately residential areas which were originally provided with a water network of mainly AC and GI pipelines. These pipelines have degraded due to a combination of their age, the soil conditions and the corrosive coastal environment and frequent burst and numerous smaller leaks are common. Ugu District Municipality wishes to replace the water network with mPVC Class 16 pipes in order to reduce the leakage and subsequently the NRW. In addition it will reduce the burden on the operation and maintenance teams. These replacements should also increase the level of service to some highlying properties who currently experience low pressure due to the highly corroded pipes. The new pipelines will be sized to accommodate flow for firefighting purposes.

In line with the Employer's objective of reducing NRW, areas will be zoned into DMA (district metred areas) and the pressure in these DMA's will be controlled by PRV's (pressure reducing valves).

The project is being implemented in phases over 3-year stages in line with funding availability and successful tenderer/s will be deployed to respective areas to replace aged pipelines over this 3-yr period.

Under this Contract UGU-07-1628-2023 Ugu District Municipality is inviting tenders for the excavation and installation of water pipelines and associated works

The quantities entered in the Schedule of Quantities for the construction of the Works are only provisional and the Works are to be carried out at scheduled rates wherever applicable, whether or not provisional quantities have been allowed under the relevant items. In the event of any work, being required which is not covered by specific price rates; it shall be carried out at agreed rates in keeping with the general scheduled rates or on a Day Work basis, as may be ordered by the Employer's Agent.

The Contractor will be responsible for maintaining a photographic survey of all work areas and for restoring on completion of the contract, all areas affected by the works to their condition found at the commencement of the Contract. This includes all driveways, street furniture, verges and boundary fences, hedges or walls. Items have been scheduled in the Schedule of Quantities for the repair of sealed and paved driveways and for fences, hedges and walls. The cost of preserving or removing and replacing street signs, free standing post boxes and other street furniture shall be deemed to have been included in the Contractor's prices.

Tenders are required to allow in their tender prices for supply and use of tools, the provision, operation and maintenance of all contractors plant and equipment, the supply and supervision of all labour and workmanship and every service necessary for the construction, completion and maintenance of Works in the manner required by the contract to the entire satisfaction of the Employer's Agent.

C3.1.3 Extent of the Works

The works will include the replacement of all water network pipelines and appurtances in the project area. It will also include the replacement of all consumers connections up to and including their water meters.

This contract comprises the following:

(a) Trenching, laying and jointing of 75 / 110 / 160 / 200 / 250 / 315 mm diameter mPVC Class 16 water pipelines.

(b) Trenching, laying and jointing of 15-63 mm diameter HDPE PE100 Class 16 water pipelines.

(c) Installation of valves, fire hydrants and other appurtenances.

(d) Construction of associated manholes and sundry items.

(e) Testing of all water pipelines.

(f) Reinstatement of roads, pavements, kerbs, walls, fences and driveways removed during excavation works.

(g) Water connections including water meters in pillar style meter boxes.

Water Mains

The pipeline routes for water mains are, as far as possible, located alongside existing roads and are, therefore, largely accessible by road. The pipeline routes follow the topography and largely run alongside the access roads and are laid in some areas of steep cross fall. In some areas, pipelines are constructed close to existing dwellings and structures.

Water Connections

The construction work associated with the consumer connections will entail the laying of pipes connecting the newly laid water mains to a new household connection. A water meter will be provided for each connection. A typical water connection is shown on Drawing N° STD 48.

C3.1.4 Location of the Works

The location of the site is shown on Drawing Nº s MD1987 / P11-P13. The proposed water mains and details will be determined once successful contractor/s have been identified and as-and-when funds become available.

C3.1.5 Temporary Works

The Contractor is to allow for all temporary works required for this Contract.

C3.2: ENGINEERING

C3.2 Engineering

C3.2.1 Design services and activity matrix

The responsibilities for design and documentation are identified below:

Description	Responsible Party
Concept, feasibility and overall process	Employer
Temporary works	Contractor
Survey of route deviation	Contractor

C3.2.2 Employer's design

The employer is responsible for the design of permanent works.

C3.2.3 Drawings

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

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

At commencement of the contract, the Employer/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/ 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 following drawings are applicable to the Contract:

Drawing Number	Title
MD 1987 / P 11	LAYOUT PLAN – UGU DM on availability or operation team make physical verification on each project pipeline replacement
MD 1987 / P 12	LAYOUT PLAN – UGU DM on availability or operation team make physical verification on each project pipeline replacement
MD 1987 / P 13	LAYOUT PLAN – UGU DM on availability or operation team make physical verification on each project pipeline replacement
W01.PZB.0199-02-040	STANDARD DETAILS
W01.PZB.0199-02-041	STANDARD DETAILS
W01.PZB.0199-02-042	STANDARD DETAILS

C3.3: PROCUREMENT

C3.3 Procurement

C3.3.1 Preferential procurement procedures

C3.3.1.1 Requirements

The conditions associated with the granting of preferences, if any, and the sanctions relating to a breach of preferencing conditions are contained in the Tender Data.

C3.3.1.2 Resource standard pertaining to targeted procurement

The Employer has determined that 100% of the Contractor's unskilled labour force shall be made up from the local Municipality. It is a requirement that tenderers acquaint themselves fully with the requirements for registration with the Unemployment Insurance Fund.

The Employer requires that the successful contractor registers all labour required with the Unemployment Insurance Fund. The local labour rate has been determined at R22.10 per hour up to a maximum of 9 hours per day. The task for excavation by hand has been agreed at 2,4 m³/day (e.g. ie 0,9 m wide x 1,2 m deep x 2,2 m long). A task for backfilling by hand may be agreed at 7,0 m³/day (e.g. 0,9 x 0,8 x 9.7m long).

Tenderers are to note that the rate of R22.10 per hour is inclusive of a 1% UIF contribution.

No electronic transfers will be allowed for the payment of labour.

C3.3.2 Subcontracting

C3.3.2.1 Scope of subcontract work

Should the Tenderer wish to employ Sub-Contractors for part of the works, this is to be clearly indicated, and the schedule in this document is to be completed to indicate the full names and addresses of all proposed Sub-Contractors for which approval of the Employer's Agent is sought, stating the section of the works that each will be handling.

In respect of the work carried out or the goods that are the subject of the sub-contract, the
Sub-Contractor undertakes to the Contractor mutatis and mutandis the obligations and liabilities as are imposed upon the Contractor to the Employer in terms of the Contract, and holds the Contractor harmless from and indemnifies him against the same and in respect of all claims, demands, lawsuits, damages, costs, charges and expenses whatsoever arising out of or in connection therewith, or arising out of or in connection with any failure to perform such obligations or to fulfil such liabilities, and

The Sub-Contractor shall also hold the Contractor harmless from and indemnify him against.

- Shortcomings in the sub-contract work if and where the work was designed by the Sub-Contractor;

- Defects in the goods if and where the goods were manufactured and / or supplied by the Sub-Contractor;
- Any negligence by the Sub-Contractor, his/her Agents, workmen and servants;
- Any misuse by the Sub-Contractor, his/her Agents, workmen and servants;
- Any misuse by the Sub-Contractor of any Constructional Plant, Temporary Works or
- Materials provided by the Contractor for the purpose of the Contract; and
- Any claims as aforesaid.

C3.4: CONSTRUCTION

C3.4 Construction

C3.4.1 Works Specifications

C3.4.1.1 Applicable Specifications

The standard specifications on which this contract is based are those included in C3.6 of the Scope of Work.

C3.4.1.2 Applicable national and international standards

The standard specifications on which this contract is based are the South African Bureau of Standards Standardised Specifications for Civil Engineering Construction SABS 1200.

C3.4.1.3 Particular / generic specifications

The particular specifications are included as C3.8 and take precedence over the Standard Specifications, but not over the Project Specifications.

C3.4.1.4 Certification by Recognised Bodies

Wherever possible items and materials for construction of the works shall comply with the relevant South African Bureau of Standards Specifications and with the British Standards where these are applicable in the absence of local standards.

The Contractor, when using materials conforming to a Standard Specification shall if called upon furnish the Employer's Agent with certificates of tests showing that the materials do so conform.

C3.4.2 Plant and Materials

No plant or materials will be supplied by the Employer under this contract.

C3.4.3 Construction equipment

No construction equipment will be supplied by the Employer under this Contract. All construction equipment required for the completion of the works shall be provided by the Contractor.

C3.4.4 Existing services

C3.4.4.1 Known services

The approximate positions of some of the known underground services, which may be affected by the Works, have been shown on the drawings. The Contractor will be required to contact all service owners and ascertain the location and status of all services irrespective of whether they are shown on the drawing or not.

C3.4.4.2 Damage to services

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

C3.4.5 Site Establishment

C3.4.5.1 Services and Facilities Provided by the Employer

C3.4.5.1.1 Water

The Contractor shall make his own arrangements concerning the supply of water.

C3.4.5.1.2 Electricity

The Contractor shall make his own arrangements concerning the supply of power. The Contractor will also be required to make his own arrangements and pay all the requisite connection and consumption charges for whatever temporary power supplies he may require for his use on the site. No direct payment will be made for the provision of power. The cost thereof shall be deemed to be included in the rates and amounts tendered for the various items of work for which this service is required, or in the Contractor's preliminary and general items as the case may be.

C3.4.5.1.3 Telecommunication services

The Contractor is to provide his own telephone facilities on site. No telephone will be required for the use of the Employer's Agent or Employer's Agent's Representative for the duration of the Contract. An item has been included in the Bill of Quantities to cover the costs of the Employer's Agent or Employer's Agent's Representative cellular phone calls.

C3.4.5.2 Facilities Provided by the Contractor

The Contractor will be permitted to locate his offices, storage facilities, workshops, latrines, etc., on a site indicated by the Employer's Agent. Temporary buildings and fencing are to be neat and presentable and the surrounding areas must at all times be kept in a neat, clean and orderly condition. The Contractor shall provide and maintain at his own cost all sheds and housing of a temporary nature necessary for the convenience of his workmen and for the accommodation and proper protection of his erection or other equipment from damage or loss. These are to be erected only on sites which shall have been approved by the Employer's Agent and they shall be removed as soon as their necessity and the site thereof restored to its original condition and the ground left clean and sanitary. The Contractor must not cut down or damage any trees nor make any excavation without the written permission of the Employer's Agent and will be required to restore the site to its original condition on completion of the works.

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

No housing is available for the Contractor's employees and the Contractor shall make his own arrangements to house his employees and to transport them to site. No informal housing or squatting will be allowed.

The Contractor shall provide the necessary ablution facilities at his camp site and the site of the works for the use of his employees. Chemical toilets only will be allowed where temporary facilities have to be provided. Toilet facilities shall be available for the use of the Employer's Agent or Employer's Agent's Representative(s). All latrines shall be placed where directed by the Employer's Agent.

All sanitary fees and charges due under the Local Authority or State Health Regulations or bylaws shall be paid by the Contractor. Throughout the progress of the Contract, all latrines shall be maintained by the Contractor in a clean, sanitary condition to the satisfaction of the Employer's Agent.

The Contractor shall provide security watchmen to safeguard the works, plant, personnel and materials for the contract as he deems fit at no extra cost for the Employer. The Contractor must ensure that all his employees as well as the employees of his subcontractors are able to identify themselves as members of the construction team. No employees except for security guards will be allowed to sleep or be accommodated on the site.

The Contractor shall pay special attention to the management and disposal of all water on site from whatever source. It is essential that all completed works or parts thereof are kept dry and properly drained. Claims for delay and for repair of damage caused to the works as a result of the Contractor's failure to properly manage rain and surface water, will not be considered.
The Contractor shall dispose all surplus and unsuitable material in legal spoil areas of his own choice. He shall be responsible for all arrangements necessary to obtain access to such spoil sites.

C3.4.5.3 Storage and laboratory facilities

No storage facilities will be available or provided by the Employer and the Contractor is to make suitable arrangements to deliver materials as and when required for erection purposes and when called for by the Employer's Agent, whether such call be issued on or after the delivery date offered by the Tenderer.

C3.4.5.4 Vehicles and equipment

No vehicles will be required for use by the Employer or his Representative.

C3.4.6 Permits and way leaves

The Employer will obtain the necessary approvals and the Contractor will be required to comply with the authorities and landowners' / occupiers' requirements at all times.

The Contractor will be required to take cognisance of, and comply with, the general wayleave and 'permission to occupy' requirements of the authorities and land owners / occupiers during the construction of the works.

C3.4.7 Water for construction purposes

The Contractor shall make his own arrangements for water for construction purposes as there is scarce potable water supply available.

C3.4.8 Survey control and setting out of the works

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

C3.5: MANAGEMENT

C3.5 Management

C3.5.1 Management of the works

C3.5.1.1 Applicable SANS 1921 Specifications

The following SANS 1921 Construction and Management requirements for works standards and associated specification data are applicable:

SANS 1921-1	General engineering and construction works
SANS 1921-2	Accommodation of Traffic on Public Roads
SANS 1921-6	HIV/AIDS Awareness

The specification data applicable to these SANS 1921 standards is as follows:

Standard	Clause	Specification Data
SANS 1921-1		**Essential Data**
	4.1.7	The requirements for drawings, information and calculations for which the Contractor is to be responsible is detailed in the project specifications.
	4.2.1	The responsibility strategy assigned to the Contractor for the works is A.
	4.2.2	The water/reticulation engineer for the pipelines and valve chambers is Ugu District Municipality – Water Services.
	4.3	The planning, programme and method statements are to comply with the following: 1) The programme shall be prepared in bar (Gantt) chart form, preferably using a project management software tool such as *Microsoft Projects/Excel* and shall be issued to the Employer's Agent in both hard copy and electronic format. The programme shall be structured to cover all items of work conceivable including all work to be done by sub-contractors and shall clearly indicate the critical path 2) The programme must clearly show the intermediate milestone dates to be achieved taking the indicative construction sequences into account. Method statements shall be prepared in accordance with the requirements of the project specifications.
	4.4	The Contractor will be solely responsible for the production of work that complies with the Specifications to the satisfaction of the Employer's Agent. To this end it will be the full responsibility of the Contractor to institute an appropriate Quality Assurance (QA) system on site. The Employer's Agent will audit the Contractor's quality assurance (QA) system on a regular basis to verify that adequate independent checks and tests are being carried out and to ensure

Standard	Clause	Specification Data
		that the Contractor's own control is sufficient to identify any possible quality problems which could cause a delay or failure. The Contractor shall ensure that efficient supervisory staff, the required transport, instruments, equipment and tools are available to control the quality of his own workmanship in accordance with his QA system. His attention is drawn to the fact that it is not the duty of the Employer's Agent or the Employer's Agent's Representative to act as foreman or surveyor.
	4.5	The Contractor will be required to verify the accuracy of all survey control provided on the drawings or in the form of beacons previously placed on the site. Prior to setting out, the Contractor shall also check the invert levels of all existing tie-in channels, manholes, pipes etc. against those provided on drawings and immediately report any inconsistencies to the Employer's Agent in writing. The Contractor shall be held directly responsible for any errors in setting out of the works arising from use of the survey control or existing invert levels provided. It is important that, during construction, the Contractor checks all levels from time to time and satisfies himself as to their accuracy prior to placing of concrete as no concrete work will be accepted where tolerances have been exceeded, particularly where it interferes with the hydraulics of the flow through the works.
	4.5.1	The maintenance of graveled temporary deviations and existing gravel roads used for construction shall include the watering of roads daily in the dry season for reduction of dust.
	4.6	An item has been included in the Schedule of Quantities to cover all work in dealing with water.
	4.12.2	The samples of materials, workmanship and finishes that the contractor is to provide and deliver to the Employer are: 1) Pipe bedding materials 2) Pipeline fitting materials 3) Pipe blanket materials 4) Sand breakers 5) Compaction test results 6) Valve chambers
	4.14.3	The office accommodation, equipment, accommodation for site meetings and other facilities for use by the employer and his agents are: 1) Site offices as per SABS 1200 AB (refer PSAB). 2) Meeting room, minimum floor area 30 square metres. 3) One covered and one uncovered parking bay. 4) Safety helmets, gumboots and other necessary safety equipment for the sole use of the employer and his agents 5) Survey equipment as per PSAB 4.2

Standard	Clause	Specification Data
		6) No testing laboratory is required on site for use by the Employer's Agent
	4.14.5	Toilet facilities are required for the Employer and his agents.
	4.14.6	The requirements for the provision and erection of sign boards are: 1) As per SABS 1200 AB and C4.
	4.17.2	Where public services must be interrupted on account of the works, it shall be the Contractor's responsibility, in conjunction with the appropriate Authority to ensure that all users affected by the interruption are given due and sufficient notice of the date, time and duration of the interruption.
	4.17.3	The approximate positions of some of the known underground services, which may be affected by the Works, have been shown on the drawings. The exact location or number or existence of these services cannot be guaranteed and the Contractor will be required to confirm the locations and status of all services with all service owners irrespective of whether they are shown on the drawing or not.
	4.17.4	The requirements for detection apparatus are: Nil Where services are found the Employer's Agent must be notified immediately so that a decision can be made regarding re-alignment, relocation or protection of said services. The Contractor shall on no account effect such adjustments without the prior consent of the Employer's Agent.
	4.17.5	If unknown services are found undamaged, they shall then be deemed to be known services with the provisions pertaining to known services becoming applicable.
	4.17.6	Where a service has been located and exposed, the Contractor shall take every care in ensuring that the excavation containing the service is barricaded and protected against collapse and that the service is adequately protected against damage. Should the existing service become damaged by the Contractor or any third party due to negligence on part of the Contractor, then the cost of its repair along with any consequential costs shall be borne by the Contractor.
	4.17.7	Existing known services or services that have been proved by the Contractor, which are damaged by the Contractor, shall be repaired by the service provider and all costs of the repair shall be borne by the Contractor.
	4.18	The additional health and safety requirements of the Employer are as specified in the health and safety specification included in the tender document.
	4.22	The work to be undertaken by selected subcontractors comprises the supply and installation of lightning protection.

Standard	Clause	Specification Data
SANS 1921-1		**Variations**
	4.1.10	Where reference is made to "SANS 2001", substitute with "SABS 1200"
SANS 1921-1		**Additional Clauses**
	4.6 (e)	The Contractor is to ensure that stormwater runoff or any groundwater seepage is controlled by means of temporary earthworks, cofferdams, pumping equipment, well-pointing, de-watering equipment etc. to keep the works free of water
	4.6 (f)	Dealing with all water during construction from whatever source will include for by-pass arrangements for dealing with all possible flows whether or not the existing flow path is being interfered with during installation of pipework.
	4.7.4	No blasting will be permitted within 10 m of any structure, pipeline or service unless the Contractor can satisfy the Employer's Agent that his proposed blasting methods and controls are such that no damage will be caused to the adjoining structure, pipeline or service. The Contractor will be required to provide equipment for and take vibro-recordings at no additional cost to the Employer.
	4.8.1	The Contractor shall be responsible for protection from damage to any structures or services that might be affected by the excavations or works.
	4.8.2	Notwithstanding whatsoever special construction methods, equipment or materials are used by the Contractor to protect the structure or service from damage, all work will be measured for payment on the assumption that normal excavation had been carried out and the Contractor shall therefore make allowance for the additional costs in his tendered rates.
	4.9.6	The provision of security for the Contractor's site establishment, plant and personnel at all times is sole responsibility of the Contractor and no claims for payment for additional security measures taken during the contract will be entertained.
	4.17.8	The Contractor shall so carry out all his operations as not to encroach on, or interfere with, trespass on, or damage adjoining land, buildings, properties, road structures, pipelines, places and things, in the vicinity of the Works and outside of the site boundary.
SANS 1921-6		**Essential Data**
	4.2.1 a)	A qualified service provider is one that appears on the list of recommended service providers, which is available from all regional offices of the Department of Public Works.
	4.2.1 a)	The HIV / AIDS awareness programme is to be repeated at 6 monthly intervals for the duration of the Contract (including the initial

Standard	Clause	Specification Data
		one at the start of the Contract).
SANS 1921-6		**Variations**
	4.3.2	The HIV/AIDS Awareness Champion and the Employer's representative shall certify the report and schedule described in 4.3.1 whenever a claim for payment is issued to the Employer.
SANS 1921-1		**Additional Clauses**
	1 f)	Appointment of an HIV / AIDS Awareness Champion.
	4.1 f)	Appointing an HIV/ AIDS Awareness Champion within 14 days of site handover from amongst the workers (which could include the Community Liaison Officer). The champion should be able to speak, read and write English, speak and understand the local languages spoken by the Workers and shall be on site at all stages of the construction period. The Contractor shall ensure that the Awareness Champion has been trained by the Service Provider on basic HIV/AIDS information, the support services available and has the necessary skills to handle questions regarding the HIV/AIDS programme in a sensitive and confidential manner. The Awareness Champion shall be responsible for: • Liaising with the Service Provider to assist in organizing awareness workshops • Filling condom dispensers and monitoring condom distribution • Handing out information booklets • Placing and maintaining posters
	4.1 h)	Provide information about the names of the closest service providers to be displayed on a poster of size not smaller than A2.
	4.2.3 c)	Understand and communicate the purpose of voluntary HIV/AIDS testing and counselling.
	4.2.3 d)	Recognize the importance of caring for people living with HIV/AIDS and be familiar with the various treatments available, including treatment of opportunistic infections.
	4.2.3 e)	Understand and communicate the rights and responsibilities of those living with HIV/AIDS in the workplace and the importance of non-discrimination.
	5	**Sanctions** In the event that the Contractor fails to satisfy the requirements of this specification, the Employer may apply sanctions which include the rejection of claims for payment as being incomplete or the withholding of completion certificates (interim or final).

C3.5.1.2 Planning and programming

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

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

- Delays due to abnormal weather conditions. The number of days per month on which work is expected not to be possible as a result of abnormal rainfall, and for which the Contractor shall make provision in his tendered rates, prices and programme is shown in Section C4.2.

- Special non-working days as specified in the Special Conditions of Contract, in the Project Specifications and in the Contract Data.

C3.5.1.3 Sequence of the works

The Contractor can choose his own sequence of works for the Construction of the permanent works taking into consideration the need to maintain open access to private properties and continuous traffic flow along Marine Drive.

C3.5.1.4 Software application for programming

The programme is to show critical path activities and shall be submitted in hard copy and Excel Format (*.xls) / Projects Format(*.mpp).

C3.5.1.5 Quality plans and control

The Contractor will be solely responsible for the production of work that complies with the Specifications to the satisfaction of the Employer's Agent. To this end it will be the full responsibility of the Contractor to institute an appropriate Quality Assurance (QA) system on site. The Employer's Agent will audit the Contractor's quality assurance (QA) system on a regular basis to verify that adequate independent checks and tests are being carried out and to ensure that the Contractor's own control is sufficient to identify any possible quality problems which could cause a delay or failure.

The Contractor shall ensure that efficient supervisory staff, the required transport, instruments, equipment and tools are available to control the quality of his own workmanship in accordance with his QA-system. His attention is drawn to the fact that it is not the duty of the Employer's Agent or the Employer's Agent's representative to act as foreman or surveyor.

C3.5.1.6 Environment

(Read with SANS 1921 - 1: 2004 clause 4.19 and the Environment Particular Specification and the Environmental Management Plan

The Contractor shall pay special attention to the following:

(a) Clearing of Vegetation

The Contractor shall not destroy, remove or clear trees, timber or shrub to any extent greater than that approved. The Contractor shall not carry out any activity outside the areas defined for clearing unless otherwise approved by the Environmental Control Officer.

(b) Soil Erosion

The quality of topsoil in stockpiles will be maintained by measures including contamination from other materials, minimizing stockpiling periods and prevention of soil erosion by surface runoff or wind. Monitoring for erosion and soil erosion risk will be undertaken regularly to ensure that any erosion that occurs is mitigated as soon as possible.

(c) Risk of Faunal Injury and Death

The trenches will be kept open for the minimum period necessary to undertake the works. Temporary fencing or barriers will be placed along the trenches in areas that are likely to be used as corridors i.e. linkages between bushes where possible along the corridor.

(d) Pollution Prevention

With particular regard to Sanitation, Solid Waste Facilities, Fuels, Hazardous Substances and other Liquid Pollutants as elaborated in the Particular Specification for Environmental Management.

(e) Rehabilitation

The Contractor is to ensure that the site and its surrounds are rehabilitated to the condition in which they were prior to commencement of construction activities.

(f) Working in watercourses

Cofferdams shall be constructed around trenched areas in watercourses using sealed plastic bags filled with sand. The flow of rivers is not to be restricted.

C3.5.1.7 Accommodation of traffic on public roads occupied by the Contractor

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

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

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

Failure to maintain road signs, warning signs or flicker lights, etc, in a good condition shall constitute ample reason for the Employer's Agent to suspend the work until the road signs, etc, have been repaired to his satisfaction. The Contractor may not commence constructional activities affecting existing roads before adequate provision

has been made to accommodate traffic in accordance with the requirements of this document and the South African Road Traffic Signs Manual.

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

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

Where warranted by traffic conditions on or near the site, the Contractor shall nominate a suitable member of his staff as traffic safety officer to be responsible for the arrangement and maintenance of all the measures for the accommodation of traffic for the duration of the project. Duties of the traffic safety officer shall be as set out in SANS 1921 Part 2 and shall also be in compliance with the Occupational Health and Safety Act No 85 of 1993 and the Construction Regulations 2003, including the Particular Safety Specification.

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

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

C3.5.1.8 Testing, completion, commissioning and correction of defects

Process control

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

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

Acceptance control

The process control test results submitted by the Contractor for approval of materials and workmanship may be used by the Employer's Agent for acceptance control. However, before accepting any work, the Employer's Agent may have further control tests carried out by a laboratory of his choice. The cost of such additional tests will be paid for in the contract, but tests that failed to confirm compliance with the specifications, will be for the account of the Contractor.

C3.5.1.9 Recording of weather

The Contractor shall be permitted to take his own rainfall measurements on site subject to the Employer's Agent's approval, but access to the measuring gauge(s) shall be under the Employer's Agent's control. The Contractor is to provide and install all the necessary equipment for accurately measuring the rainfall as well as to provide, erect

and maintain a security fence plus gate, padlock and keys at each measuring station, all at his own cost.

C3.5.1.10 Management meetings

The Contractor and such other persons as may be nominated by the Employer's Agent shall be required to attend periodic site meetings, the date and place for which will be set by the Employer's Agent in consultation with the Employer and Contractor.

The main purpose of the site meetings will be to review and discuss progress and programme, and all persons attending the site meetings must be empowered to act on behalf of the organisations they represent.

C3.5.1.11 Daily records

The Contractor is to provide a triplicate site diary book, which is to be kept on site, for the purpose of keeping daily records in respect of work performed on the site and all significant events. The Employer's Agent's Representative will keep the top copy on his records and the Contractor will take the middle copy and the third copy will remain in the site diary book which will be kept on site for the duration of the Contract.

C3.5.1.12 Bonds and guarantees

If the Tenderer, when notified of the acceptance of his tender, fails to provide a guarantee within the period stipulated in the Contract Data and the Employer elects to cancel the Contract on that ground, the Employer may demand a sum of R50 000,00 or, alternatively, the Employer may take other action whether by way of a claim for loss or damage suffered by the Employer arising out of such breach.

C3.5.1.13 Payment certificates

Determination of Method of Excavation

Trenches for pipelines shall be excavated by either mechanical means or by hand, determined as follows:

Trial holes of minimum dimensions 1,0 x 1,0 m shall be excavated by hand along all pipeline routes at 50 m intervals ahead of the Contractor's programme. The trial holes shall be 800 mm deep or less if intermediate or hard rock material is encountered. An item has been included in the Schedule of Quantities to cover this work.

If intermediate or hard rock material is encountered in the top 800 mm of excavation at such trial holes, then excavation may be deemed to be carried out by mechanical means, the length of such excavation determined on the basis of other trial hole findings.

If soft material only is encountered at such trial holes, then excavation may be deemed to be carried out by hand, the length of such excavation determined on the basis of other trial hole findings.

If intermediate or hard rock material is encountered in those stretches set aside for hand excavation on the basis of the trial hole findings, then the Contractor may be allowed to remove the intermediate or hard rock material by mechanical or whatever means, the rate for which is to include for backfilling and re-excavating (if necessary).

Overhaul

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

C3.5.2 Health and safety

C3.5.2.1 Health and safety requirements and procedures

C3.5.2.1.1 General statement

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It is a requirement of this contract that the Contractor shall provide a safe and healthy working environment and to direct all his activities in such a manner that his employees and any other persons, who may be directly affected by his activities, are not exposed to hazards to their health and safety. To this end the Contractor shall assume full responsibility to conform to all the provisions of the Occupational Health and Safety Act No 85 and Amendment Act No 181 of 1993, and the OHSA 1993 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 and employer in his own right for the execution of the contract by entering into an agreement with the Employer in terms of the Occupational Health and Safety Act by executing the Agreement form C1.5 included in Section C1: Agreements and Contract Data.

C3.5.2.1.2 Health and Safety Specifications and Plans to be submitted at tender stage

(a) Employer's Health and Safety Specification

The Employer's Health and Safety Specification is included in this document as part of the Particular Specifications.

Contractors are to take note of the aspects identified in the specification requiring attention in the pricing of the tender and in the preparation of the H&S Plan:

(b) Tenderer's Health and Safety Plan

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

(i) a proper risk assessment of the works, risk items, work methods and procedures in terms of Regulations 9 to 30;
(ii) pro-active identification of potential hazards and unsafe working conditions;
(iii) provision of a safe working environment and equipment;
(iv) statements of methods to ensure the health and safety of subcontractors, employees and visitors to the site, including safety training in hazards and risk areas (Regulation 7);
(v) monitoring health and safety on the site of works on a regular basis, and keeping of records and registers as provided for in the Construction Regulations;

(vi) details of the Construction Supervisor, the Construction Safety Officers and other competent persons he intends to appoint for the construction works in terms of Regulation 6 and other applicable regulations; and
(vii) details of methods to ensure that his Health and Safety Plan is carried out effectively in accordance with the Construction Regulations 2014.

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

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

C3.5.2.1.3 Cost of compliance with the OHSA Construction Regulations

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

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

C3.5.2.2 Aids awareness

Service Provider

The Contractor shall engage a qualified service provider (i.e. one that appears on the list of recommended service providers, which is available from all regional offices of the Department of Public Works) to conduct an HIV / AIDS Awareness programme.

The HIV / AIDS awareness programme is to be repeated at 6 monthly intervals for the duration of the Contract (including the initial one at the start of the Contract).

Sanctions

In the event that the contractor fails to satisfy the requirements of this specification, the employer may apply sanctions which include the rejection of claims for payment as being incomplete or the withholding of completion certificates (interim or final).

C3.6: STANDARD SPECIFICATION

C3.6 Standard Specifications

C3.6.1 Standard Specifications

INTRODUCTION

The Standard Specification gives a general description of the requirements to be met and sets out the relevant specifications relevant to the Contract as well as other relevant and additional clauses. In certain clauses the standard specifications allow a choice to be specified in the project specifications between alternative materials or methods of construction and for additional requirements to be specified to suit a particular contract. Details of such alternative or additional requirements applicable to this contract are contained in the project specifications.

C3.6.2 General

All materials, and components used in the manufacture and fabrication of plant to be supplied under this Contract, shall be the best quality and suitable for the purposes for which they are intended.

C3.6.3 Quality Management

C3.6.3.1 Applicable Quality Assurance Standards

The Tenderer shall provide a co-ordinated and formally documented statement of his quality management system, including quality management objectives, policies, organisation and procedures, for the compulsory implementation of SABS 0157, Code of Practice for Quality Management Systems, Part III. The same applies to Part II of the said Code of Practice which must be implemented on certain selected items only. However, although Part II will not be implemented in all instances it will not exempt the Contractor of compliance with the quality requirements laid down in the tender documents. Monitoring and control by the Employer's Agent may be done at any time on any material.

The Contractor shall submit with his tender an assessment report on his quality management and quality control system issued by an independent Quality Assurance Authority approved by the Employer's Agent. The inspection on which this assessment report is based shall have taken place not more than 12 months prior to the closing date for this tender.

Responsibility for and all associated costs of compliance with this sub-clause shall rest with the Contractor.

C3.6.3.2 Quality Assurance Enhancement

Should the Contractor or any of the proposed sub-contractors not comply with Sub-Clause C3.6.3.1 at the time of tender, a Contract may be awarded subject to a written undertaking to enhance his own and/or Sub-Contractor's quality assurance system to the satisfaction of the Employer's Agent before commencement of the contract.

C3.6.3.3 Quality Assurance Staff

The Contractor shall satisfy the Employer's Agent that a quality specialist together with sufficient and suitably qualified staff will be assigned to control the quality of the material used by each sub-contractor engaged in the supply of critical and major components and sub-assemblies.

C3.6.3.4 Employer's Agent's Quality Assurance Representative/Inspector

The Employer's Agent may elect to appoint an independent quality assurance representative to act in a surveillance capacity on his behalf for part or all of the contract.

The Employer's Agent's Quality Assurance Representative will be a selected Sub-Contractor and will be paid by the Contractor under this Contract for all tests passed by the Inspector and certified by the Employer's Agent. The Inspector will not act as the quality controller for the Contractor or his Sub-Contractors and accordingly any tests failing inspection will be for the account of the Contractor. Similarly the costs of all inspections arising following any failed tests will be for the account of the Contractor.

C3.6.3.5 Classification of Material

Part II of the above-mentioned Code of Practice, ie a quality system for manufacture and installation, will apply only to certain critical material, products and services if and where indicated hereunder in this document.

C3.6.3.6 Sub-Letting

All enquiries made and contracts placed by the Contractor for critical components shall require that sub-contractors comply with the requirements of the preceding sub-clauses. Responsibility for and all associated costs of compliance shall rest with the Contractor. In instances where SABS 0157 is not applicable, Tenderers must indicate what equivalent alternative Code of Practice is being implemented.

C3.6.3.7 Disqualification

Tenderers who do not include the formally documented statements called for in Sub-Clause C3.6.2.1 and who do not respond in terms of Sub-Clause C3.6.2.2 above may be disqualified.

("SABS" has been changed to "SANS, without change to the contents of the specifications).*

C3.6.4 Standardized Specifications

AA	1986	-	GENERAL (Small Works)
AB	1986	-	ENGINEER'S OFFICE
C	1982	-	SITE CLEARANCE
DA	1990	-	EARTHWORKS (Small Works)
DB	1989	-	EARTHWORKS (Pipe Trenches)
DK	1996	-	GABIONS and PITCHING
DM	1981	-	EARTHWORKS(ROADS, SUBGRADE)
G	1982	-	CONCRETE (Structural)
L	1983	-	MEDIUM-PRESSURE PIPELINES
LB	1983	-	BEDDING (Pipes)
LD	1982	-	SEWERS
LG	1983	-	PIPE JACKING

Preface on Interim Situation until Full Suite of SANS Series Specifications are Available.

The Bill of Quantities is based on the SABS 1200 system of specifications and measurement.

Where SANS specifications are available, these have been incorporated into the “Contract” section of this document.

Where overlapping specifications from the SANS 2001 series of specifications occur the appropriate SABS 1200 specifications have been incorporated into the Project Specifications.

In such cases, the requirements of the SABS 1200 specifications shall prevail over the requirements of the SANS specification(s).

The payment clauses in the Bill of Quantities are based on the SABS 1200 series of specifications for consistency and the Tenderer is required to ensure that he has priced all of the requirements pertaining to the SABS specifications.

The variations and additions to the standardised specifications (Project Specifications) as well as the Particular Specifications are included as C3.7 and C3.8 respectively. The variations, are prefixed PS, and take precedence over the SABS Standardised Specification.

Where the particular specifications are in conflict with either the variations and additions to standardized specifications or the SABS Standardised Specifications, the particular specifications shall take precedence.

The following SANS specifications are also referred to in this document and the Contractor is advised to obtain them from Standards South Africa (a division of SABS) in Pretoria.
SANS 10396: 2003: Implementing Preferential Construction Procurement Policies using Targeted Procurement Procedures

SANS 1921-1 (2004): Construction and Management Requirements for Works Contracts Part 1: General Engineering and Construction Works

SANS 1921-6 (2004): Construction and Management Requirements for Works Contracts Part 6: HIV / AIDS Awareness
The standardised specifications (SABS 1200) must be read in conjunction with the new SANS 1921 family of standards. In case of any discrepancy or conflict between the two, the SABS 1200 specification shall take precedence and shall govern.

Refer also to the Preface on interim situation until full suite of SANS Series of Specifications is available, on the first page of the Project Specification.

The term “project specifications” appearing in any of the SABS 1200 standardised specifications is deemed to be equivalent to the term “scope of work” in SANS Specifications.

C3.6.4.1 Certification by recognised bodies

Wherever possible items and materials for construction of the works shall comply with the relevant South African Bureau of Standards Specifications and with the British Standards where these are applicable in the absence of local standards.

The Contractor, when using materials conforming to a Standard Specification shall if called upon furnish the Employer’s Agent with certificates of tests showing that the materials do so conform.

C3.6.4.2 Preface on Interim Situation until Full Suite of SANS Series Specifications are Available

The Bill of Quantities is based on the SABS 1200 system of specifications and measurement.

Where SANS specifications are available, these have been incorporated into the “Contract” section of this document.

Where overlapping specifications from the SANS 1200 series of specifications occur the appropriate SABS 1200 specifications have been incorporated into the Project Specifications.

In such cases, the following shall be observed:

i. the requirements of the SABS 1200 specifications shall prevail over the requirements of the SANS specification(s).

ii. The payment clauses in the Bill of Quantities are based on the SABS 1200 series of specifications for consistency and the Tenderer is required to ensure that he has priced all of the requirements pertaining to the SABS specifications.

C3.7: PROJECT SPECIFICATIONS

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C3.7.1 PROJECT SPECIFICATIONS: PSAA – GENERAL (SMALL WORKS)

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C3.7.1 PROJECT SPECIFICATIONS: PSAA: GENERAL (Small Works) (Applicable to SABS 1200 AA – 1986)

PSAA 3 MATERIALS

PSAA 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 appropriate standard.

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

PSAA 4 EQUIPMENT

PSAA 4.1 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.

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.

PSAA 5 CONSTRUCTION

PSAA 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.

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 except that the Contractor will not be held responsible for pegs that must be removed or buried in accordance with the finished dimensions of any part of the Works or of any essential temporary work, and pegs removed by others not under the direct control of the Contractor.

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

PSAA 5.2 Protection of Underground Services (Refer SANS 1921-1 Clause 4.17)

Delete title and substitute the following:

Protection of Visible and Underground Services (Sub-Clause 5.2)

PSAA 5.3 Dealing with Water on Works (Refer SANS 1921-1 Clause 4.16)

Add to the Sub-Clause:
For this purpose he shall provide, operate and maintain in sufficient quantity such pumping equipment, well points, pipes and other equipment as may be necessary and he shall also provide any sumps, furrows, cross-embankments, coffer-dams and other temporary works as may be necessary to minimise damage, inconvenience, or interference.

PSAA 5.4Safety (Refer SANS 1921-1 Clause 4.18)

Add to the Sub-Clause:
All work and particularly work carried out in the proximity of buildings, bridges, tanks or other structures shall be carried out in conformance with the regulations framed under the Occupational Health and Safety Act, 1993 and Related Construction Regulations as promulgated in July 2003 and the Minerals Act, Act 50 of 1991, including shoring where necessary, to ensure the safety of structures that are at risk.

The Contractor shall enter into an agreement on Occupational Health and Safety as per the proforma bound into this document.

The Contractor shall make available for the duration of the contract safety helmets, gumboots and any other necessary safety equipment for sole use by the Employer's Agent and his representative(s).

PSAA 5.6 Protection of Structures (new sub-clause)

Where work is carried out in the proximity of buildings, bridges, buried services, tanks, wall or other structures, the Contractor shall take all necessary precautions required in terms of the regulations framed under the Occupational Health and Safety Act, (Act Nº 85 of 1993) to ensure the safety of structures and services that are at risk.

PSAA 5.7 Pollution

Add new Sub-Clause:

The Contractor shall take all reasonable measures to minimize any dust nuisance, noise, pollution of streams and inconvenience to or interference with the public or others arising out of the execution of the Works.

PSA 5.8 Accommodation of Traffic

Add new Sub-Clause:

Where construction work has to be carried out on or near public roads, the Contractor shall deal with traffic as specified in SANS 1921-2 (2004): Construction and Management Requirements for

Works Contracts, Part 2: Accommodation of Traffic on Public Roads occupied by the Contractor. The Contractor is also referred to Project Specification C3.5.1.7.

PSAA 6 TOLERANCES

PSAA 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 (refer specifically to PSDA 6 and PSG 6).

PSAA 8 MEASUREMENT AND PAYMENT

PSAA 8.2.1 Fixed Charge and Value Related Items

Add the following:

The amount, if any, by which the sum of the fixed-charge and value-related items exceeds three percent of the net total tendered amount (excluding allowances for contingencies and price escalation) shall be regarded for payment purposes as time-related items and will be paid in accordance with Clause 8.2.2.

PSAA 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”

Add to the Sub-Clause:

Notwithstanding the provisions of Sub-Clause 8.2.2, an approved extension of time will not qualify the Contractor to receive any payment for that portion of fixed charge and value-related items which has become regarded as "time-related" items in terms of PSAA 8.2.1 above.

PSAA 8.5 Temporary Works – Dealing with Water on Works

The tendered sum(s) shall cover the cost of providing, operating and maintaining the necessary equipment and other temporary works for dealing with groundwater in trenches and excavations.

C3.7.2 PROJECT SPECIFICATIONS: PSAB – ENGINEER'S OFFICE

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C3.7.2 PROJECT SPECIFICATIONS: PSAB: ENGINEER'S OFFICE (Applicable to SABS 1200 AB - 1986)

PSAB 1 SCOPE

PSAB 1.1 Sub-Clause 1.1

Delete the second sentence and substitute the following:

- It covers a scheduled number of identical offices and allows for mobile, semi-mobile and prefabricated accommodation.

PSAB 2 INTERPRETATIONS

PSAB 2.1(b) Supporting Specifications

Delete the Sub-Clause and substitute the following:

SABS 1200 AA or SABS 1200 AD as applicable.

PSAB 2.3 Definitions

Delete the first two lines and substitute the following:

For the purposes of this specification the definitions give in SABS 1200 A or SABS 1200 AA or SABS 1200 AD as applicable, and the following definitions shall apply:

PSAB 3 MATERIALS

PSAB 3.1 Nameboards

In the 3rd line delete “South African Institution of Civil Engineers” and substitute with “Consulting Engineers South Africa”.

PSAB 3.2 Office Building(s)

Delete the first sentence and substitute the following:

Where required, the Contractor shall supply and furnish one temporary office for the sole use of the Employer’s Agent and his staff. The office is to be erected at the Contractor’s offices.

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) If power is to be used by the Contractor on site:

electrical installation is to include a light and one 15A plug point plus an adequately sized air conditioning unit (for heating and cooling) or, alternatively, one 2000 W electric heater and one 375 mm diameter electric fan.

or

(j) If power is unlikely to be available on site:
one gas operated light and one gas operated heater plus an adequate supply of gas.

(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 one vehicle

(o) un-covered parking space for one vehicle

(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 EQUIPMENT

PSAB 4.1 Telephone

Delete the Sub-Clause and substitute the following:

The Contractor shall provide one cellular phone for the sole use of the Employer's Agent or his Representative.

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 tacheometer capable of reading to twenty seconds of arc plus tripod
- One automatic reading Engineer's level plus tripod
- One levelling staff (5 m long, 1 cm graduations)
- One staff angle bubble
- One metal change-point for levelling
- One separate plumb-bob
- One spirit level (one metre long)
- 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 4.4 Computer (New Sub-Clause)

Add new Sub-Clause:

The Contractor shall provide a laptop computer, of approved manufacture and of standard acceptable to the Employer and pre-loaded with Windows XP, Microsoft Excel, Word and Project, for the sole use of the Employer's Agent (or his Representative) for the duration of the Contract. The Contractor shall keep this equipment continuously and comprehensively insured and shall indemnify the Employer and the Employer's Agent against any claims in this regard. The Contractor shall also maintain this equipment in good working order until the completion of the Works, whereupon ownership of said equipment and software shall revert to the Employer.

PSAB 5 CONSTRUCTION

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

Add to the Sub-Clause:

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

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 SABS1200 AA.

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 SABS 1200 AA shall apply.

Add to the Sub-Clause:

The Tenderer is to include, under the Time-Related Charges, a sum of R300,00 per week for a period of time equal to the Time for Completion of the Contract (see Contract Data) to cover the cost of the Employer's Agent's telephone calls and all other costs relating to the provision of a cellular telephone for the exclusive use by the Employer's Agent or his Representative.

C3.7.3 PROJECT SPECIFICATIONS: PSC – SITE CLEARANCE

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C3.7.3 PROJECT SPECIFICATIONS: PSC: SITE CLEARANCE (Applicable SABS 1200 C - 1980 As Amended 1982)

PSC 3 MATERIALS

PSC 3.1 Disposal of Material

Add to this Sub-clause:

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

PSC 5 CONSTRUCTION

PSC 5.2.3.2 Individual Trees

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

The amount of the penalty payable by the Contractor for the removal or damage by him of a tree designated for preservation shall be R1000 for each tree having a girth of less than 1000 mm and R2000 for each tree having a girth of 1000 mm or more.

PSC 5.4 Grubbing

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

PSC 5.6 Conservation of Topsoil

Add to the Sub-Clause:

The topsoil, where approved by the Employer's Agent, shall be conserved for later use by stockpiling in stockpiles clear of the *working area.*

PSC 5.7 Landscape, Preservation and Conservation of Flora

Add to the Sub-Clause:

Where pipelines are to be laid in sensitive areas, the cleared width is not to exceed 2 m. After completion of the pipelaying, the natural bush is to be re-instated.

PSC 5.9 Remove, Temporarily Store and Replace Road Ancillaries

New Sub-Clause

Where the line of the trench crosses existing road ancillaries such as precast concrete kerbs and road signs, the Contractor will be required to dismantle, lift, store and replace the ancillary as directed by the Employer's Agent. In-situ kerbs shall be broken out between neat cuts and after the pipeline has been installed, reinstated to the satisfaction of the Employer's Agent.
…….. Unit : Nº or m

PSC 5.11.1 Existing Fences

Where the pipeline route crosses an existing fence, a section of fencing not exceeding 10,0 m in length may be removed temporarily during construction and thereafter reinstated to a condition not worse than the original as soon as the pipeline has been installed and backfilled in the immediate vicinity of the crossing. For the period while the existing fence is dismantled, the Contractor shall erect, at the end of each days operations, a temporary fence to close the gap in the existing fence. No payment will be made for this work.

PSC 5.11.2 Temporary Gates

Extra over Sub-Clause 5.3.1, where ordered by the Employer's Agent, a temporary gate of width not less than 3,0 m between posts shall be provided at a crossing point. The gates shall remain the property of the *Contractor* who shall be responsible for keeping them closed at all times except when working in the vicinity, and for their removal towards the end of the Contract. Payment shall be made per number of gates ordered. ……Unit : Nº

PSC 5.11.3 Permanent Gates

At existing fence crossings, where so ordered by the Employer's Agent, the Contractor shall supply and install a gate *as* specified hereunder within the limits of the pipeline servitude which gates will become the property of the Employer or other parties . …… Unit : Nº

The gates shall comprise a 4,2 m wide 1200 mm high Government Pattern Farm Gate - Heavy to CKS 146 (supports and lock up chain included) and make the necessary connections to the existing fence.

PSC 5.11.4 Fences Parallel to Pipeline Route

Outside urban areas where fences run parallel to the pipeline route the minimum design distance from fence centre line to pipe centre line is 1 m. No additional payments, over those entered into the Schedule of Quantities for excavation and pipelaying, shall be made for removal and reinstatement of such fences. However, in the case where the centre to centre distance is 1,75 m or less and the Employer's Agent is satisfied that the Contractor is unable to work with the fence in place, then payment will be made for the length of fencing ordered and be temporarily dismantled and reinstated. An item is included in the Schedule of Quantities to cover this work where necessary …… Unit : m

PSC 8 MEASUREMENT AND PAYMENT

PSC 8.2 Scheduled Items

The cost of dealing with fences in the manner specified in PSC 5.11.1 above shall be included in the rates quoted for excavation and pipelaying. If PSC 5.11.2 and PSC 5.11.3 is not required then delete.

Separate payment will be made for work specified in PSC 5.9 as scheduled.

PSC 8.2.10 Remove Topsoil to a Nominal Depth of 150 mm and Stockpile

Delete from the sub-clause heading the words: 'to a Nominal Depth of 150 mm'

Add to the Sub-Clause:

The topsoil, where approved by the Employer's Agent, shall be conserved for later use by stockpiling clear of the working area.

C3.7.4 PROJECT SPECIFICATIONS: PSDA: EARTHWORKS (SMALL WORKS)

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C3.7.4 PROJECT SPECIFICATIONS: PSDA : EARTHWORKS (SMALL WORKS) (Applicable to SABS 1200 DA - 1990)

PSDA 2 INTERPRETATIONS

PSDA 2.3 Definitions

•Delete the sentence headed "Restricted excavation" and substitute:

•Restricted excavation - An excavation so restricted in area or width as to preclude removal of material by excavating machinery used for bulk excavation measured in terms of Sub-Clause 8.3.1(b). Restricted excavation may be carried out by smaller machinery or by hand, as selected by the Contractor. The extent of restricted excavation shall be as scheduled and/or shown on the drawings; all other excavation shall be regarded as bulk excavation.

PSDA 3 MATERIALS

PSDA 3.2.1 Embankments & Backfill

Embankment material shall be compacted to 90% modified AASHTO density.

PSDA 3.3 Material Suitable for Replacing Overbreak in Excavations for Foundations

•Add new Sub-Clauses:

•Where, in excavations for foundations, the replacement of overbreak is required, Grade 10/40 concrete is to be used to fill all voids and to bring the excavated surface up to the correct level. No additional payment will be made for the cost of the additional excavation or for the cost of the mass concrete filling.

PSDA 3.4 Backfilling and Embankments

Add new Sub-Clause:

Sufficient material arising from excavations for structures, foundations, footing and the like and which is suitable for forming embankments and backfilling against finished structures shall be temporarily stockpiled in the vicinity of the structures. All other material from the excavations shall be disposed of on site as directed by the Employer's Agent.

PSDA 4 EQUIPMENT

PSDA 4.3 Compaction Plant

Add new Sub-Clause:

Where equipment is used for applying the dynamic load, controlling the moisture content and grading or mixing, the plant shall be capable of achieving the compaction specified using the material available for the construction of the Works.

PSDA 5 CONSTRUCTION

PSDA 5.1.1 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 is 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 0,45m 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, 75 mm x 50 mm rails securely fastened to them. At least 4 lamps or reflective markers must be provided at each crossing.

Where construction is in, or across, public roads the barricades or barriers and temporary road signs shall be erected. 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.

PSDA 5.1.1.2 Safeguarding of Excavations (Refer SANS 1921-1 Clause 4.18.3)

In sub-clause a) delete the words "Machinery and Occupational Safety Act" in the third and forth lines and substitute "regulations to the Occupational Health and Safety Act, 1993"

PSDA 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 incumbent on the Contractor 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 know or are shown on the Employer's Agent's drawing at tender stage the Contractor must make allowance in his rates and programmes for restrictions and delays which may result from restrictions imposed by the authorities.

PSDA 5.1.1.3b) Use of Explosives (New Sub-Clause) (Refer SANS 1921-1 Clause 4.7)

Generally, the Contractor will be permitted to use explosives for breaking up rock and hard material during excavations, for demolishing existing structures and for such other purposes where it may normally be required, subject to the following conditions:

a) The Employer's Agent or Inspector of Explosives shall have the power to prohibit the use of explosives in cases where in his opinion, the risk of injury or damage to persons, property or adjoining structures is too high. Such action by the Employer's Agent shall not entitle the Contractor to any additional payment for having to resort to other less economical methods of construction unless otherwise provided in the Contract Data or Bill of Quantities.

b) Should blasting be necessary, the Contractor shall take every precaution to protect the Works and persons, animals and property in the vicinity of the site. The Contractor will be held responsible for any injury or damage caused by any blasting operations and shall make good such damage at his own expense.

c) The requirements for the Explosives Regulations Act (Act 26 of 1956) and the requirements of the Inspector of Explosives shall be complied with. In addition, where

applicable, the requirements of Chapter 9 of the Regulations published in terms of the Mines and Works Act (Act 27 of 1956) and the requirements of the Government Mining Employer's Agent shall be complied with.

d) A copy of each blasting permit issued to workmen, and of each permit issued to the Contractor to cover the purchase, storage and transport of explosives, shall be handed to the Employer's Agent. The Contractor shall grant the Employer's Agent access to all records maintained for the Inspector of Explosives or the Government Mining Engineer, as the case may be.

e) Before any blasting is undertaken, the Contractor, together with the Employer's Agent shall examine and measure up any buildings, houses or structures in the vicinity of the proposed blasting and establish and record together with the owners thereof the extent of cracking or damage that may exist before commencement of blasting operations. It is advised that a photographic record will be required of neighbouring structures before blasting commences. These structures will be pointed out by the Employer's Agent. It shall be the responsibility of the Contractor to make good at his own expense any further damage to such houses, buildings or structures which is a result of the blasting.

f) Where there is reasonable danger of damage to power and telephone lines or any other property, the Contractor shall suitably adapt his methods of blasting, the size of the charges and use adequate protective measures such as cover blasting in order to limit the risk of damage as far as possible.

g) When blasting to specified profiles, the Contractor shall so arrange the holes and charges that the resulting exposed surfaces are as sound as the nature of the material permits. The Contractor shall make good at his own expense any additional excavation necessitated by the shattering of rock in excess of any overbreak allowance specified in the Specification Data or in any other specification or given on a drawing.

PSDA 5.1.1.3c) Limitations for Blasting (New Sub-Clause)

a) Approval of methods and keeping of records

No blasting work may be carried out prior to the Employer's Agent's approval being given in writing

Prior to starting any drilling for the first section of blasting, the Contractor shall submit for approval to the Employer's Agent, details of the proposed overall methods of blasting that will be used on site, including spacing, depth and pattern of holes, charging levels (kg/m^3), spacing and positioning of relays, method of blast initiation, precautions to prevent 'fly rock', maximum charge per relay, traffic arrangements during blasting, and any other details he may consider relevant. These details shall be submitted in writing and supported with sketches at least 7 days before the commencement of drilling and blasting.

The Employer's Agent will evaluate these details in relation to the given limitations and prior to giving his approval, will indicated to the Contractor any changes that may possibly be needed to comply with the limitations.

For all subsequent blasts, the Contractor shall, at least 24 hours beforehand, notify the Employer's Agent of the intention to blast and at the same time shall note if any changes will be made relative to the approved method.

The Employer's Agent reserves the right to order the Contractor to modify his method of drilling and blasting, or to employ reduced blasting, without thereby invalidating the Contract. The Contractor shall have no claim for extra payment, over and above his tendered rates, due to his being ordered to use such a different method of drilling or blasting or reduced charges, regardless of any prior approval by the Employer's Agent of any previous method.

After every blast, the Contractor shall, within 24 hours, submit to the Employer's Agent details of the actual total mass of explosives used, the approximate volume of material loosened and the maximum simultaneous mass of explosives detonated (maximum charge per relay).
Notwithstanding any approval given by the Employer's Agent, the Contractor shall at all times be responsible for the safety of the Works, persons, animals and property in the vicinity of the Site during blasting operations.

b) *Vibrations*

Blasting vibrations are caused by the transmission of the shock wave from the explosion charge through the material being blasted. This shock wave could cause damage to structures in the vicinity of the blasting if the vibrations are not limited to acceptable levels. Damage to structures is closely associated with peak particle velocity of the ground vibrations in the vicinity of the structure. Advisable maximum levels for peak particle velocity are given in Table 2.

Table 2 - Maximum Particle Velocities (Vibration)

Maximum peak particle velocity (mm/s)	Effect on people and buildings
0,5	Threshold of human perception unlikely to cause damage of any type
5	Limit for blasting adjacent to historical monuments
25	Limit for blasting near private dwellings in order to reduce disturbance to residents to a minimum
50	Limit for blasting adjacent to residential structures on good foundations
84	Limit for property owned by concern doing the blasting (ie. minor plaster cracks acceptable)
120	Recommended maximum level for blasting adjacent to sturdy reinforced concrete structures

The peak particle velocity V is related to the distance D from the blast and the maximum mass of explosive E instantaneously detonated (maximum charge per relay) by the general equation:

$$V = \left(\frac{k}{D}\right)^m xE^n$$

where k, m and n are constants for a particular set of circumstances. V is in mm/s, D is in metres and E is in kilograms. Experimentation has shown that n = 0,5 but k and m have to be determined for each site by means of vibration measurements. However blasting can be safely conducted without vibration measurements or expert advice if the following relationship is used:

$$V = \left(\frac{1150}{D}\right)xE^{0.5}$$

which gives the maximum charge levels for V = 50 mm/s listed in Table 3.

Table 3 - Maximum Charge Levels

Minimum distance from nearest blast hole structure (m)	Maximum charge mass per relay (kg)
10	0,19
20	0,76
30	1,7
40	3,0
50	4,7
60	6,8
70	9,3
80	12,1
90	15,3
100	18,9

Only detonating relays of at least 20 milliseconds delay interval shall be used.

The above relationship can be used to calculate charge mass for other velocity limits. However, if higher charge levels have to be used for practical reasons, expert advice and possibly vibration measurements will be required.

Notwithstanding the above blasting limits, the Contractor shall at all times be responsible for the safety of the Works, person, animals and property in the vicinity of the Site during blasting operations.

PSDA 5.1.1.3d) Negligence (New Sub-Clause)

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

PSDA 5.1.3 Existing Services (Refer SANS 1921-1 Clause 4.17)

Add to the Sub-Clause:

All existing services on the site may not be shown on the Drawings or be visible on the site. The Employer's Agent may order excavation by hand in order to search for and expose services. An item has been included in the Bill of Quantities to cover the cost of such work if so ordered by the Employer's Agent.

Where a service is damaged because of the Contractor's negligence, he shall be liable for the costs involved in the repair of the service and any other costs consequent upon the interruption of the damaged services.

PSDA 5.1.5 Excessive Pollution (Refer SANS 1921-1 Clause 4.19)

Add the words "noise and", before the word "dust" in the first line.

PSDA 5.1.6 Excavated Material not to Endanger or Interfere (Refer SANS 1921-1 Clause 4.10)

Delete the sentence: "If the necessity ……..will be borne by the Employer."

Delete the last sentence and substitute:

"All material that is unsuitable or not required for backfilling (surplus material) shall be disposed of as described in C.3.5.6. No additional payment will be made for these activities.

PSDA 5.2.1 Site Preparation

Delete the last sentence and substitute:

"Material so removed shall be disposed of by the Contractor to Sites designated by the Employer's Agent".

PSDA 5.2.2 Excavation (Refer SANS 1921-1 Clause 4.10)

Delete paragraph (f) of the Sub-Clause and substitute:

(f) Borrow pits where and when ordered shall be so maintained that they do not become a danger to persons and livestock. The necessary access shall be constructed to each site. Topsoil and overburden shall be stockpiled temporarily and, on completion of the work, returned to and spread over the area of the borrow pit in such a manner that the sides are graded 1:2 and the floor is self-draining, or otherwise as directed. Any access constructed by the Contractor shall be scarified and the area reinstated.

Add to the Sub-clause:

(h) 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 Schedule. Outside shuttering shall be used for the construction of all major structures unless ordered otherwise by the Employer's Agent.

(i) 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.

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

PSDA 5.2.3.1 Embankments

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

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

Delete the nineteenth line and substitute the following:

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

PSDA 5.2.3.2 Restricted Backfill and Compaction at Structures

Delete the eighth and ninth lines and substitute:

Not exceeding 250 mm and compacted by means of mechanical tampers to achieve a 90% modified AASHTO density except where indicated otherwise on the Drawings.

PSDA 5.2.5.2 Topsoiling

Delete the wording of Sub-Clause 5.2.5.2 and replace with the following:

Where scheduled, topsoil shall be placed on all surfaces and on embankments and shall be

lightly compacted by wheeled vehicles or by tamping, and trimmed neatly to the required lines grades and levels. The final thickness of topsoil after compaction shall be at least 100 mm. Prior to topsoiling, the surfaces to be topsoiled shall be prepared by pulling horizontal ruts into the soil with the tines of a front-end loader or other suitable method to retard erosion of the topsoil

PSDA 5.2.5.3 Grass and other vegetation

Add to the Sub-Clause:

- The surface of topsoiled embankments, terraces and other designated areas are to be planted with fine sturdy approved grass, other than Kikuyu, the tufts being spaced at 150 mm centres maximum. The grassed areas are to be fertilised and watered until the area is fully covered with grass.

PSDA 5.2.6.1 Free haul

Delete the wording of Sub-Clause 5.26.1 and replace with the following:

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

PSDA 5.5.6.2 Overhaul

Delete the Sub-Clause.

PSDA 6 TOLERANCES

PSDA 6.1 Dégrée of Accuracy

Delete the Sub-clause and substitute:

The work shall, subject to Sub-Clause 6.2, be finished off within the limits of Degree of Accuracy II as set out in Sub-Clause 6.1 of SABS 1200 D.

PSDA 6.2 Permissible Déviations

Add the following permissible deviations for work to Degree of Accuracy II :

6.2(a)	1		± 300mm
	2		± 100mm
	3		± 50mm
	4	From direction of slope	Nil
		Between 1/100 and 1/300	10%
		1/400 and flatter	5%
6.2(b)	1		± 35mm
	2		± 50mm
	3		± 50mm
	4		± 15mm
6.2(c)	1	Read "-2%+1%" in place of "±2%	

PSDA 6.3 Excavation by Mechanical Means

Add to the Sub-Clause:

Where bulk excavation is carried out by earthmoving equipment, such excavation will only be allowed to within a level of 300 mm, or less as ordered by the Employer's Agent, above the general level to which the ground has to be reduced, the balance of the bulk excavation

being carried out by hand or by other means approved by the Employer's Agent.

PSDA 7 TESTING

PSDA 7.2 Determination of Compaction

Add to the Sub-Clause:

Determination of the standard of compaction achieved shall be carried out in accordance with Standard methods of testing road construction materials published by the Department of Transport Division of National Roads, Publication TMH.1.

PSDA 8 MEASUREMENT AND PAYMENT

PSDA 8.1.1 Basic Principles

Delete the third line of the first sentence and substitute:

"material in backfilling, forming embankments, etc., including any necessary additional offloading, stock-piling and reloading and the cost of disposal of any"
In the seventh line delete "Drawing DA-2" and substitute "Fig DA-2"
Add to the Sub-Clause:

Unavoidable over-excavation for structures located in boulder formation will be measured and paid for up to a maximum of 600 mm in Class A boulder formation and 300 mm in the case of Class B boulder formation, as applicable, as measured beyond the required outline of the structure and at right angles to it.

PSDA 8.1.2 Basic Principles

Delete the first line of the first sentence and substitute:

"Excavations which are required to be backfilled, or partially backfilled, will be measured as if taken out"

Delete the fifth and sixth lines and substitute:

"other such structures, the volume will be measured from the finished outline of the concrete, or the blinding to the concrete (as the case may be), as shown on the Drawings.

PSDA 8.1.3 Basic Principles

Delete the third line and substitute:

"will be measured as part of the bulk excavation or restricted excavation, as applicable".

PSDA 8.3.1(a) Excavation

Add to the Sub-Clause:

Where removal to greater depths is ordered, the area measured for payment will unless otherwise scheduled, be increased pro rata to the average increase in depth.

PSDA 8.3.1(b) Excavation

Drawing DA-1 in the third line to read "Fig DA-1"

Delete the third line of the second sentence and substitute:

"-ation, offloading to stockpile, stockpiling and reloading as may be necessary, spreading or

backfilling, compacting and watering"

PSDA 8.3.1(c) Excavation

"Drawing DA-1" in the last line to read "Fig DA-1"

PSDA 8.3.2(a) Restricted Excavation

Drawing DA-2 in the fourth line to read "Fig DA-2"

PSDA 8.3.2(b) Restricted Excavation

Add to the Sub-Clause

(3) boulder excavation Class A .....Unit m³

(4) boulder excavation Class B.....Unit m³

Delete the last two lines and substitute:

(a) above for any portion of the excavated material that is classified as intermediate, hard rock, boulder Class A or boulder Class B as applicable.

PSDA 8.3.4 Importation of Materials

Delete the last five lines and substitute:

PSDA 8.3.4.1 for embankment construction

The rate shall cover the cost of royalties (if any) and acquiring suitable material, loading, transporting with freehaul distance, unloading, spreading in layers not exceeding 150 mm thick, watering, compacting to 90% Mod AASHTO density, trimming slopes of embankment to required outline all in accordance with the Specifications. The rate shall also include for carrying out density testing and the disposal of any surplus material.

PSDA 8.3.4.2 for backfilling around structures

The rate shall cover the cost of royalties (if any) and acquiring suitable material, loading, transporting with freehaul distance, unloading, spreading in layers not exceeding 150 mm thick, watering, compacting to 90% Mod AASHTO density, trimming upper surfaces to the required outline all in accordance with the Specifications.

PSDA 8.3.9 Additional Compaction (New Sub-Clause)

Where so scheduled additional compaction over that required to achieve 90% Mod AASHTO density in order to achieve the scheduled higher density shall be paid for by the volume so compacted. .....Unit m³

The rate shall include for all additional plant, labour and materials necessary to achieve the additional compaction scheduled.

PSDA 8.3.10 Survey of Surrounding Structures before Blasting (New Sub-Clause)

The rates shall cover the cost to examine and measure up any buildings, houses or structures in the vicinity of the proposed blasting and establish and record together with the owners thereof the extent of cracking or damage that may exist before commencement of blasting operations. The rate shall cover the cost of providing a photographic record of neighbouring structures before blasting commences.

PSDA 8.3.11 Protection of Structures –Buildings (New Sub-Clause)

The rates shall cover the cost of examining and measuring up any buildings, houses or structures that encroach within the pipeline servitude and establishing and recording, together with the owners thereof, he general condition and/or damage that may exist before commencement of blasting operations, including the cost of providing a photographic record, the costs of reduced working width, and the costs of any special working methods required to protect the structure throughout the course of the nearby construction work. This shall include, where required, but is not necessarily limited to, the use of shoring or lateral trench support and the placing of barriers to demarcate restricted working area in the vicinity of the structure.

C3.7.5 PROJECT SPECIFICATIONS: PSDB: EARTHWORKS (PIPE TRENCHES)

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C3.7.5 PROJECT SPECIFICATIONS: PSDB : EARTHWORKS (Pipe Trenches) (Applicable to SABS 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
(for bedding material (padding) for steel pipes see PSLB 3.3)

Delete the Sub-Clause and substitute the following :

Selected fill material shall be a sandy clay material having a PI not exceeding 6 and that is free from vegetation and from non-crushable lumps and stones of diameter exceeding 20 mm.

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 must pass through a sieve of aperture size not exceeding that specified in SABS 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 SABS 1200 ME for the Subbase
(ii) Clauses 3.2 and 3.3 of SABS 1200 MF for the Basecourse
(iii) Clause 3 of SABS 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 EQUIPMENT

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
1. 0% - 2%	No cross-embankments required		
2% - 5%	300 mm	1,2 m	55 m
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 metre 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)

- Add 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-5.1.5 Trench Excavations (New Sub-Clause)

Add new Sub-Clause:

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

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 is 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 must 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 SABS 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 may 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 SABS 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 8.3.2 Excavation

Add the following sub-items to Sub-Clause 8.3.2.b):

"(3) Hand excavation and backfill where ordered by the Employer's Agent .....Unit : m^3

(4) Backfill stabilised with 8 % cement where directed by the Employer's Agent .....Unit : m^3

(5) Boulder excavation Class A .....Unit : m^3

(6) Boulder excavation Class B .....Unit : m^3"

The tendered rates for (4) above shall include full compensation for selecting, mixing, backfilling and compacting of the stabilised material to 90% of modified AASHTO density.

Measurement of Extra Over for (5) and (6) above will not apply to any length of trench in soft material more than 2 m long. Surplus boulder material from trench excavation shall where applicable, be disposed of to the designated spoil areas situated within the freehaul distance from the source of such material except where shown otherwise on the drawings.

PSDB 8.3.3.1 Deficiency in Backfill Materials

Payment for imported, graded stone laid under pipelines in accordance with PSDB 5.5 shall be paid for under either Sub-Clause 8.3.3.1(c) or as scheduled.

PSDB 8.3.3.4 Overhaul

Delete the Sub-clause and substitute:

All haul will be regarded as free haul.

PSDB 8.3.4(c) Cross Embankments

Add new Sub-Clause

Payment for cross embankments will be paid for by volume of embankment constructed in accordance with the specification. ..... Unit : m^3

PSDB 8.3.5 Existing Services that Intersect or Adjoin a Pipe Trench

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.

PSDB 8.3.6.2 Grassing (new sub-clause)

Grassing ..... Unit : m²

Approved grass shall be planted after topsoiling has been completed, with tufts being spread at not more than 150 mm centres. The planted area shall be neatly trimmed, fertilised and watered. The Contractor shall ensure that the planted areas are not permitted to dry out. Any grass that fails to grow shall be replaced by the Contractor, at his expense, with fresh grass, until satisfactory cover is obtained. The rate shall cover the supplying, planting and maintenance of grass, all in accordance with this specification.

PSDB 8.3.8 Hand Excavations to Prove Existing Services (new clause)

The Contractor will be required to prove existing services in the vicinity of the Works by careful hand excavation. These services include Telkom and electricity cables, sewers, stormwater drains and existing water mains, some of which are shown on the drawings, and others of which no reliable record exists.

Services must be successfully proved prior to work commencing in an area.

An item is provided in the Bill of Quantities for hand excavation to prove services and measurement will be based on the volume of material excavated.

PSDB 8.3.9 Sack Breakers (new sub-clause)

Sack breakers shall be installed from the bottom of the bedding to 300 mm below finished ground level. ..... Unit : No

C3.7.6 PROJECT SPECIFICATIONS: PSDK: GABIONS AND PITCHING

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C3.7.6 PROJECT SPECIFICATIONS: PSDK : GABIONS AND PITCHING (Applicable to SABS 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 test.

The stone shall be subjected to the 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 constructed of double twisted, hexagonal wire mesh gabions of nominal 80 mm mesh, with 3,4mm o/d frame wire and 2,7mm o/d mesh wire. Complete with partitions at 1 m centres. All wire is 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 2,4 mm diameter galvanised steel wires.

Nominal 60 mm mesh shall be used for mattress cages with 2,0 mm diameter galvanised steel wires.

Selvedge wire shall be galvanised and the diameter shall be in accordance with Table 3 of SABS 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 m^3.

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 of 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.

C3.7.7 PROJECT SPECIFICATIONS: PSDM: EARTHWORKS (ROADS SUBGRADE)

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C3.7.7 PSDM : EARTHWORKS (ROADS, SUBGRADE) (Applicable to SABS 1200 DM - 1981)

PSDM 2 INTERPRETATIONS - Supporting Specifications

SABS 1200 AA and SABS 1200 DA are applicable to this contract.

PSDM 3 MATERIALS

PSDM 3.2.1 General

Add to the Sub-Clause:

The nomenclature used for the classification of various material types to be used in the designated pavement layers is that defined in the NITRR documents TRH4 and TRH14.

PSDM 3.3.1 Selection – General

Add to the Sub-Clause:

- Should insufficient materials of a quality acceptable for use in the selected layer be found in the excavations the balance of the material required for the selected layer shall, when instructed by the Employer's Agent, be obtained from the Contractor's own source.

PSDM 3.4 Road Foundation Layers (new Sub-Clause)

The proposed road foundation specification is:

Scarify and compact in situ roadbed material to 90% mod AASHTO density
150 mm imported G sub-base compacted to 93% Mod AASHTO density
150 mm imported G5 base compacted to 93% Mod AASHTO density

PSDM 5 CONSTRUCTION

PSDM 5.1.1 Existing Services

- Add to the Sub-clause:

- All existing services may not be shown on the drawings or be visible to the Contractor on site. The Employer's Agent may order excavation by hand to expose such sources.

- Where service is damaged because of the Contractor's negligence, he shall be liable for the repair of such service and shall bear all costs involved in the repair and other costs or losses due to the interruption of the services.

PSDM 5.1.2 Accommodation of Traffic

- Add to the Sub-Clause:
- The Contractor shall provide signs for the temporary accommodation of traffic as required.

PSDM 5.2 Methods and Procedures

PSDM 5.2.2.5 Disposal of Surplus or Unsuitable Material

- Add to the Sub-Clause:
- Surplus and unsuitable material shall be disposed of as instructed by the Employer's Agent.

PSDM 5.2.8.1 Freehaul

- Add to the Sub-Clause:

- All movement of cut and fill material, borrow material and surplus material will be regarded as freehaul.

PSDM 8 MEASUREMENT AND PAYMENT

PSDM 8.2.1 Earthworks Measurement

- Add to the Sub-Clause:

- Earthworks will be measured by volume in compacted embankment once only as compacted fill from cut or borrow, whichever is applicable. Uncompacted fill from cut, material placed to stockpile or to spoil will be measured insitu as excavation.

C3.7.8 PROJECT SPECIFICATIONS: PSLB: BEDDING (PIPES)

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C3.7.8 PROJECT SPECIFICATIONS: PSLB: BEDDING (PIPES) (Applicable to SABS 1200 LB - 1983)

PSLB 2.3 DEFINITIONS

Main fill:

Delete "150 mm" in second line and substitute "300 mm".

PSLB 3 MATERIALS

PSLB 3.1 SELECTED GRANULAR MATERIAL

In the second line delete "19 mm" and substitute "10 mm".

Add to the Sub-Clause:

The maximum compatibility factor shall be 0,4.

PSLB 3.2 SELECTED FILL MATERIAL

(For bedding material (padding) see PSLB 3.3 below)

In the second line delete “30 mm” and substitute “20 mm”.

PSLB 3.3 BEDDING

Add to the Sub-Clause:

All pipes and fittings laid under this Contract will be considered as being flexible pipes. Bedding (selected granular and selected fill material) for pipes shall be fine sand or fine non-cohesive soil, carefully selected, with maximum particle size of 5 mm and which shall not cake nor form lumps when drying. It shall have a pH value of not less than 5,5 nor contain any acid forming or other material which can harm the protective coating or wrapping. Material complying with the above requirements will also be referred to in this document as "padding". Samples of bedding sand (padding) shall be submitted by the Contractor to the Employer’s Agent for approval well in advance of construction. Only after the Contractor has received written approval from the Employer’s Agent, may he/she proceed with placing sand as selected granular material.

No sharp-edged stones shall be allowed to come into contact with the pipes or fittings. Joint holes (pockets) shall be provided in the trench bottom and bedding, at each pipe joint to facilitate welding, and tape wrapping and no extra payment will be made for forming or filling the joint holes (pockets) with padding sand.

All “padding” material used for the cradle beneath and surrounding the coated steel 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 compatibility factor of not more than

0.4. The material should be classified as silty to fine sand having a stiffness ratio of not less than 5,0 MPa. Furthermore, the origin of the materials should, preferably, be river transported 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 padding material at all times.

Items have been provided in the Bill of Quantities for the provision of approved bedding sand from approved Commercial or other approved off-site sources for padding sand.

No extra payment will be made for forming or filling joint holes (pockets).

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 SABS 1200 DB and the provisions of Sub-Clause 3.7 of SABS 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

Add to the Sub-Clause:

All the steel pipelines are to be bedded and protected in accordance with the details described in PSLB 3.3 except in certain sections where Class A bedding or stone bedding (as a drainage layer) or concrete encasing is to be provided as shown on the drawings or where ordered by the Employer's Agent.

PSLB 5.1.2 Details of Bedding

Add to the Sub-Clause:

The pipeline is to be laid on the class of bedding indicated in the Bill of Quantities and/or 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 100 mm clearance around the bottom of the pipe during hydraulic pressure testing of the pipe to facilitate inspection.

PSLB 5.2 Placing and Compacting Rigid Pipes

PSLB 5.2.2 Class 'C' Bedding

Delete the third, fourth and portion of the fifth lines and substitute the following:

The pipes shall be bedded on a layer of compacted granular bedding material on which a 25 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, and additional selected granular material shall be added and compacted in layers until levels for the bedding cradle as shown on Dwg LB - 1 (c) are reached. 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 levels are reached as shown on Dwg LB-1 (c).

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 150 mm thickness (See PSDB 5.5) 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 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 layers up to the midpoint 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.

All bell (fox) holes shall be filled with bedding material.

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 8.2.1 Provision of Bedding from Trench Excavation

Delete the Sub-Clause and substitute the following:

Without the need for screening:

a) Selected granular material Unit: m^3

b) Selected fill material Unit: m^3

c) Padding sand to specified bedding dimensions Unit: m^3

The rates shall cover the cost of acquiring, from any point along the trench excavation as may be selected by the Employer's Agent, bedding that complies with the relevant requirements of the specification, of delivering it to points alongside the trench spaced to suit the Contractor's methods of working, of making good any backfill deficiency from points where backfill has been acquired, and of disposing of displaced material.

Including for screening:

a) Selected granular material Unit : m^3

b) Selected fill material Unit: m^3

c) Padding sand to specified bedding dimensions Unit: m^3

The rates shall cover the cost of screening or otherwise treating excavated material, at any point along the trench excavation as may be selected by the Employer's Agent, in order to produce bedding that complies with the relevant specification, delivering it to points alongside the trench, spaced to suit the Contractor's methods of working, of making good any backfill deficiency there may be from points where screened backfill material has been acquired, and of disposing of displaced material.

Note: The rate for the supply and laying of pipelines covers the cost of handling the bedding material from alongside the trench, placing it under the pipeline, forming joint holes and completing the bedding around and over the pipe.

PSLB 8.2.2 Provision of Bedding by Importation

Delete the sub-clause and substitute the following:

Including for screening and/or other treatment:

a) Selected granular material Unit : m^3

b) Selected fill material Unit : m^3

c) Padding sand to specified bedding dimensions Unit : m^3

The rates shall cover the cost of acquiring, loading, transporting, offloading, screening or otherwise treating excavated material in order to produce bedding that complies with the relevant specification, delivering it to points alongside the trench spaced to suit the Contractor's methods of working and of disposing of displaced material.

Note: The rate for the supply and laying of pipelines covers the cost of handling the bedding material from alongside the trench, placing it under the pipeline, forming joint holes and completing the bedding around and over the pipeline.

PSLB 8.2.3 Concrete Bedding Cradle

Add the following paragraph to the Sub-Clause:

All concrete bedding to pipes will require formwork. The rate for concrete bedding shall include for the supply, installation and stripping of all formwork.

PSLB 8.2.4 Encasing of Pipes in Concrete

Delete the fifth and sixth lines and substitute the following:

encasing the pipe in concrete 150mm thick each side of the pipe and to 150mm 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 Drainage Layer

Supply and place beneath pipe, 150mm crushed stone layer as ground water drainage layer. The excavation for these drains will be measured in cubic metres at the tendered rate applying to unsuitable excavation below the bottom of the trench (SABS 1200 DB 8.3.2 c).

The rate for stone filling shall be per cubic metre of stone fill, measured according to a width equal to the base widths and depths ordered. Unit : m^3

Supply and installation of geofabric filter material (BIDIM Grade A4 or similar) around stone. The rate shall be per square metre of geofabric to enclose the stone material, measured net according to a width equal to the base widths and depths ordered. Unit : m^2

C3.7.9 PROJECT SPECIFICATIONS: PSLD: SEWERS

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C3.7.9 PROJECT SPECIFICATIONS: PSLD: SEWERS (Applicable to SABS 1200 LD - 1982)

PSLD 2.3 DEFINITIONS

Add to the Sub-Clause :

Normal Blasting

The method which an experienced blaster employs when carrying out general blasting of hard rock material in trenches.

Close Proximity Blasting

The method which an experienced blaster employs when carrying out blasting of hard rock close to adjacent services or structures requiring additional but smaller charges in order to break up the hard rock without damaging the adjacent services or structures. Each situation to be considered separately but generally within 3 m of the adjacent services or structures.

PSLD 3 MATERIALS

PSLD 3.1.1 Vitrified Clay Pipes

Delete Sub-Clause 3.1.1.2 and substitute :

Vitrified clay sewer pipes shall be plain ended "Vitro" (or equal) pipes having a crushing strength of at least 45 kN/m. The joints of pipes of 100 mm and 150 mm diameter shall comprise natural rubber rings within polypropylene couplings.

PSLD 3.1.3 FC Pipes

The FC pipes and fittings comply with the applicable requirements for Series 4 pipes as set out in SABS 819.

The FC pipes **and couplings** shall be bitumen dipped.

PSLD 3.4 Bedding

Bedding of sewers shall be for flexible pipes (SABS 1200 LB) or concrete encased.

PSLD 3.5.2 Precast Concrete Manhole Sections

Add the following end of the Sub-Clause:

Joints between all wall sections and under roof slab shall be primed and sealed with a plasticised butyl rubber compound ("Bitujoint Putty" by ABE or similar approved) complete with one layer of 200 mm wide compatible PVC tape and primer (similar or equal to the "Corro Clad" system supplied by Denso South Africa (Pty) Ltd) to be supplied and applied circumferentially to the outside of each wall section joint.

PSLD 3.5.6 Mortar

Delete the sub-clause and substitute the following:

Mortar for brickwork and, where so ordered by the Employer's Agent, for external plasterwork to manholes shall be composed of one part of cement to three parts of clean pit sand. Mortar for the internal plasterwork to manholes where ordered and to the benching within manholes shall be composed of one part of cement to three parts of sand.

PSLD 3.5.8 Manhole Covers and Frames

Add to the first paragraph of the Sub-Clause:

After installation all exposed portions of the CI cover and frame shall be thoroughly cleaned and painted with two coats of approved epoxy tar, particular attention being paid to the painting of the underside of the covers and frames.

Precast concrete manhole cover slabs, adaptor slabs and lids shall comply with the applicable requirements of SABS 1294 and to the details shown on the drawings. The precast concrete cover slab shall be so designed as to withstand a point load in the centre, as specified in Clause 8.7 of SABS 1294, of 50 kN for light duty covers and 100 kN for heavy duty covers. The lifting lugs shall be made of 6 mm dia grade 316 stainless steel rod. The openings and undersides of all covers and slabs shall be coated with two coats of "Proofex 3".

PSLD 4 EQUIPMENT

PSLD 4.1 Pipe Handling and Rigging Equipment

Add to the Sub-Clause :

The Contractor will be responsible for clearing the areas required for pipe storage which shall include the removal of rock, stones and all combustible material. He shall also be responsible for maintaining the area in a clean and tidy condition for the duration of the Contract.

Upon delivery of the pipes, fittings, specials and valves, these will be inspected jointly by the Employer's Agent's Representative and the Contractor. Any pipes, etc. found to be damaged shall be returned to the factory for repair or replacement; in which case the costs of additional transport, repair or replacement shall be borne by the Contractor.

The Contractor will be held fully responsible for the care and safety of all pipes and fittings, etc. on site, and shall bear the cost of all renewals which may be necessary to make good losses, damages or breakages. Furthermore, he shall be fully responsible for handling and re-loading material at the storage areas and for transporting and offloading of all such materials to their correct places along the pipeline route.

PSLD 5 CONSTRUCTION

PSLD 5.4 Connections to Manholes

Add the following paragraph to the sub-clause:

The rates tendered for the construction of manholes are to include for whatever additional costs there may be over and above the tendered rates for the supply, lay, joint, bed and test pipelines, for the supplying and fixing the short lengths of pipes entering and leaving manholes.

PSLD 5.6.1 General

The underside of all manhole roofs and edges of the access opening therein and precast concrete covers and lids shall be painted with two coats of "Proofex 3", as supplied by Fosroc (Pty) Ltd, P O Box 477, New Germany, 3620, or similar approved rubberized bitumen coating so as to protect the concrete from the effects of sewage gases.

The tendered rates for manholes shall include for this work.

PSLD 5.6.5 Precast Concrete Manholes

In the first sentence, delete "Drawing LD-5" and substitute with "the drawings"

PSLD 5.7 Concrete Casing to Pipes

Add to the sub-clause:

Concrete casing is to be of 20/19 grade concrete with a minimum thickness of 100 mm below, above top and on each side of the pipe as and where ordered by the Employer's Agent.

PSLD 5.9.3 Recording Location

Delete the last sentence and substitute :

The records shall be handed to the Employer's Agent, in a form acceptable to the Employer's Agent, at the time when the Contractor claims payment for the relevant work.

PSLD 6 TOLERANCES

PSLD 6.2 Overall Centre-line Control and Manhole Locations

In second line delete "± 300 mm" and substitute "± 150 mm".

PSLD 6.3 Manhole Invert-levels

In second line read "± 25 mm" for "± 50 mm"

PSLD 7 TESTING

PSLD 7.1.4 Sub Clause

Delete the Sub-Clause and substitute the following :

The sewer, and the house connections along its length, shall be tested simultaneously between manholes or chambers, as applicable. The house connections and the section of the sewer under test shall be suitably "plugged" at the open ends using plugs or stoppers which have been braced adequately.

PSLD 7.2.2 Water Test

The Water Test will not be acceptable under this Contract.

PSLD 7.2.6 Watertightness Testing of Manholes

Wherever ordered in writing by the Employer's Agent that a manhole is to be tested, it is to be tested in his presence or in the presence of his authorised representative, in the following manner:

All sewer inlets and outlets to and from the manhole shall be closed with expanding plugs or other apparatus. Water is then to be introduced into the manhole up to a level 25 mm below the underside of the roof slab. The water level is to be maintained for not less than one hour or such longer period as may be necessary to accurately record the rate of leakage, if any. Careful and accurate records shall be kept at frequent and regular intervals of the variation in the level of the water in the manhole and of the quantity of water added so that the rate of leakage may be properly determined. In the event of the rate of leakage, if any, exceeding 1,25 l/h/m of depth of manhole, or in the event of any weakness, defect or fracture or visible signs of leakage occurring in the manhole under test, the Employer's Agent shall have the right to order the test to be discontinued and the Contractor shall thereupon, at his own expense, search for and rectify any weakness or defect in the manhole under test, such work or rectification to consist of repair or replacement or both. The manhole shall thereafter be refilled with water and retested in the manner specified. This process shall be repeated until a satisfactory test is obtained.

The Contractor will be paid once only for the hydraulic testing of any given manhole at the rate per manhole to be quoted by him in the Schedule of Quantities. The Contractor's prices for the hydraulic testing of manholes shall include for all arrangements for the supply of water for testing, the cost of water used in testing where the water is not obtained free of cost from the Employer, for all work of rectification, for retesting and for all labour required to carry out the specified tests.

PSLD 8 MEASUREMENT AND PAYMENT

PSLD 8.2.5 Inspection Chambers

Delete the first and second lines and substitute the following:

Separate items will be scheduled for manholes, backdrops and inspection chambers, etc of each type and of each depth (measured from top of cover to invert) in increments of 1,0 m for the first one metre, thereafter in increments of 0,5 m. The rate shall cover the cost of dealing with any excavation (in all materials, including backfilling and the disposal of surplus materials).

PSLD 8.2.6 Erf Connections

Add at end of Sub-Clause:

"or servitude boundary".

PSLD 8.2.11 Connection to Existing Sewers

The tendered sum is to include for breaking into the existing sewer manholes, dealing with the flow, caulking in the new pipe and for breaking out and reforming benching as required, making the manholes watertight.

PSLD 8.2.13 Intermediate and Hard Rock Excavation (New Sub-Clause)

Insert new Sub-Clause as follows:

"8.2.13 Extra over Item 'Manholes' above for:

(a) Intermediate excavation .....Unit : m³

(b) Hard rock excavation by **normal blasting** or other methods as selected by the contractor (see PSLD 2.3) .... … Unit : m³

(c) Hard rock excavation by **close proximity blasting** (see PSLD 2.3) .....Unit : m³

(d) Boulder excavation Class A .....Unit : m³

Separate items will not be provided for depth increments. Volumes will be computed from the plan area of either the intermediate or hard rock material, excluding the plan area of the specified pipe trench, which is within the area occupied by the manhole plus a side allowance of 600 mm, and the depth from the top of either the intermediate or hard rock material to the bottom of the same material or to the underside of the Manhole base slab, whichever is the lesser.

The rates shall cover the additional cost of the excavation and handling of the more difficult material and the disposal of material".

C3.7.10 PROJECT SPECIFICATIONS: PSGA: CONCRETE (SMALL WORKS)

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C3.7.10 PROJECT SPECIFICATIONS: PSGA: CONCRETE (SMALL WORKS) (Applicable to SABS 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

PSGA 3 MATERIALS

PSGA 3.2.1 Cement

Add to the Sub-Clause :

Unless agreed to otherwise by the Employer's Agent, the cement used on the works shall be Ordinary Portland Cement.

PSGA 3.4.5 Sand

Add new Sub-Clause :

Sand from a source selected by the Contractor and approved by the Employer's Agent after testing will be used under this Contract.

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

Add "(with a tolerance of +10 mm -0)", between "30 mm", and "unless" in the second line of the Sub-Clause.

In second line read "40 mm" for "30 mm"

PSGA 5.2.1 Classification of Finishes

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

PSGA 5.2.1(a) Classification of Finishes

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 5.2.1(b) Classification of Finishes

Add to the Sub-Clause :

The finish of the concrete is to be within the tolerances of Degree of Accuracy II 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 5.4.1.2 Consistency

Delete the third line and substitute the following :

Employer's Agent in respect of prescribed mix and/or strength concrete.

PSGA 5.4.1.4 Prescribed Mix Concrete

Delete the Sub-Clause and substitute the following :

The grades of prescribed mix concrete are designated Grades 20, 15 and 10 and are composed of cement, sand and stone, as specified hereinbefore, proportioned as follows:

Grade	Size of Stone (mm)	Cement (kg)	Sand (m^3)	Stone (m^3)
20/19	19	50	0,110	0,140
15/19	19	50	0,130	0,140
10/38	37,5	50	0,160	0,200

While the proportion of cement to the combined quantity of sand and stone must remain constant for each grade of concrete, as set out above, the relative proportions of sand and stone are to be adjusted, if required by the Employer's Agent, so as to obtain the most suitable consistency of concrete, due allowance being made for the bulking of sand due to moisture.

The addition of water shall be regulated by the use of properly calibrated containers, only sufficient water being added as will, in the opinion of the Employer's Agent, afford a workable mix.

The fine and coarse aggregates approved for use in strength concrete Grades 30 and 25 are to be used for prescribed concrete mixes Grades 20 and 15.

PSGA 5.4.1.5 Strength Concrete

Delete the Sub-Clause and substitute the following :

The grade of strength concrete is designated Grade 25 and is composed of cement, sand and stone, as specified hereinbefore proportioned as follows:

Grade	Size of Stone (mm)	Cement (kg)	Sand (m^3)	Stone (m^3)
25/19	19	50	0,095	0,125

The concrete mix for the abovementioned grade of strength concrete is to be designed by an approved laboratory. At least four weeks before placing any concrete on the Works, the Contractor shall supply and deliver to the approved laboratory, at his own cost, samples of the aggregates he proposes to use in the concrete mix. While the proportion of cement to the combined quantity of sand and stone will remain constant for each grade of concrete, as set out above, the relative proportions of sand and stone may be adjusted to achieve the required strength. The laboratory will be bound by the requirements of this Specification which are to guide the Tenderers in pricing the grade of strength concrete. The Contractor is to allow in his rate for strength concrete an amount to cover the fees and charges levied by the approved laboratory in designing the strength concrete mix.

PSGA 5.4.1.6 Ready-mixed concrete

Delete the Sub-Clause and substitute the following :

Concrete produced at a central concrete production facility other than at the site of the Works shall only be accepted for use in the Works with the prior and express approval of the Employer's Agent. When such approval has been given the Employer's Agent shall then decide whether or not to accept the test results obtained by the facility concerned.

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 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 20 x 20 mm"

PSGA 8.4.1 Prescribed Mix Concrete

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

C3.7.11 PROJECT SPECIFICATIONS: PSLG: PIPE JACKING

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C3.7.11 PROJECT SPECIFICATIONS: PSLG: PIPE JACKING (Applicable to SABS 1200 LG – 1983)

PSLG 2.3 Definitions

Add the Sub-Clause:

The Works shall mean all the features making up the entire jacking operation including construction of both jacking (thrust) and receiving pits as well as the excavation placing and jacking of the pipes together with all support activities.

PSLG 3 MATERIALS AND WORKMANSHIP

PSLG 3.1 Pipes for Jacking

Delete the Sub-Clause and substitute with the following:

Pipes for jacking shall be SC Type reinforced concrete manufactured in accordance with SABS 677: Concrete non pressure pipes as published in General Notice 463 of 9 July 1982 to the D load specified on the drawings. All pipe joints shall be sealed. The actual diameters of the pipes shall not be less than the nominal diameters given on the drawings or stated in the schedule.

In addition to withstanding the specified two (or three), edge bearing test-load, the pipes shall be capable of withstanding, without damage during jacking, the maximum longitudinal force to be transmitted by the Contractor's jacks and method of installation.

The design of the pipes shall be determined by the Contractor to suit the proposed method of construction but shall not be less than the class of pipe or type of pipe stated on the drawings or determined by the Employer's Agent. The pipes shall incorporate extended modified Ogee type joints which shall be seated by means of a rubber ring. On the longer pipe jacks it may be necessary to use a rebated butt joint to withstand the higher jack forces. However, the decision of type of joint to use is that of the Contractor. Irrespective of joint type used the Contractor must adhere to the joint sealing details given in PSLG 3.1.2 below.

At least one hole shall be formed in the crown of each 1,2 m long pipe to allow for the injection of both a lubricant, if required, and a final grout. The final layout of grout holes is the Contractor's responsibility.

The Contractor must ensure that the pipes shown on the drawings and mentioned in the documents can be jacked the full distance shown on the drawings.

PSLG 3.1.1 Intermediate Jacking Pipes (New Sub-Clause)

In circumstances where it is necessary or desirable to use jacking pipes intermediate between manholes or junctions, the number and type of such intermediate jacking pipes is to be determined by the Contractor. The joint between pairs of intermediate jacking pipes shall be protected externally by a cylindrical mild steel sleeve of wall thickness at least 8 mm, which shall overlap the pipes on either side of the joint for a distance of at least 150 mm. The joint is to allow a substantial and permanent caulked seal within the joint.

PSLG 3.1.2 Joints and Seals (New Sub-Clause)

It is the Contractor's choice as to type of joint used in the pipes to be jacked. However, applied forces used to jack the pipes must be uniformly distributed around the joint to avoid damaging the joint. Pipes that are delivered to site with damaged joints must be rejected by the Contractor.

A seal is required at each joint to minimise ingress of water. Ingress of water into the jacked pipes stemming from the joints shall not exceed 5 litres per minute in total. The chipboard packing used to distribute stresses on the joints should be raked out to a depth of 25mm on the inside all round and sealed with a durable flexible sealing agent such as bituseal, thioflex or similar.

PSLG 5 CONSTRUCTION

PSLG 5.1.1 Authority to Jack Pipelines Under Roads

The Employer will obtain permission from the relevant authorities for jacking under roads. However, the Contractor is to confirm that such permission has been granted before commencing work.

PSLG 5.1.2 Competence

Jacking and excavation shall be supervised and undertaken by persons fully conversant with this work. (Clause 4.11 of the GCC 2010).

PSLG 5.1.4 Contractor Solely Responsible

Add to the Sub-Clause:

No approval of any material or plant and its operation, or of any construction procedure to be used will imply any relaxation of the requirements governing the quality of the materials or of the finished work or relieve the Contractor of his/her responsibilities under the Contract.

PSLG 5.2.3 Recording Movements

PSLG 5.2.3.1 General

Delete the Sub-Clause and substitute with the following:

The Contractor shall take movement measurements correct to 1,0 mm of accuracy of any change in the line and level of road before the start of the Contract and at such intervals as directed by the Employer's Agent for a period up to 12 months after issue of the Completion Certificate. However, no more than 15 sets of reading will be required in this period. A copy of these measurement records shall be made available to the Employer's Agent. The cost of this work is deemed to be included in the tendered rates.

PSLG 5.2.3.2 Working under Roadways

Add to the Sub-Clause

The Contractor shall bear full responsibility for any consequential damage to persons and property resulting from subsidence.

PSLG 5.2.3.4 Remedial Measures (New Sub-Clause)

All remedial measures will be carried out and completed to the standards set by the various controlling authorities.

Remedial measures which shall include time related professional costs that may be required to reinstate roads and fill embankments will be for the Contractor's account.

Remedial measures include those relating to the need to rectify any settlement and movement of road surfaces, formation layers or fill embankments including providing all road safety markers, traffic control, or signs and al associated needs of the road authority to allow remedial work to proceed without danger to workers or traffic. The Contractor shall arrange all matters regarding remedial work with the road authority. In most instances these measures will comprise jacking up concrete roads using grout and regrading to original elevation formation layers and premix surfacing as well as mending drainage fixtures where these have been damaged. All the remedial work will be directed by the Employer's Agent to his/her satisfaction and approval.

PSLG 5.4 Excavation

PSLG 5.4.1 General

Except as required in terms of 5.2.5 SABS 1200 LG 1983 the provisions of SABS 1200 DA shall apply.

PSLG 5.4.2 Thrust Pits

In the second paragraph, delete the words “Factories, Machinery and Building Work Act, 1941 (Act 22 of 1941)” and replace with the words “Occupational Health and Safety Act 1995”
Add to the Sub-Clause :

Claims arising out of any accidents or incidents in or adjacent to these access pits will not be considered by the Employer.

Stormwater control measures around these pits are also necessary to prevent water ingress into the pits. Provision must be made by the Contractor to keep both thrust and reception pits free of seepage and stormwater.

Thrust pits will in general only be permitted at positions indicated on the drawings or where manholes or junctions are required. Jacking pits shall be of sufficient size to accommodate the jacking operation and any manhole structure to be constructed upon completion of the jacking. The approximate dimensions of the pits shall be agreed with the Employer’s Agent before work commences. The Contractor will be required to design and construct all thrust blocks, bases and other temporary works required to maintain the stability of the pits and shall demolish and remove these upon completion of the jacking operation and the Contractor shall take into account all such limiting factors when preparing his/her tender.

The tenderer’s attention is drawn to the fact that the Marine Drive operation is to be conducted in waterlogged ground and that the thrust pit will need to be close shored.

PSLG 5.4.2.1 Intermediate Jacking Pits (New Sub-Clause)

In circumstances where it is desirable to use jacking pits intermediate between manholes or junctions indicated on the drawings, the number and type of such intermediate jacking pits is to be determined by the Contractor. Such intermediate jacking pits will only be permitted where conditions of access and working space permit.

Full details of the intermediate jacking pits and the junction box constructed as a closure between the ends of the jacked pipes are to be submitted with the tender.

PSLG 5.4.3 Jacking of Pipeline

PSLG 5.4.3.1 General

Add to the Sub-Clause

A lead pipe with a rebated front end over which the trailing end of the shield is fitted should be the first concrete pipe used. This should minimise overbreak. No material may be removed in advance of the leading edge of the shield in unstable or loose materials.

As the pipe is advanced, excavation is to take place within the lead pipe under the full time supervision of a responsible foreman to ensure that the end of the shield is always fully plugged with earth at a safe angle of repose within the pipe. The Contractor shall ensure that there is not uncontrolled flow of sand, mud or earth into the pipe which could result in imperiling excavation personnel or the formation of cavities above or around the sleeve pipe. If at any stage during the jacking operation such conditions arise the Contractor shall immediately plug the pipe and stabilise the material before proceeding with further work.
Should it be necessary, the Contractor shall allow for stabilising the soil by dewatering, chemical grouting, or any other approved means. The design of the shield shall be such as to permit the face to be completely or partially closed by boarding or similar to control material flow from the

face.

During weekend or holiday stoppages the Contractor must make sure that a plug of soil is left in the shield.

PSLG 5.4.3.6 Continuous Jacking (New Sub-Clause)

In order to minimize problems due to the build up of skin friction on a static pipe, the pipes are to be jacked continuously unless agreed to otherwise with the Employer's Agent, allowing for overnight stoppage.

PSLG 5.5 Jacking Procedure

PSLG 5.5.1 Procedure

Add to the Sub-Clause:

Each jack shall be fitted with a pressure gauge suitable calibrated such that the actual jacking forces can be read at any time.

Suitable packing of hard materials shall be inserted between the abutting vertical ends of the pipes in order to transfer the jacking force. The packing shall constitute a complete circle and be sufficiently wide to transfer the applied load.

A suitable adjustable shield is to be fitted to the front of the lead pipe. The shield is to incorporate cutting edges which can be varied by control jacks to maintain the pipe on line and level.

Pipe jacking may generally be carried out either up-grade or down-grade to suit the Contractors requirements subject to the approval of the Employer's Agent, and provided that provision is made by the Contractor for the necessary drainage required.

PSLG 5.5.2 Lubrication of Structure During Jacking

Add to the Sub-Clause:

To ease pipe friction, the Contractor shall make provision for the injection of bentonite or other approved lubricant.

PSLG 5.6.1 Backfilling (New Sub-Clause)

Both thrust and reception pits must be backfilled using the removed material. Backfill compaction rates must not be less than 90 percent Modified AASHTO with the top 1,5m of backfill being compacted to a minimum 92% Modified AASHTO. The backfill must be built up to at least 500mm above the natural ground level to prevent stormwater pounding around the excavation pits.

PSLG 5.7 Grouting and Plugging

Add to the Sub-Clause:

In soft material the grout shall consist of cement/bentonite with a compressive strength of 5MPa at 28 days. In hard material and rock the grout shall consist of cement/sand with a compressive strength of 25 MPa at 28 days.

PSLG 5.9 Markers (New Sub-Clause)

On completion of the backfill the Contractor must place a marker concrete post (prestressed lintel) into the ground directly above the centre line of the pipe at the entrance. The post must stick 1,0m above the ground and at least be buried 1,5m in the ground. The top 0,5m of the post must be painted bright red.

PSLG 6 TOLERANCES AND MEASUREMENT

PSLG 6.2 Permissible Deviations

In the first line delete "100mm" and substitute with "50mm".

PSLG 6.4 Recording (New Sub-Clause)

Throughout the jacking operation the Contractor is requested to take and record the following measurements.

a) A plot of pressure (kN/m²) and total force (kN) originating from the combined force of all hydraulic jacks used to move pipes versus accumulative length of jacked pipe. As soon as a lubricant is used it must be recorded on the plot. If heavy ground water seepage is noted this must also be recorded on the plot. A time scale in days should also be used in conjunction with jacked length of pipe. It is also important to record start up force required to move pipes after a delay, ie after weekend.

b) The dimensions of the thrust block used must be recorded as well as the accumulative thrust force on the block (kN) together with lateral movement of the thrust block (mm).

PSLG 8 MEASUREMENT AND PAYMENT

PSLG 8.2.1 Jacking Establishment

In the second paragraph add the words "and any intermediate jacking pits" after the words "thrust and reception pits".

PSLG 8.2.6 Supply and Install Pipes by Pipe Jacking Method, Complete with Excavations

The rate shall cover the cost of all activities specified in 8.2.2, 8.2.3 & 8.2.4. The list of activities under PSLG 8.2.3: Jacking of Pipes in the first paragraph shall be read to include the addition of the word "Grouting" before the words "sealing grouting holes"

Add to the Sub-Clause:

The rate shall include for grouting all voids around the pipe annulus which are a result of the pipe jacking operation.

PSLG 8.2.9 Stabilisation of Unstable Areas or Grouting of Voids where Ordered

Delete the Clause.

PSLG 8.2.10 Standing Time for Pipe Jacking Gang and the Jacking Equipment

In the first paragraph, delete the words "Wage Act, 1957 (Act 5 of 1957)" and replace with the words "Basic Conditions of Employment Act No. 75 of 1997".

PSLG 8.2.11 Survey

The unit of measurement will be per visit and set of readings taken (PSLG 5.2.3.1).

The rate shall cover for all labour, equipment, as well as plotting up of the reading for presentation to the Employer's Agent.

PSLG 8.2.12 Permanent Sealing

The unit of measurement will be linear metre of jacked pipe from open end to open end.

The rate will include all labour, equipment and materials to rake out and place a flexible seal in the pipe joints.

PSLG 8.2.13 Brick Wall Closure

The unit of measurement will be the number per jacked pipe diameter.

The rate shall cover all labour, materials and equipment used to construct the brickwork ends at each end of each jacked pipe after the installation of the steel water pipe through the sleeve.

The rate for foundations to brickwork walls shall be per cubic meter of concrete measured net as per design, including all excavation, formwork, backfill, etc to produce a complete foundation ready to receive the brickwork.

C3.8: PARTICULAR SPECIFICATION

C3.8 PARTICULAR SPECIFICATION

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C3.8.1 PARTICULAR SPECIFICATION: PA - VALVES

PA 1 GATE VALVES

PA 1.1 Wedge Gate Valves

Gate valves shall comply with SABS 664 for waterworks pattern wedge gate valves of the types, classes and sizes listed in the Schedule of Quantities and shall be provided with the following:

(a) Double Flanged

(b) Non-rising spindles

(c) Handwheels with the direction of rotation to close and open marked thereon (except where scheduled to be provided with caps).

(d) The direction of rotation for opening the valve shall be anti-clockwise when viewed from the top. The direction of opening or closing each valve and the appropriate words shall be embossed on the cap and superfluous arrow heads shall be completely ground off the castings.

(e) Type B gunmetal trim.

(f) The facility to permit repacking of the gland whilst the valve is under pressure.

(g) The valves shall be subjected to both the "closed end" test and the "open end" test. The test pressure for the open end tests shall be one and half times the rated working pressure of the valves, and for the body twice the rated working pressure. There shall be no leakage under any of the above test conditions.

(h) Each gate valve shall be capable of being opened and closed by one man using a tee key when the unbalanced head on the gate is equal to the open end test pressure. The total effort required to operate the valve shall not exceed 400 N (representing a simultaneous push/pull of 200 N) on the ends of a tee key 900 mm long.

(i) Except where otherwise stated, the flanges are to be in accordance with and drilled off-centre to SABS 1123, Table 1600, 2500 or 4000 as scheduled. The non-rising spindle shall be bronze or stainless steel and the spindle nut either bronze or gun metal.

(j) A complete specification, accompanied by drawings, is to be submitted at the time of tendering. Rates for all the gate valves shall include for testing and supply of test certificates, copies of which shall be attached to each relevant invoice and to each relevant invoice and to each copy of each invoice. The open end test pressure shall be stamped on the top of one flange of each valve. No payment will be made for valves unless the test certificates have been submitted. Valves not complying with SABS 664 will be considered as an alternative offer provided full technical details are submitted with the tender.

After completion of the factory tests, all valves shall be thoroughly cleaned and painted in accordance with Clause PA 4.

PA 1.2 Resilient Seal Gate Valves

Resilient seal gate valves (RSV) shall comply with SABS 664 (latest amendment) with classes and flange drillings as detailed or scheduled elsewhere.

The typical application for resilient seal valves is for valves in “normally open” locations (e.g. air valves, isolating valves, in-line valves <250 NB where the maximum differential pressure across the valve is not likely to exceed 16 Bar under normal operating conditions. Resilient seal valves shall not be used in terminal positions (e.g. ad scour valves) without the approval of the Employer’s Agent.

In addition they shall comply with the following:

a) General

Gate valves shall be double flanged and be resilient seated and shall be of the non-rising spindle type.
The valves shall be capable of sealing drip tight bi-directionally over the full range of pressures from zero to maximum working pressure.

b) Gate design

The gate shall be fully rubber encapsulated inside and out to ensure drip tight sealing and to avoid corrosion and shall be provided with a 10 year replacement warrantee. The gate shall further have a drain hole, preventing stagnant water or impurities from collecting.

Rubber utilised in the coating of the wedge shall be inert and shall not impart odour, taste and colour and shall be suitable for drinking water applications. The gate nut shall not be fixed to the wedge, thereby reducing opening torques.

c) Gate and Body Design

The gate shall have optimally placed guides of ware resistant plastic so as to reduce the torques as well as to reduce wear between the rubber and the coating on the body. The bore of the body shall be straight through design in order to allow cleaning with a badger.

d) Valve Bonnet

The valve shall utilize 3 independent bonnet seals which shall include a set of stem steels embedded in non-corrosive material, a back seal to prevent leakage when changing seals and wiper ring to protect against debris entering the valve.

Two friction washers (sizes 50 mm to 200 mm) and thrust ball bearings (250 mm to 600 mm) shall be incorporated to ensure smooth spindle operation as well s to reduce opening and closing torques.

e) Spindle

Spindles shall be made of stainless steel. The stem threads shall be rolled to maintain steel structures and increase strength and to ensure smooth thread edges and consequently a low operating torque. The spindle seat shall consist of 2 nitrile rubber O rings located in a corrosion resistant housing. A wiper ring shall also be provided.

f) Body and Assembly

The rubber bonnet gasket shall fit in the recess in the valve bonnet preventing blow out of the seal under surge conditions. The bonnet bolts shall pass through the gasket and be sunk into the bonnet and be sealed for corrosion protection.

An edge protecting ring shall permanently be fitted around the body of the bonnet joint in order to protect the coating during transportation and installation. The body of the valve shall be fusion bonded epoxy coated to a minimum D.F.T. of 250 microns.

Unless otherwise specified caps for key operation will be required for buried valves and handwheels on valves situated in accessible chambers. Extension spindles and brackets shall be provided where detailed and handwheels shall be clearly marked with the direction of opening.

PA 2 REFLUX VALVES

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

PA 3 AIR VALVES

PA 3.1 General

The materials and workmanship employed in the manufacture of air valves shall be of a similar standard to that set out in SABS 664 for waterworks pattern gate valves and they shall be provided with individual test certificates for each valve from the manufacturer; all valves are to be inspected, and the hydraulic tests witnessed, by an Inspector to be appointed by the Employer's Agent, and the tendered rates for the valves shall include for making arrangements for independent inspections. The Inspectors' fee and recoverable expenses will be for the account of the Employer, fees and expenses arising from abortive or repeat visits due to non-compliance with the specified requirements will be for the Contractor's account and will be deducted from amounts due to the Contractor.

PA 3.2 Types of Air Valves

PA 3.2.1 Air Valves shall be fully stainless steel (including all flanges, bolts, nuts, studs etc), of the double orifice type, and shall be equal or similar to the "Variant LW", "Exair Series I" or the "Vent-O-Mat" (RBX series) type in which a small orifice, manufactured from Grade 316 stainless steel and having a minimum orifice size of 2,0 mm diameter, shall be capable of releasing accumulations of air at all pressures throughout the specified working pressure range and shall be drop-tight at the specified minimum working pressure. The large orifice shall be suitable for admitting or expelling large quantities of air during emptying and filling of the pipeline. The opening of the valve (to atmosphere) shall be enclosed by a stainless steel mesh which has been fixed into the valve body to prevent the entry of small insects or vermin into the valve. The valves shall be fitted with graphite gaskets.

PA 3.2.2 All welding of stainless steel shall be carried out in workshops dedicated to the fabrication of stainless steel products. Care shall be taken that the correct welding rods and approved welding procedures have been used for each application, and the Employer's Agent shall have the right to request a certificate from the manufacturer in which the weld procedures used for the manufacture of valves supplied are stated.

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

PA 3.3 Testing

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

(a) First, fill the valve with water and apply the factory test pressure through the inlet of the valve. Under this condition there shall be no weeping from any part of the valve.

(b) Second, drain the valve and refill the valve with water and apply the maximum working pressure through the inlet of the valve and maintain for at least five minutes. Under this condition there shall be no loss of water from the valve.

(c) Third, gradually reduce the pressure applied under (b) above to atmospheric pressure, empty the valve and refill slowly expelling the air through the valve until it is full of water. Raise the pressure to the minimum working pressure, maintain that pressure for at least five minutes and again there shall be no loss of water from the valve.

(d) Fourth, maintain the minimum working pressure applied in (c) above, isolate the water inlet and introduce small amounts of compressed air into the valve without lowering the pressure in the valve. The lower float shall drop away from the upper float when sufficient air has accumulated in the valve. As soon as the accumulated air in the valve has discharged through the small orifice, the valve shall again close to a watertight condition. This process shall be repeated for at least five different pressures which are equally spaced between the specified minimum and maximum operating pressures, and the valve shall close automatically when all the air has escaped without any dribbling and shall have a drop-tight shut-off.

PA 3.4 Table of Particular Requirements for Air Valves

Description	Data		
Nominal diameter (mm)	25	50	80
Class	16	16	16
Flange Size and Rating	SABS 1123 Table 1600	SABS 1123 Table 1600	SABS 1123 Table 1600
Flange Drilling	SABS 1123 Table 1600	SABS 1123 Table 1600	SABS 1123 Table 1600
Factory Test Pressure (metres head of water)	320	320	320
Working Pressure (metres head of water) :			
(a) Maximum	100	100	100
(b) Minimum	10	10	10

PA 4 PAINTING OF VALVES

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

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

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

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

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

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

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

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

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

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

PA 5 PAYMENT

The price quoted for all valves are to include for independent factory testing of valves, which test will be witnessed by Inspectors appointed by the Employer's Agent.

C3.8.2 PARTICULAR SPECIFICATION: PB – DISINFECTION OF PIPELINE

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C3.8.2 PARTICULAR SPECIFICATION: PB – DISINFECTION OF PIPELINE

PB 1 INTRODUCTION

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

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

PB 1.1 Scope of the Code of Practice

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

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

PB 1.2 Definitions

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

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

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

PB 1.3 Hygiene

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

PB 1.4 Safety

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

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

PB 2 GENERAL REQUIREMENTS FOR DISINFECTION OF POTABLE WATER APPARATUS

PB 2.1 Components and Equipment

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

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

PB 2.2 Completed Installations

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

During chlorination the pipeline shall be kept full of water.

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

PB 2.3 Portable Test Equipment

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

PB 3 MAINS

PB 3.1 New Mains

PB 3.1.1 Introduction

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

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

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

(a) swabbing and flushing of the main

(b) soaking of the main for a minimum period of **20 hours**, using a minimum concentration of **20 mg/ℓ** of available chlorine in mains water.

(c) removal of excess chlorine by flushing the main

PB 3.1.2 Pressure Testing

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

PB 3.1.3 Swabbing and flushing

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

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

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

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

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

PB 3.1.4 Chlorination

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

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

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

- Pour 1 litre of hypochlorite solution for each 1 m³ of pipeline, into the end of the pipe upstream of the final connection.
- Insert the swab into the end of the upstream pipe to retain the hypochlorite solution.
- Make the final connection.
- Drive the swab past the final connection and along the pipeline, but do not allow the swab to travel at a speed greater then 0,3 metres per second (20 m per minute).
- Remove the swab and flush the main for 25 minutes.
- Close up the main prior to soaking and sampling in accordance with section PB 3.1.6.

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

50 mm - 100 mℓ, 75 mm - 200 mℓ, 100 mm - 500 mℓ,

150 mm - 900 mℓ, 200 mm -1600 mℓ, 250 mm - 2500 mℓ.

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

PB 3.1.5 Sampling for Bacteriological Analysis

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

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

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

Then pressurise the main and take samples for bacteriological analysis in accordance with the procedure given in section PB 3.1.6. Take these samples from sampling points agreed with the Employer's Agent Representative.

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

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

Repeat the above process until disinfection criteria have been satisfied.
The costs of all necessary testing are to be borne by the Contractor.

PB 3.1.6 Sampling Points

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

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

PB 3.1.7 Temporary Cross Connections and Final Connections

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

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

PB 4 DOSAGE OF CHLORINATING AGENTS

PB 4.1 Sodium Hypochlorite Solution

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

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

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

PB 4.2 Chlorine Gas

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

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

PB 4.3 Bleaching powder, granules and tablets

Bleaching powders, granules or tablets based on Calcium hypochlorite contains 50% to 70% of available chlorine by weight. These materials must be stored under dry conditions. During storage some available chlorine is lost. Follow the manufacturer's instructions particularly concerning the shelf life of the material and dose rate of the tablets.

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

PB 4.4 Dose rates

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

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

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

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

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

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

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

PB 5 DISPOSAL OF CHLORINATED WATER

PB 5.1 Introduction

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

PB 5.2 Methods of Disposal

PB 5.2.1 Overland

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

PB 5.2.2 Foul sewers

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

PB 5.2.3 Watercourses

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

PB 5.2.4 Disposal of large volumes

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

PB 5.3 De-chlorination

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

PB 6 QUALITY STANDARDS AND REPORTING PROCEDURES

PB 6.1 New Mains

PB 6.1.1 Bacteriological Standards

No coliform organisms shall be detected in 100 mℓs of the sample.

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

PB 6.1.2 Procedure for Unsatisfactory Samples

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

PB 6.1.3 Physical Standard

If the sample is unusually coloured, turbid or frothy flush the main until acceptable. If this condition is

severe, re-sample the main but do not put into service until the samples have passed the required standards.

PB 6.2 Reporting Procedure

Records of disinfection are to be handed to the Employer's Agent Representative.

C3.8.3 PARTICULAR SPECIFICATION: PAA – DAYWORKS SCHEDULE

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C3.8.3 PARTICULAR SPECIFICATION : PAA - DAYWORKS SCHEDULE

PAA 1 GENERAL

In cases where the Employer's Agent orders any variation in the form, quality or quantity of the work or any extra work to such an extent that the tendered rates for specific items are no longer applicable, or where a combination of tendered rates cannot be applied to compensate for such work, the Employer's Agent may, in terms of the General Conditions of Contract, order that the amended or extra work be carried out as daywork at the cost of labour, plant and materials. For that purpose provision is made for the Contractor to tender his rates for labour and plant in the Daywork Schedule which forms part of this contract.

No work will be measured as daywork unless:

(a) the Employer's Agent agrees that the varied work is not in accordance with the specification or scope of a measured item in the contract;

(b) the Employer's Agent has issued an order in writing for the execution of such varied work; and

(c) statements of plant and labour are submitted daily to the Employer's Agent for his consideration and approval.

All work valued at the tendered rates in the Daywork Schedule will be subject to contract price adjustment as applicable to the Contract.

PAA 2 SALARIES AND WAGES OF WORKMEN

The amount to be paid for labour will be based on the rates tendered in the Daywork Schedule for the workers executing the work. The tendered rates shall be all-inclusive and shall be held to cover all charges for the Contractor's profits, timekeeping, clerical work, insurance, establishment, superintendence, the use of hand tools, etc, and no additional surcharge over and above the tendered rates will be applicable.

PAA 3 CONSTRUCTIONAL PLANT

The rates for constructional plant as tendered in the Daywork Schedule shall cover all costs, overheads and profit for the contractor and no further surcharge will be payable on the tendered rates. The cost of operators shall be included in the tendered rates except where otherwise specified in Clause PSAA 5 (Measurement and Payment) hereafter.

Where plant or equipment for which no rates exist in the Daywork Schedule are employed, the cost thereof shall be determined as agreed with the Employer's Agent in terms of the General Conditions of Contract. In such case contract price adjustment will only be applicable if the agreed cost is based on rental rates at the time of the base month before closing of tenders, or if the ruling rates current at the time of the execution of the work are de-escalated to the base month.

The Contractor will be paid for the transport to and from the site of constructional plant not on site and specially ordered by the Employer's Agent to be brought on site. No payment will be made for transport of equipment listed in the Contractor's Schedule of Constructional Plant in the tender document, or for equipment which has been removed from the site on request of the Contractor, or for equipment already on site, regardless of whether it appears on the Schedule of Constructional plant or not.

PAA 4 MATERIALS

Materials required for daywork items which cannot be compensated under existing rates and have to be purchased, will be paid for at cost, excluding VAT, plus a surcharge of 15%. The cost of materials provided for daywork at current rates at the time when the work is executed, will not be subject to contract price adjustment unless the prices of the materials are de-escalated to the base month for escalation.

PAA 5: MEASUREMENT AND PAYMENT

Item	Unit of Pressure

PAA 5.1Labour

(a) Unskilled workers ..... /hour (h)

(b) Skilled workers (Artisans) ..... /hour (h)

(c) Operators and drivers (where measured separately) ..... /hour (h)

(d) Foremen ..... /hour (h)

(e) Supervisor ..... /hour (h)

(f) Artisan ..... /hour (h)

The unit of measurement is the hour or part thereof during which workers were engaged in daywork.

The tendered rate shall include full compensation for all salaries, wages, bonuses, pension, insurance, medical aid and other benefits as well as overheads arising from administrative personnel, site agents, supervisors, tools and profit. No surcharge will be paid on the tendered rates

The cost of operators included in the rates for constructional plant, will not be measured again under Labour.

PAA 5.2 Constructional Plant

Item	Unit of Measurement

(a) TLB ..... /hour (h)

(b) Excavator ..... /hour (h)

(c) Wacker ..... /hour (h)

PAA 5.3 Cost of materials delivered to site (specify) …… Provisional sum or as scheduled

The unit of measurement for sub-items 5.2(a) to (e) is the hour or part thereof during which the item of plant had been in active use for the daywork operation, including stopping time of less than five minutes.

Where applicable travel time to and from the normal parking position on site, or the position of the most recent non-daywork activity, as well as stopping time exceeding five minutes shall be multiplied by a factor of 0,6. Time shall be measured by means of a vibrating clock card.

The unit of measurement for sub-item 5.2(f) is the kilometre travelled to collect or transport small quantities of materials. Kilometres travelled in light delivery vehicles by supervisors in the execution of normal supervision duties, shall not be measured for payment.

The tendered rates shall include full compensation for the supply, maintenance, service, repairs, depreciation as well as fuel, lubricants, licensing, insurance, overheads and profit. It shall also include the cost of drivers and operators except in the case of sub-item PAA 5.2(c) and (d) where the operators of tools are paid for under labour.

PROJECT SPECIFICATION

PORTION 2: PARTICULAR SPECIFICATIONS

PE THE EMPLOYER'S PRE-CONSTRUCTION HEALTH AND SAFETY SPECIFICATION

PE 1 INTRODUCTION

PE 1.1 Purpose and Scope

This document describes the procedure upon which the COMPANY shall comply with the requirements set out in the employer's Health and Safety Specification. This document defines the Management System that is implemented by the COMPANY for the management of Health and Safety on the project, which includes ensuring subcontractor compliance with the same standards.

The aim of this document is to present the safety aspects that will be controlled and managed on the project.

PE 2 REFERENCE DOCUMENTS

- Occupational Health and Safety Act, (Act No. 85 of 1993)
- Compensation for Occupational Injury and Diseases Act.
- Client Health and Safety Specification.
- Construction Regulations 2003.
- The Construction Kit. (CD)

PE 3 DEFINITIONS

The following definitions will apply to the Safety Management Plan, acronyms given hereunder shall apply:

Construction/Building Work (as defined by the Occupational Health and Safety Act: Construction Regulations 2003):

Means any work in connection with –

a) The erection, maintenance, alteration, renovation, repair, demolition or dismantling of or an addition to a building or any similar structure;

b) The installation, erection, dismantling or maintenance of a fixed plant where such work includes the risk of a person falling;

c) The construction, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system or any similar civil engineering structure; or

d) The moving of earth, clearing of land or making of an excavation or work on any similar type of work.

Hazard Identification and Risk Assessment and Risk Control (HRA)

Means a documented plan, which identifies hazards, assesses the risks and detailing the control measures and safe working procedures, which are to be used to mitigate and control the occurrence of hazards and risks during construction or operation phases.

Site

Means the area in the possession of the Contractor for the construction of the works. Where there is no demarcated boundary it will include all adjacent areas, which are reasonably required for the activities for the Contractor, and approved for such use by the Engineer and/or client.

The Act

Means, unless the context indicates otherwise, the Occupational Health and Safety Act, 1993 (ACT NO. 85 of 1993) and Regulations promulgated there under. (OHSA)

Hazard

Means a source of or exposure to danger (source which may cause injury or damage to persons, or property).

Risk

Means the probability or likelihood that a hazard can result in injury or damage.

Contractor's Responsible Person / s

Means any person appointed in writing by the Contractor to supervise construction or building work. The appointment shall be as required by the OHSA which shall stipulate health and safety responsibilities, area of responsibility and the proposed duration of the project.

Hazardous Chemical Substance (HCS)

Means any toxic, harmful, corrosive, irritant or asphyxiant substance, or a mixture or substances for which an occupational exposure limit is prescribed, or an occupational exposure limit is not prescribed, but which creates a hazard to health.

Construction Plant (TEM)

Encompasses all types of plant including but not limiting to, cranes, piling frames, boring machines, excavators, dewatering equipment and road vehicles with or without lifting equipment.

Contractor

Means "subContractor".

Health and Safety Program

Encompasses the COMPANY safety planning spreadsheet.
Health and Safety Plan (HSP)

The content of this document which will be made available on site for inspection by an inspector, Technical Officer, Agent, subContractor, employee, registered employee organisation, health and safety representative, or member of the health and safety committee.

Health and Safety File

Describes the safety file holding all records on health and safety for the project, which shall be available at all, times for evaluation, and copy of which will be forwarded to the client upon completion of the project.

PE 4 RESPONSIBILITIES

PE 4.1 Notification of Intention to Commence Construction Work

The Provincial Director of the Department of Labour shall be notified by the appointed safety consultant to the COMPANY, immediately upon receipt of the Letter of Acceptance of project commencement in accordance with the following requirements:

- The demolition of a structure exceeding a height of 3 meters; or
- The use of explosives to perform construction work; or
- The dismantling of fixed plant at a height greater than 3 meters; or
- The work exceeds 30 days or will involve more than 300 person days of construction work; and
- Includes excavation work deeper than 1 meter; or
- Includes working at a height greater than 3 meters above ground or a landing.

A copy of the notification letter to the Provincial Director shall be forwarded to client for their records and shall be made available to an Inspector, Project Engineer or employee.

PE 4.2 Assignment of Contractor's Responsible Persons to Supervise Health and Safety on Site

The Contracts Manager and Site Agent shall ensure copies of all the appointment letters of the responsible persons appointed on site will be made available to the client and that all legal appointments shall be conducted in accordance with the requirements set out in the OHSA and Client specifications.

The above shall also be imposed upon all subContractors.

PE 4.3 Safety Officer Appointment

A part--time Health and Safety consultant shall be appointed upon commencement of the project.

The safety officers shall be tasked with monthly inspections of the site, the results of which shall be forwarded to the client or his appointed representative.

PE 4.4 Risk Assessment Competent Person

The Project Manager shall appoint a competent person in writing at commencement of the project to control the risk assessment process on site. A copy of the risk assessment appointment is attached with duties and responsibilities defined. (Annexure E)

PE 4.5 Competency for Contractor's Responsible Persons

The Project Manager acknowledges that all management personnel (responsible for health and safety) shall undergo a half-day Health and Safety Management Course, which is to be arranged and conducted by the appointed safety consultant prior to commencement of activities on site.

PE 4.6 Health and Safety Representatives

At least one (1) Health and Safety Representative shall be nominated, elected and trained to carry out his / her functions in his / her area of responsibility. This will include areas where less than fifty (50) employees are engaged in activity. Employees elected shall be designated in writing for a specific area and period of time.

The designated persons shall conduct monthly inspections within their area of responsibility, the records shall be kept for auditing and that deviations recorded are reported to the responsible supervisor within the designated persons area so that appropriate action can be taken.

The designated person/s shall be permitted to participate in the Health and Safety Committee Meetings.

PE 5 OBJECTIVES AND TARGETS

- Compliance with the COMPANY Health and Safety Policy.
- Everyone is responsible for organising accident prevention at his or her own level on site.
- Safety training is important.
- Prevention.
- Working safely ensures your job.
- The COMPANY management commits itself to the objectives and targets.
- Disabling Injury Frequency Rate (DIFR) of 2.0 or less.
- 90% compliance on monthly Health and Safety Audits.
- Compliance with the legal requirements set out in the Occupational Health and Safety Act 85 of 1993, (OHSA) and Regulations.
- Compliance with the Client's Safety Specification for Construction.

PE 6 PLANNING AND PROCEDURES

The procedures to be used for the project are to be in accordance with the Safety Manual in use in the COMPANY under the guidance of the appointed safety consultant.

The sub-headings covered under the Safety Manual are as follows:

- Administration
- Appointments
- Safety Committees
- Registers, checklists and permits
- Incident Management
- Emergency Planning
- Contractors
- Risk Assessments
- Audits
- Hazardous substance control
- Training
- Mining Requirements
- Roads Requirements
- Planning

PE 7 IMPLEMENTATION OF THE OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION

The COMPANY is committed to implementing client specific safety specification on the project and is committed see that this forms an integral part of the project. It is our intention to make this specification part of other Contractors and Suppliers operating procedures.

PE 8 APPLICATION OF THE HEALTH AND SAFETY SPECIFICATION

PE 8.1 Compensation of Occupational Injuries and Diseases Act, Act No. 130 of 1993 (COIDA)

The letter of good standing will be available on site for reference purposes as proof of good standing.

The COMPANY shall ensure all Contractors also comply with the above requirements defined in the COIDA.

PE 8.2 Occupational Health and Safety Policy

The COMPANY Health and Safety Policy is attached for reference purposes. (Annexure A).

PE 8.3 Hazard Identification Risk Assessment

The Contract Manager shall ensure the Site Agent shall prior to the commencement of any construction work perform Hazard Identification, and the assessed risks shall form part of the health and safety plan applied on site.

A copy of the HRA shall be made available for viewing to the client.

The Site Agent shall ensure that all HRA's conducted will be conveyed to all personnel and Contractors through the site training program and that these training sessions will be presented by the competent person regarding the hazard and related work procedures before any work commences.

The HRA Team that will be established will comprise members as follows:

- Health and Safety Representative(s),
- Health and Safety Committee Member(s)
- Management Representative / Site Agent

Attached in the form of Annexure B and C, the Hazardous Task Identification and (HTI) and format of the Risk Assessment (RA) is included.

Method statements form part of the Risk Process and will conducted in accordance with the Risk Process described above.

Based on the activities carried out on all projects Hazard Investigation and Risk Assessments (HRA's) will be done. Examples of which are:
- Site Establishment
- Demolition works
- Excavation
- Concrete works
- Lifting operations
- Hand held tools
- Motorised Equipment

PE 8.4 Health and Safety Committee

The Project shall convene a health and safety committee meeting monthly. All members required to be in attendance shall be notified of such meeting by means of a formal agenda.
The Site Agent shall ensure an attendance register and minutes are kept for auditing purposes, and that a copy of the minutes be circulated to all members in attendance well before convening the next meeting and within 7 days, a copy of the minutes will be forwarded to the project engineer.

Members of the committee shall include the following and are not limited to:
- Safety Consultant. (When available)
- Contractor's site representative. (Supervisory level)
- Contractor's site representatives. (Operating level)
- Project Engineer nominated representative. (Co-opted status)

PE 8.5 Health and Safety Training

Training of personnel is a legal requirement and a necessity and is acknowledges as such. The Training Planning Matrix shall be provided upon request.

PE 8.5.1 Induction Training

Induction training shall be attended with the Client as well as the the COMPANY Induction program requirements and records of attendance kept to prove the same.

The COMPANY Induction format is attached for reference purposes. (Annexure D).

PE 8.5.2 Awareness Training

Weekly awareness training shall be conducted using the The COMPANY Toolbox Talk documents, which shall be conducted by the site supervisors. (Annexure E)

PE 8.5.3 Competency

Training identified through the Risk Assessment Process and conducted through this process shall be kept on file as proof of competency and training. (This may include operators).

PE 8.5.4 First Aid and Health & Safety Representative Training

All safety representatives elected and designated, including first aiders, shall be trained should they not already be in possession of a valid certificate of training proving competence.

PE 8.6 GENERAL RECORD KEEPING

The Site Agent shall ensure that all the Health and Safety records, required by both the Occupational Health and Safety Act, 85 of 1993 and Regulations are kept for reference purposes and auditing.

Further to the requirements set out above, the Site Agent will also maintain records that may be defined through the risk assessment process, for auditing purposes.

In accordance with the requirements set out in the Construction Regulations 2003 and the requirement set out in Client Specification the Site Agent shall ensure that a copy of all Health and Safety records generated during the course of construction, be handed over to the Project Engineer upon completion of construction.

PE 8.6.1 Statistics

The Site Agent shall ensure injury and incident records (Near Hits, First Aid, Medical cases, Disabling Lost Time Incidents), training etc. referred to above are kept on site. All documents shall be made available to the client for inspection including the Department of Labour's Inspectors as required by the Occupational Health and Safety Act, 85 of 1993.
The statistics formula as listed below shall be adhered to.

DIFR (Disabling Injury Frequency Rate) $\frac{\text{DI's x 1 000 000}}{\text{Man-hours}}$

DISR (Disabling Injury Severity Rate) $\frac{\text{Days Lost x 1 000}}{\text{Manhours}}$

PE 8.6.2 General Inspection, Monitoring and Reporting

The COMPANY shall comply with the requirements set out by the client. An agreed safety management plan must be prepared upon which the dates of inspections and training and awareness will be entered, conducted and monitored.

The COMPANY shall keep all records of inspections and investigations undertaken during the contract for the specified legal period as defined in the OHSA and Regulations.

PE 8.6.3 Internal Audits

Internal audits shall be conducted a minimum once per month by the project engineer, as well as the appointed safety consultant.

The Results shall be tabled and discussed at the Health and Safety Committee meetings.

The Audits to be conducted by the appointed safety consultant, shall be conducted on the audit schedule attached as per Annexure F.

Records of the audits shall be forwarded to the Project Engineer and shall be filed on site for reference purposes.

PE 8.7 Incentives

No incentive scheme is being identified unless required by the client.

PE 8.8 Penalties

Non-compliance with the client safety specifications can result in work stoppages and possible expulsion from site until the problem has been remedied including costs.

PE 8.9 Emergency Procedures

The Site Agent shall make available to the Project Engineer a detailed Emergency Plan to tie into the evacuation plan already in place on the client's premises.

PE 8.9.1 First Aid Box and Contents

The Site Agent shall ensure that all working areas area adequately provided with first aid attendants whether there are fifty (50) employees or less engaged on the contract. The First Aid attendant shall be trained in accordance with the requirements set out in the OHSA with recognised and accredited service providers as defined above.

Proof of training attended (certificate) shall be attached to the written acceptance of appointment. It will be the first aid attendant's responsibility to ensure the contents of the first aid boxes are monitored and inspections recorded on the contents of the first aid box register.

The first aid box shall be adequately stocked by The COMPANY at all times and will be accessible to all.

PE 8.9.2 Accident and Incident Reporting and Investigation

Should accident investigation need to be conducted, the Project Manager shall appoint a competent person in writing to conduct the said investigation. The procedure to be followed will be in accordance with the OHSA requirement on the Annexure 1 – Recording and Investigation of Incident form.

The Site Agent shall ensure that the results of all investigations are communicated to the employees engaged through incident recall and prescribed meetings. The Site Agent shall ensure that the investigations are kept for record purposes in accordance with the prescribed requirements set out in the OHSA and the company specific procedures.

Should there be an incident, the Project Engineer shall be notified within 48-hours if required by the client, of the occurrence. It is acknowledged that the client reserves the right to participate in all investigations into accidents or incidents.

PE 8.10 Hazards and Potentially Hazardous Situations

The Site Agent shall ensure that all other Contractors or Contractors are warned of hazardous or potentially hazardous situations, which may prevent them from effectively performing their duties, which includes the placement of adequate warning signs.

PE 8.11 Personal Protective Equipment and Clothing

The COMPANY shall comply with OHSA requirements to provide PPE.

The Site Agent shall through the Risk Assessment process identify the specific PPE needs per activity and then issue the PPE accordingly. (Reference to the OHSA General Safety Regulation 2 – Employer to provide Personal Protective Equipment).

Should PPE be lost or stolen, then the employee will be issued with a new set of PPE.

Should PPE be worn out or damaged, the user shall return the worn or damaged PPE and will be issued with a replacement set. Training in the use of this shall be provided. Overalls and hardhats shall be identifiable. (Principal Contractor different from the Contractors)

PPE shall be provided to visitors as well.

PE 8.12 Safety Signage

The Site Agent in conjunction with the appointed safety consultant shall assess the Health and Safety Signage requirement in conjunction with the Risk Assessments conducted and will place the signage at strategic positions on the site works.

The COMPANY shall also maintain the signage to ensure its effectiveness at all times and under all conditions. Signage, which cannot be repaired, shall be replaced.

PE 8.13 Permits

The COMPANY shall ensure that access to site works is restricted to construction personnel.

- All attempts will be made to restrict spectator access.
- Access to the site shall be by the Project Engineers (Clients) authorisation on the prescribed form. (Permits and ID cards shall be issued by the client)
- Special permits for hot work and isolation permits shall be applied for to the Project Engineer prior to commencing with the activity.

PE 8.14 Contractors and Suppliers

The Site Agent shall enter into an Agreement with Mandatary in terms of Section 37(2) of the Occupational Health and Safety Act, 85 of 1993, with all Contractors appointed by The COMPANY is entered into.

The Contracts Manager will ensure the Contractors are issued with the Client Safety Specification where reasonably practicable including any the the COMPANY Contractor pack for the project, should they not be contained in the Client Safety Specification.

The COMPANY shall assist and ensure the Contractors engaged comply with all of these requirements and adhere to the requirements set out in the OHSA.
Contractors will be stopped from working in the event of unsafe conditions and activities being observed.
All Contractors shall be covered by the COMPANY Safety Plan and will be issued the same.

PE 9 HEALTH AND SAFETY IN PRACTICE

PE 9.1 Excavations

The Site Agent shall ensure that all activities involving excavations, shoring, dewatering or drainage, a safe working procedure is submitted to the project engineer for approval prior to work commencing. Excavation work exceeding the specified depth as stipulated in the OHSA regulations, shall comply with the following requirements:

- The excavations are inspected before the shift starts, after heavy rain (inclement weather) and after any major condition which may effect the excavations stability and the findings are to be recorded and kept;
- All excavations regardless of the depth shall be adequately barricaded to prevent persons falling into the excavation;
- The safe working procedure shall be communicated to all employees who may be effected by the work; and
- The safe working procedures shall be enforced and maintained by the appointed excavation supervisor at all times.
- For high-risk activities, all personnel working in the excavation shall be attached by means of a lifeline.
- Material excavated shall be removed from the point of excavation.
- Ensure stability of adjoining structures.

PE 9.2 Demolition

No demolition work is being envisaged on this project.

PE 9.3 Explosives and Blasting

No blasting activities are envisaged on this project.

PE 9.4 Stacking of Materials and Housekeeping

The Site Agent shall ensure that all stacking will be supervised by a person competent to supervise over the activities, and that clearly defined and allocated storage areas are provided for and identified, and that materials being stored within this area are stacked in accordance with sound stacking principles of sort-by-sort, access to be maintained, level surface, and the height will not exceed three times the base width.

Housekeeping shall be maintained in accordance with the client requirements at all times.

PE 9.5 Hazardous Chemical Substances

The Site Agent shall ensure the necessary training and information regarding the use and storage of HCS is provided, and that the use and storage of HCS is carried out as prescribed by the HCS Regulations.

Furthermore, the Site Agent shall ensure that all chemicals brought to site have a Material Safety Data Sheet (MSDS) and the users are made aware of the Occupational hazards and precautions that need to be taken when using the chemical.

The First Aider shall be made aware of the MSDS and how to treat HCS incidents appropriately.

Access to all HCS records shall be afforded to the project engineer at all times.

PE 9.5.1 Fuel / Diesel

- Bulk storage areas shall be demarcated, secured and sign posted with the relevant warning pictograms.
- Bulk storage areas shall be bunded.
- Re-fuelling shall be conducted in designated re-fuelling areas only.
- Spill-kits shall be available at all times in these designated areas.
- The surface of the bunded areas and walls shall be of impermeable material.
- The bunded area shall be sloped towards a collection pit.

PE 9.6 Asbestos

No asbestos is to be used on this Project.

PE 9.7 Plant and Machinery

PE 9.7.1 Construction Plant

- All plant shall comply with the OHS Act requirements in relation to operation and maintenance thereof.
- Service and maintenance of the vehicles shall be of a high standard at all times.
- All plant shall subject to design be fitted with back-up alarms and audible indicating devices.
- The COMPANY shall ensure that all construction plants moving parts are adequately protected.
- Pre-start inspections shall be conducted on all motorised equipment daily, deviations of such inspections shall be recorded.
- Construction plant identified for use shall be operated by a trained and authorised operator.

- All construction plant shall be operated under the direct supervision of a person competent to identify potential hazards in the work he is conducting.
- Work involving the use of construction plant shall be conducted in accordance with an approved Risk Assessment.
- The Site Agent shall ensure all operators are equipped with the necessary PPE namely; safety shoes, overall, safety glasses, and gloves.
- Plant shall be fitted with an extinguisher where practicable.
- Washing shall be conducted in the designated washing areas.

The COMPANY shall ensure the all equipment moving to and from site is adequately secured, and that all Contractors abide by this requirement.

PE 9.7.2 Transport of Personnel

- Safe vehicular transport shall be provided for personnel working on the project to the workplace, which shall include proper seating, side restraints and cover.
- No personnel shall be permitted to travel on any plant or equipment on the site works.
- Road safety principles shall be adhered to on and off site.

PE 9.7.3 Vessels under Pressure (VuP) or Gas Bottles

The COMPANY shall ensure they comply at all times with the requirements of Vessels under Pressure Regulations, with specific reference to the following:

- Ensuring all Equipment owned and hired-in Vessels under pressure, comply with the 36-month pressure vessel inspection, and a certificate of testing is available on site.
- Ensuring that all personnel who shall use this equipment are competent and trained.
- Ensuring the users of this equipment are issued with the required PPE.
- Ensuring the area is adequately identified as a noise area and warnings are posted.
- Ensuring daily pre-start inspections are carried out on all the equipment and the findings recorded.
- Ensuring the correct fire prevention and fighting equipment is available at all times.
- Noise levels where possible shall be kept within reasonable operating norms.

PE 9.7.4 Fire Equipment

The Site Agent shall ensure the following all fire equipment to be used on site comply with the following:

- Extinguishers shall be placed in positions to ensure fast and easy access is maintained at all times.
- Placement of all extinguishers shall be depicted with the required pictograms.
- Extinguishers shall be serviced once annually, and after discharge or visible signs of depressurisation.
- The Site Agent shall ensure all employees are adequately trained in the safe use of the extinguishers.
- The Site Agent shall ensure a person is appointed to inspect the extinguishers on a monthly basis and the results of which are to be entered into a register designed for that purpose.

PE 9.7.5 Hired Plant and Machinery

The Site Agent shall ensure the following criteria is adhered to when considering hired plant and machinery:

- Only approved hire companies shall supply equipment to the site.

- Hired plant shall be checked for safety compliance prior to being accepted for use on site.
- Should hired equipment be accompanied by an operator, The COMPANY shall ensure that the operators competency be verified and the operator undergo an induction training session.
- The Site Agent shall ensure the operators of hired plant attend weekly toolbox talks in conjunction with The COMPANY site personnel.
- The Site Agent shall ensure that all operators are equipped with the required PPE before commencing work on site.

PE 9.7.6 Scaffolding / Working at heights / Fall Protection

Work involving scaffolding and work at heights shall comply with the requirements set out in the Construction regulations 2003 pertaining to these activities with reference to the SABS 085 code of practice.

Fall protection planning shall be done in conjunction with the risk assessment process.

All scaffold shall be erected under the control of a person trained and appointed to conduct such scaffold erection.

PE 9.7.7 Falsework / Formwork for Structures

Work involving scaffolding and work at heights shall comply with the requirements set out in the Construction regulations 2003 pertaining to these activities with reference to the SABS 085 code of practice.

PE 9.7.8 Lifting Machinery and Tackle

The Site Agent shall ensure that the use of Lifting Machinery and Tackle is done in accordance with the requirements of the Regulations, which include but is not limited to the following:

- Lifting machinery and tackle to be used on site shall be marked with the Maximum Mass Load (MML), which is the safe limit in which the equipment may be used.
- Inspections on Lifting Machines and Lifting Tackle shall be inspected once per month on the register provided and the findings recorded.
- Daily pre-start checks shall also be conducted on all Lifting Machinery and Tackle.
- Records shall be kept of all lifting machinery and tackle inspections and Load Tests.
- Load tests shall be conducted a minimum of once per annum, and a certificate of compliance shall be kept on record.
- A valid logbook shall be maintained for all lifting machinery, which will comply with a minimum six-monthly service and maintenance.
- Lifting machinery shall be operated under supervision at all times with a trained banksmen who shall inspect all tackle before each lift.
- All lifting equipment operators shall be trained once every two years and a copy of such training shall be attached to the appointment, which is to be made on site.
- The Operators shall be tested for medical fitness.

PE 9.7.9 Ladders and Ladder Work

The following requirements shall be complied with regarding Ladders and Ladder work:

- Ladders shall be clearly numbered, and inspected on the register provided.
- A competent person shall be identified and appointed as the ladder inspector.
- Where aluminium ladders cannot be used, then wooden ladders shall be straight grained, unpainted to allow for proper inspection of the grain for cracking.
- Ladders shall be secured at the top and chocked at the base to prevent slipping.
- Where chocking of the base is not possible, then the user shall ensure that the ladder is held in position by another employee when ascending the ladder.
- Ladders shall be inspected a minimum once per month by the person appointed as the ladder inspector.
- Proper storage shall be provided for all ladders when not in use.

PE 9.7.10 General Machinery

In accordance with General Machinery Regulation 2(1), The COMPANY shall:

- Ensure a competent person be appointed as defined in the above clause from the Occupational Health and Safety Act, 85 of 1993 and Regulations, to service and maintain all machinery in use on site.
- The COMPANY shall appoint additional competent persons to assist the competent person mentioned above in accordance with General Machinery Regulation 2(7)(a), as and when required.
- The COMPANY shall ensure that records are maintained of all services conducted.

PE 9.7.11 Lighting and Power

The Site Agent shall ensure lighting circuits and power circuits are fitted with suitable earth leakage systems in accordance with the client, which will include the following activities:

- Earth leakage system will be tested monthly.
- Malfunctions shall be repaired immediately or replaced.
- Lighting shall be so positioned as not to interfere with construction activities.

PE 9.7.12 Portable Electrical Tools / Explosive Power Tools

The Site Agent shall ensure the following procedure is adhered to regarding Portable Electrical Tools and Explosive Powered tools:

- Minimum compliance with legislation.
- Only competent persons shall be permitted to conduct routine and monthly inspections on the equipment.
- Persons competent to inspect the equipment shall be appointed in writing.
- Persons who are trained to operate such equipment shall be appointed and shall be the only authorised person to operate the equipment.
- The Site Agent shall ensure operation of the equipment is in accordance with the approved Risk Assessment and Safe Working Procedure set out.
- All users shall undergo regular awareness training to ensure compliance.
- The Site Agent shall ensure the required PPE and clothing is provided and maintained.

PE 9.7.13 Public Health and Safety

In the interests of public safety, The COMPANY shall ensure that all persons who may be affected by the work being conducted on site are informed and kept aware of the dangers, which may arise from the work being conducted on site.
This awareness shall be in the form of posters and inductions for visitors to site and warning signs.

PE 9.7.14 Night Work

Night work shall only be conducted upon approval of the project engineer, with the same safety standard being applied for these activities as with day work activities.

PE 9.7.15 Facilities for Safe Keeping / eating areas

The COMPANY shall ensure that adequate facility is provided for the personnel on site. The area shall be provide the following:

- Sufficient seating;
- Seating under cover;
- Protected change room;
- Toilets.
- Hand wash facility.
- Potable water.

No food preparation shall be conducted on site and designated eating areas will be made to allow adequate seating.

Waste bins shall be strategically placed and cleared regularly.

ANNEXURE A (Safety Policy)

CONTRACTOR TO PRODUCE AS SPECIFIED

ANNEXURE B (HTI)

HAZARDOUS TASK IDENTIFICATION (HTI)

Ser no:	INFORMATION REQUIRED	DETAILS	SIGNATURE
1	Name of contract:		
2	Date prepared:		
3	Prepared by:		
4	Name of person approving:		

Key Table	
0=	NONE
1=	LOW
2=	MEDIUM
3=	HIGH

Risk Assessment (RA) Code	LIST OF ALL STANDARD TASKS	What is the future potential that this task can cause further….								Total Score	Rating	Doc Required
		Is it a new or unusual task?	Is it a dangerous task?	Personal injury	Health risk	Impact on the environment	Property damage	Fire	Has the task caused previous injury / loss?	Yes = 3 / No = 0	0 - 7 Low risk, 8 - 17 Med risk, 18 -24 High risk	RA - Risk assessment, MST - Method statement
RA-1	Site clearing - manual labour & small tools	1	1	1	1	1	1	1	0	7	LOW RISK	MST
RA-2	Site clearing - using mechanical means									0	LOW RISK	MST
RA-3	Site establishment - FSM erection / dismantling									0	LOW RISK	MST
RA-4	Site establishment - Container store / office offload									0	LOW RISK	MST
RA-5	Excavations - using manual labour									0	LOW RISK	MST
RA-6	Excavations using motorised plan									0	LOW RISK	MST
RA-7	Excavations - working inside < 1.5 metres									0	LOW RISK	MST
RA-8	Excavations - working inside > 1.5 metres									0	LOW RISK	MST
RA-9	Batching plants - erection / dismantle									0	LOW RISK	MST
RA-10	Batching plants - general working and operation									0	LOW RISK	MST
RA-11	Concrete mixing - using manual labour									0	LOW RISK	MST
RA-12	Concrete mixing - using mechanical means									0	LOW RISK	MST
RA-13	Concrete pours - using lifting machinery (Cranes etc)									0	LOW RISK	MST
RA-14	Concrete pours - using motorised plant (dumpers etc)									0	LOW RISK	MST
RA-15	Concrete pours - using mechanical pump									0	LOW RISK	MST
RA-16	Lifting Equipment - Tower crane erection / dismantle									0	LOW RISK	MST
RA-17	Lifting Equipment - Tower crane operation									0	LOW RISK	MST
RA-18	Lifting Equipment - Mobile crane operation									0	LOW RISK	MST
RA-19	Lifting Equipment - Telescopic handler operation									0	LOW RISK	MST
RA-20	Lifting Equipment - Forklift operation									0	LOW RISK	MST
RA-21	Lifting Equipment - using lifting tackle									0	LOW RISK	MST
RA-22	Formwork - general erection / dismantling									0	LOW RISK	MST
RA-23	Formwork - lifting and placing large panels									0	LOW RISK	MST
RA-24	Formwork - work on support decks									0	LOW RISK	MST
RA-25	Scaffolding - erect / dismantle small scaffolds < 2 m									0	LOW RISK	MST
RA-26	Scaffolding - erect / dismantle large scaffolds > 2 m									0	LOW RISK	MST
RA-27	Scaffolding - use of mobile scaffolds									0	LOW RISK	MST
RA-28	Scaffolding - dismantling of scaffolding									0	LOW RISK	MST
RA-29	Demolition - using small electric breakers									0	LOW RISK	MST
RA-30	Demolition - using compressed air breakers									0	LOW RISK	MST
RA-31	Demolition - using motorised mechanical means									0	LOW RISK	MST
RA-31	Demolition - using explosives / blasting operations									0	LOW RISK	MST
RA-33	Trades - Brickwork operations									0	LOW RISK	MST
RA-34	Trades - Plastering operations									0	LOW RISK	MST
RA-35	Trades - Painting operations									0	LOW RISK	MST
RA-36	Trades - Ceiling operations									0	LOW RISK	MST
RA-37	Trades - Roofing installations									0	LOW RISK	MST
RA-38	Trades - glazing installations									0	LOW RISK	MST
RA-39	Trades - Tiling operations									0	LOW RISK	MST
RA-40	Trades - carpentry (Doors / windows)									0	LOW RISK	MST
RA-41	Trades - Metal work (Doors / windows)									0	LOW RISK	MST
RA-42	Trades - Steel erection									0	LOW RISK	MST
RA-43	Trades - plumbing									0	LOW RISK	MST

ANNEXURE C (Risk Assessment)

RISK ASSESSMENT

TASK / ACTIVITY NAME: | AREA:

Ser No.	Task Steps	Risks identified	A Probability	B Severity	C Frequency	D Risk Score	Rating	SWP Required	Immediate Action Required	Safe Working Procedure
1			4	4	6	14	HIGH RISK	✓		
2			6	6	6	18	HIGH RISK	✓		
3			4	4	6	14	HIGH RISK	✓		
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										

Methods Used to Minimise Risk		Most Critical Hazards		Control Methods		RA Committee	
Engineering Risk Out	☐	Fatigue	☐	PPE Selection	☐	Codes of Practice	☐	Name:	Sign:
Use of Specialized PPE	☐	Speed	☐	PPE Issue Records	☐	Supervisory Controls	☐		
Introduce Specialized Controls	☐	Engine Failure	☐	Signs at Area of Use	☐	Training of Personnel	☐		
Training	☐		☐	Safety Talks	☐	Training Records	☐		
	☐		☐	Safe Work Procedures	☐		☐		
	☐		☐		☐		☐	Approved:	Sign:
	☐		☐		☐		☐		

A Probability an accident may occur		B Severity		C Hazard Frequency		D Risk Score / Criticality	
6	Inevitable	6	Fatal and Permanent Dis	6	Arises every shift	14 to 18	High Risk
4	Probable	4	DLTI (50 000 - 499 999)	4	Arises every week	8 to 13	Medium Risk
2	Highly improbable	2	Medical Case (10 000 - 49	2	Arises every month	0 to 7	Low risk
0	No injury / loss	0	First Aid Case	0	Arises every year		

Probability	Severity 6	4	2	0	Frequency
6	18	16	14	12	6
4	16	12	10	8	4
2	10	8	6	4	2
0	6	4	2	0	0

ANNEXURE D (Safety Induction)

SAFETY INDUCTION	

OHS Act 85 of 1993 Sections 8 & 14

Requirements:

Every employer is required to take all reasonable measures to ensure that the requirements of the OHS Act, and regulations are observed. The general duties of employees are to carry out lawful instructions and to obey the Company's safety rules and procedures prepared in accordance with the provisions of the Act and Regulations. For this process to begin and to be formalized it is necessary for all employees to be formally inducted into the safety procedures and the completion thereof, formally acknowledged by both employer and employee.

ITEM COVERED	DONE YES/NO	REMARKS
Explain Company Policy / Site Safety Rules Provide copies of same		
Explain Section 14 of the Act		
Explain the use of Personal protective Equipment and procedures. Re: Issueing and maintenance		
Explain the meaning of symbolic signs		
Explain the procedure in the event of injury		
Explain the use of facilities and toilets		
Explain the danger of moving machinery. (DUMPER, MIXER, SKILLSAW, GRINDER Etc.)		
Explain the danger of hazardous substances (PETROL, DIESEL, OIL, GAS, PAINT Etc.)		
Explain specific Job Duties and Requirements		
Introduce : Supervisor, safety Representatives, First Aider		

This confirms that the above named acknowledges that he/she has been instructed in the safety items listed above and has received the necessary protective clothing / equipment to use in the performance of his/her work.

INDUCTION OFFICER / TRAINER

Signature	Designation	Date

ACCEPTANCE

I, _____ hereby acknowledge receipt of and accept and understand the requirements of this induction.

Signature	Designation	Date

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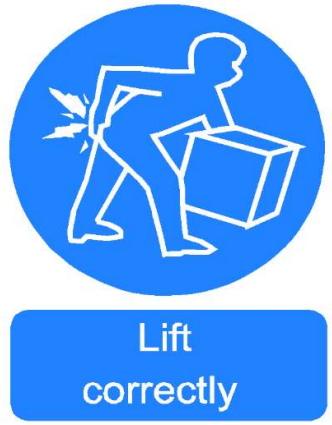
ANNEXURE E (Toolbox Talks)

TOOLBOX TALKS	

TALK NO:	16	DATE:	
TALK TOPIC:	LIFTING MATERIALS BY HAND	SITE:	
TALK PRESENTED BY:			



TALK CONTENT / DISCUSSION

HOW DO I LIFT EQUIPMENT SAFELY WITHOUT INJURING MY BACK?

1. Stoop and bend the knees.
2. Keep your back straight.
3. Lift using the leg muscles.
4. Push upward with the load.
5. If the load is on a table, slide the load to the edge until you can get a firm grip under the load, and then proceed to lift as above.
6. If the load requires two or more persons to lift, then ensure the load is lifted on one side first and then the other, Ensure someone gives the command to lift so the lift occurs simultaneously.
7. Where it is practical to use a trolley, do so as it will safe guard against unnecessary injury.

ATTENDANCE

NAME:	SIGN:		NAME:	SIGN:

ANNEXURE F (Audit Schedule)

CONTRACTOR TO PRODUCE AS SPECIFIED

PROJECT SPECIFICATION

PORTION 2: PARTICULAR SPECIFICATION

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

TABLE OF CONTENTS

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

PZ1 INTRODUCTION

PZ1.1 SCOPE

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

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

PZ1.2 INTERPRETATIONS

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

PZ1.2.1 Supporting specifications:

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

PZ1.2.2 Principles

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

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

PZ1.3 DEFINITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

sedge, grass, ground-cover, reed, bulrush, or herbaceous component of riparian vegetation and excludes the woody component.

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

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

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

Topsoil: This is defined as the A horizon of the soil profile. Topsoil is the upper layer of soil from which plants obtain their nutrients for growth. It is often darker in colour, due to the organic (humic) fraction. Topsoil is deemed for the purposes of this specification as the layer of soil from the surface to the specified depth required for excavation (see PZ3 5.3, relevant SABS 1200 clause and project specification). Where topsoil is referred to, it is deemed to be both the soil and grass / ground cover fraction. (see 'Cleared Surface')
Veld: This is defined for the purpose of this specification as unimproved natural vegetation areas (e.g. grasslands).

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

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

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

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

PZ1.4 ABBREVIATIONS

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

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

PZ1.5 DRAWINGS

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

PZ1.6 FORMS

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

PZ1.7 CONDITIONS OF CONTRACT

PZ1.7.1 Duties and Powers of the Project Manager

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

The Project Manager:

- arranges information meetings for or consults with IAPs about the impending construction activities;
- may on the recommendation of the Engineer and /or Environmental Officer order the Contractor to suspend any or all works on site if the Contractor or his SubContractor/ supplier fails to comply with the said specifications;
- maintains a register of complaints and queries by members of the public at the site office as per attached pro-forma. This register is forwarded to the Environmental Control Officer on a monthly basis.

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

The Engineer or Supervisor is responsible for:

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

PZ1.7.3 Duties and Powers of the Environmental Control Officer

The Environmental Control Officer:

- briefs the Contractor about the requirements of the Environmental Specification and/ or Environmental Management Plan, as applicable;
- advises the Project Manager and Engineer/ Supervisor about the interpretation, implementation and enforcement of the Environmental Specification and other related environmental matters;
- attends site meetings, as necessary;
- monitors the Constructor's compliance with this specification and the project environmental specification as applicable;
- undertakes periodic audits of the effectiveness of the environmental specifications

on the site;
- communicates environmental policy issues to the Project Manager;
- provides technical advice relating to environmental issues to the Engineer/ Supervisor and Project Manager;
- reports on the performance of the project, in terms of environmental compliance.

PZ1.7.4 Duties and Powers of the Environmental Officer

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

PZ1.7.5 Extent of the Contractor's Obligations

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

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

PZ1.7.6 Compliance with Applicable Laws

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

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

Laws applicable to protection of the environment in terms of Environmental Management (and relating to construction activities) include but are not restricted to:
Animals Protection Act, Act No 71 of 1962
Atmospheric Pollution Prevention Act, No 45 of 1965
Conservation of Agricultural Resources Act, No 43 of 1983
Environmental Conservation Act, No 73 of 1989
Environmental Planning Act, Act No 88 of 1967
Fertilisers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, No 36 of 1947
Forest Act, No 122 of 1984
Forest and Veld Conservation Act, Act No 13 of 1941
Hazardous Substances Act, No 15 of 1973
Lake Areas Development Act No 34 of 1975
Land Survey Act, No 9 of 1921
Minerals Act, No 50 of 1991
Mountain Catchment Act, No 63 of 1970
National Monuments Act, No 28 of 1969
National Parks Act, No 57 of 1976
National Resources Development Act, Act no 51 of 1947
Occupational Health and Safety Act, No 85 of 1993
Provincial and Local Government Ordinances and Bylaws
Soil Conservation Act, Act No 76 of 1969
Water Act, No 54 of 1956
Water Services Act No 108 of 1997
and all regulations framed thereunder and amendments there to.

PZ1.7.7 Compliance with the Environmental Specification

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

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

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

Failure to demarcate working servitudes	R1000
Working outside of the demarcated servitude	R2000
Failure to strip topsoil with intact vegetation	R1000
Failure to stockpile topsoil correctly	R500
Failure to stockpile materials in designated areas	R500
Pollution of water bodies (including increased suspended solid loads)	R1000
Failure to control stormwater runoff	R1000
Failure to provide adequate sanitation	R500
Unauthorised removal of woody vegetation	R2000
Failure to erect temporary fences	R500
Failure to provide adequate waste disposal facilities and services	R500

Failure to reinstate disturbed areas within the specified time-frame	R3000
Failure to rehabilitate disturbed areas within the specified time-frame	R3000
Any other contravention of the project specific specification	R400
Any other contravention of the particular (general) environmental specification	R300

PZ2 SITE ESTABLISHMENT AND HOUSEKEEPING

PZ2.1 LAYOUT

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

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

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

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

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

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

PZ2.2 SITE CLEARANCE

No trees or shrubs may be removed without the prior permission of the Environmental Officer, unless in keeping with the final site reinstatement and rehabilitation plan.
Topsoil is to be stripped from all areas where permanent or temporary structures and access roads are to be constructed. Topsoil conservation is to be in terms of clause PZ3 5.3 of this document.

PZ2.3 SERVICES

PZ2.3.1 Sanitation

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

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

PZ2.3.2 Solid Waste Facilities

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

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

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

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

No burying of waste will be allowed on any site.

PZ2.3.3 Cooking and Heating Facilities

No open fires will be allowed anywhere on site.

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

PZ2.4 FUELS, HAZARDOUS SUBSTANCES AND OTHER LIQUID POLLUTANTS

PZ2.4.1 Storage and handling

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

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

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

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

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

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

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

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

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

PZ2.4.2 Control of pollutants

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

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

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

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

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

Use of specialized cleanup techniques and/ or products may be required depending on the spill. This will be instructed by the Environmental Control Officer. These will be to the Contractor’s cost.

PZ2.5 GENERAL

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

PZ2.6 MEASUREMENT AND PAYMENT

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

PZ3 CONSTRUCTION

PZ3.1 CONSTRUCTION METHODS AND PROGRAMME

PZ3.1.1 Construction Method

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

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

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

PZ3.1.2 Construction Programme

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

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

PZ3.2 AREAS OCCUPIED / DEMARCATION OF SITE

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

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

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

In terms of pipeline projects, a general maximum working servitude width of 15 m will apply for machine excavation unless otherwise indicated in the project specification. A maximum width of 6 m will apply for manual excavation. These maximum working

servitude widths may vary depending on the sensitivity of the environment, as detailed in the project specification.

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

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

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

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

PZ3.3 SUPPLY OF WORKS FACILITIES

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

PZ3.4 CLEANLINESS

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

PZ3.5 SITE CLEARANCE

PZ3.5.1 Clearance

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

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

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

PZ3.5.2 Disposal of materials

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

Wood obtained from clearing and grubbing operation remains the property of the landowner/ community and must be stacked at sites designated by relevant person.

The Contractor will be required to remove and dispose of any wood from site at a designated site for vegetation disposal, should the landowner/ community not require it.

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

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

PZ3.5.3 Conservation of topsoil

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

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

Topsoil is to be replaced along the contour.

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

Topsoil stockpiles are not to exceed 2 m in height.

Topsoil stockpiles are to be maintained in a weed free condition (i.e. no 'broad-leafed' plants regarded as weeds in terms of the Conservation of Agricultural Resources Act No 43 of 1989, or those plants regarded as a 'general nuisance in the area' are to be growing on the stockpiles). The Environmental Control Officer will provide guidance as to which plants are weeds and require removal.
The stockpiles are not to be contaminated with sub-soil, or any other waste material.

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

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

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

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

PZ3.5.4 Cutting of trees

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

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

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

PZ3.5.5 Landscape Preservation and Conservation of Flora

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

Transplanting shall be undertaken by employing the following method:

Removal

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

Replanting

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

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

PZ3.6 EARTHWORKS

PSZ3.6.1 Backfill material

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

PZ3.6.2 Excavation and backfilling

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

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

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

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

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

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

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

PZ3.7 SAFETY

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

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

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

PZ3.8 PLANT

PZ3.8.1 Silencing of plant

With reference to SABS 1200 A amend: “built up areas”: to read as “all areas within audible distance of residents (albeit urban, peri-urban or rural areas).”

Appropriate directional and intensity settings are to be maintained on all hooters and sirens.

Silencer units on equipment and vehicles are to be maintained in good working order.

Construction activities are to be confined to normal working hours (07h30 - 17h00) Mondays to Saturdays, except for the activities designated to be carried out at night.

PZ3.8.2 Appropriate use of plant

The Contractor will at all times use plant which is appropriate to the task in order to minimise the extent of damage to the environment.

PZ3.9 DEALING WITH WATER ON WORKS

PZ3.9.1 Disinfection of Potable Water Infrastructure

Disinfection water is to be neutralised before release of this water to the environment.

PZ3.9.2 Discharge of water from site

Any water which is discharged from site is to comply with the relevant Water Quality Guidelines implemented by DWAF.

Water discharged to the stormwater / sewer system may only be done so with the permission of the relevant local authority.

PZ3.10 CONTROL OF EROSION

Surface erosion protection measures will be required to prevent erosion where slopes are steeper than 1:8 on all soil types.

Erosion protection measures required may include all or some of the below, as specified in the project specification or upon instruction of the Engineer in conjunction with the Environmental (Control) Officer:

- use of groundcover or grass
- construction of cut off berms (earth and/or rockpack) - these are to be angled across the contour and normally would approximate an angle of 30o from the bisector of the contour.
- placing of brush wood on bare surface;
- pegging of wattle trunks or branches along the contour;
- hard landscaping, e.g. use of Loffelstein walls, ground anchors, gabions etc.

Scour chambers are to be fitted with energy dissipaters, or the jet of water directed onto a protected (i.e. grouted stone pitching/ rock pack/ reno mattress) area to dissipate water velocity and to control and prevent erosion.

Storm water drainage measures might be required on site to control runoff and prevent erosion.

PZ3.11 CONTROL OF POLLUTION

No waste in a solid, liquid or gaseous state shall be emitted from or spilled on the site without the approval of the Engineer.

No mixed concrete shall be deposited directly onto the ground prior to placing. A board or other suitable platform is to be provided onto which the mixed concrete can be deposited whilst it awaits placing.

Excess concrete from mixing shall be deposited in a designated area awaiting removal to an approved landfill site.

The Contractor will contain wash water from cement mixing operations, by directing the water into a sump for collection. The material contained in the sump will be removed to an appropriate landfill site.

No concrete rubble shall be present at the site.

Liquid wastes will not be disposed of to storm water drains. They may be disposed of to sewer only if permitted by (local council) legislation.

In the event of pollution of a water body (including sediment loading), the Contractor will provide alternative water supply to users of that water body until the quality of the water body is restored to its previous unpolluted state. For the sake of this clause, pollution is deemed to be a state which is substandard to the normal quality of the water body, but is not necessarily in contravention of the South African Water Quality guideline standards for a prescribed activity.

Any ancillary damages resulting from pollution of a water body will be repaired / remediated at the Contractor’s cost.

Where, due to construction requirements, pollution of a water body may potentially occur, the Contractor is to ensure adequate measures (e.g. attenuation/ settlement dams / oil absorbent products) are in place to prevent pollution. A method statement is to be provided to this effect (see PZ3 1).

PZ3.12 CONTROL OF FIRE

The Contractor will ensure he has the necessary fire fighting equipment on site in terms of SABS 1200. This will include at least rubber beaters when working in ‘veld’ areas, and at least one fire extinguisher of the appropriate type when welding activities are undertaken, irrespective of the site.

PZ3.13 USE AND MAINTENANCE OF ACCESS FACILITIES

PZ3.13.1 Responsibility

The Project Manager [not the Contractor (SABS 1200 AD 5.3.1)] will be responsible for obtaining permission for temporary and permanent rights of way over all private property affected by project activities.

The Project Manager will ensure that the Contractor has kept a photographic record of all access facilities and that these are reinstated to a state not worse than upon commencement of the project and to the satisfaction of the landowner (not withstanding that the project's objective is not to upgrade landowners' access roads).

PZ3.13.2 Fencing

Temporary fencing is to consist of 1.2 m bonnox fencing, or similar, suitably tensioned and supported on 1.8 m fencing standards at 3 m intervals, with all necessary straining posts and stays.

All temporary fencing as indicated by the Engineer is removed on completion of the contract.

PZ3.13.3 New Access Roads

Any construction roads created for execution of the project are to be designed to incorporate adequate drainage and water attenuation structures.

Any access roads which incorporate 'cut and fill' aspects and/or which are to be surfaced during construction are to be authorised by the Environmental Control Officer and Project Manager. Prior to construction of the road, the Contractor will be required to provide a sketch plan of the road layout (referenced to local topographic, natural and man-made structures). Slope steepness, road width, drainage structures and their frequency will need to be documented and accompany the sketch layout.

Construction access roads may not be wider than that necessary (maximum width 4 m) for movement of vehicles in one direction only. Should two way traffic be required, points people are to control vehicle movement on the 'single lane' road or passing bays are to be used where specified in the project specification or as identified by the Engineer in conjunction with the Environmental Control Officer, unless otherwise stated in the project specification.
The cut and fill slopes of permanent roads will require grassing, as specified in the project specification or by the Environmental Control Officer, to increase stability and reduce aesthetic impacts. Hard landscaping may be required as per the project specification.

Temporary construction roads will require rehabilitation on completion of construction activities for which they were required. These roads will require rehabilitation as per PZ4 4 or as specified in the project specification. In the case of access 'tracks', only ripping to loosen compaction will be required unless otherwise stated by the Environmental Control Officer or project specification.

Access roads created by the project may only remain unrehabilitated on written request of the landowner, with his acceptance of the state of the road and a clause that the landowner accepts all responsibility for the road and its state.

PZ3.13.4 Maintenance of Existing Access Roads

The Contractor will record, photographically, the state of existing roads which are to be used for access, prior to plant utilising these roads.

During the contract period, the Contractor will ensure that all existing water attenuation and drainage structures are maintained in a state in which they can optimally perform their function.

Upon completion of the construction period, the Contractor will ensure that the access roads are returned to a state not worse than prior to construction commencing.

PZ3.14 BORROW PITS

Where the Contractor is required to import material this shall be from commercial sources or borrow areas specified in the project specification.
The Contractor may source material from alternative borrow pits provided: the site location; method of winning material and reinstatement and rehabilitation are environmentally acceptable and approved by the Environmental Control Officer.

In this regard, the Contractor shall give the Environmental Control Officer in writing, 30 days prior to opening up alternative borrow pits the following information for acceptance:

- quantities of borrow material required;
- method statement for excavation of material including depth and extent of excavation;
- anticipated ‘active life’ of the borrow area;
- proposal for reinstatement and rehabilitation of borrow area, including final profile;
- written approval from the landowner/ relevant authority that material may be removed from their land subject to their stated conditions, requirements, and royalties, and if the proposal is acceptable to the Environmental Control Officer.

Development and rehabilitation of borrow pit areas are likely to include the following activities (but these must not be regarded as exhaustive):

- Stripping and stockpiling of topsoil as per PZ3 5.3 of this specification;
- Removal (to nominal depth of 500mm) and stockpiling of sub-soil;
- Infill of borrow pit with spoil material;
- Contouring of borrow pit to approximate natural topography and/ or reduce erosion impacts on the site;
- Placement of excavated subsoil over spoil material;
- Placement of stripped topsoil on subsoil;
- Grassing of topsoil in terms of clause PZ4 4 of this specification.

The Contractor is to familiarise himself with the requirements of the Minerals Act No 50 of 1991 in terms of borrow pit development, and the requirements of the EMPR, as applicable.

PZ3.15 SPOIL SITES

Where the Contractor is required to spoil material, spoil sites must be identified which are environmentally acceptable and approved by the ECO, unless spoil site areas have been identified in the project specification, in which case these will be the designated spoil sites.

If no spoil sites have been previously identified together with reinstatement and rehabilitation criteria, the Contractor is to provide the following information to the ECO at least 30 days prior to requiring sites to spoil material:

- the location, description of and access to alternative sites identified in order that they may be assessed;
- the quantity of material to be spoiled;
- the type of material to be spoiled (i.e. blast rock/ excavated rock/ soft shale/ subsoil etc.);
- the proposed method of spoiling;
- the proposed reinstatement and rehabilitation plan including final profile;
- written approval from the landowner/ relevant authority that material may be spoilt on land subject to their stated conditions and requirements and if the proposal is acceptable to the ECO.

Development and rehabilitation of spoil areas are likely to include the following activities (but these must not be regarded as exhaustive):

- Stripping and stockpiling of topsoil as per PZ3 5.3 of this specification;
- Removal (to nominal depth of 500mm) and stockpiling of sub-soil;
- Placement of spoil material;
- Contouring of spoil site to approximate natural topography and/ or reduce erosion impacts on the site;
- Placement of excavated subsoil over spoil material;
- Placement of stripped topsoil on subsoil;

Grassing of topsoil in terms of clause PZ4 4 of this specification.

PZ3.16 NUISANCE

PZ3.16.1 Dust

At all times the Contractor shall control dust on the site, access roads, borrow pits and spoil dumps with water, chemical soil stabilisers or temporary surfacing as specified in the project specification or upon instruction of the Engineer.

Dust control shall be sufficient so as not to have significant impacts in terms of the biophysical and social environments. These impacts include visual pollution, decreased safety due to reduced visibility, health aspects, and ecological impacts due to dust particle accumulation.

On gravel or earth roads, vehicle speeds may not exceed 30km per hour.

PZ3.16.2 Noise

The operational layout of the construction site is to be designed to control and reduce noise from source (see clause PZ2 1).

Machinery and vehicle silencer units are to be maintained in good working order. Offending machinery and /or vehicles will be banned from use on site until they have been repaired.

Construction activities generating output levels of 85 dB(A) or more (excessively noisy), in residential areas, are to be confined to working hours (08h00 - 17h00) Mondays to Fridays only.

'Normal' or 'noisy' working hours may only be extended with the prior written approval of the Project Manager, who has been notified, at least 7 days in advance, of the impending work requiring extension.

The Project Manager will ensure that the neighbours are timeously forewarned of imminent noisy activities.

Should community complaints be received with regard to noise generation, the Contractor will, at the discretion of the Project Manager and Environmental Control Officer, provide an independent and registered noise monitor to undertake a survey of noise output levels from site, and implement measures to reduce noise to legislated levels.

PZ3.16.3 Visual

All site establishment components, as well as equipment, will be positioned to limit visual intrusion to neighbours (see clause PZ2 1 above).

The type and colour of roofing and cladding materials are to be selected to reduce reflection.

Security lighting (both temporary and permanent) and lighting required for specific works activities must be placed such that it is not a nuisance to residents and the general public.

PZ3.16.4 Interference with neighbours and public

No construction staff may approach site neighbours, for whatever reason, without the knowledge and permission of the Project Manager.

Complaints from neighbours and public with regard to interference from contract staff will be regarded in a serious light, and the offender(s) may be subject to disciplinary action.

PZ3.16.5 Disruption of Services

Disruption of services, e.g. road access, water and electricity, must be kept to a minimum at all times.

Where service disruption is unavoidable, the Contractor is to advise the Project Manager (at least 7 days in advance), who in turn will timeously warn the affected parties.

PZ3.17 SPECIAL ENVIRONMENTS

PZ3.17.1 Wetlands

Pipeline trenches which traverse wetlands shall be constructed as specified in the project specification. The Contractor will submit a method statement for work in wetland areas as per PZ3 1.1

Construction may not permanently alter the surface or subsurface flow of water through the wetland.

The Contractor shall submit a method statement for review at least 14 days prior to commencing construction in a wetland.

The Contractor will remove all wetland vegetation with their root ball intact. This vegetation is to be kept moist at all times. It is to be placed in the shade and covered with moistened hessian cloth until replanting, which is to be undertaken immediately surface reinstatement is complete.

No construction materials may be stockpiled in any wetland areas.

The pre-construction profile of the wetland shall be returned to one similar as before construction, with no created “ridge or channel” features present.

PZ3.17.2 River/ stream courses

The Contractor shall submit a method statement for review 14 days prior to commencing construction. The method statement should highlight (but not be confined to) the following issues:

- detailed plan of crossing including pipe protection works;
- how water flow will be diverted during construction (if applicable);
- containment of contaminated runoff and waste water;
- width of working servitude (if not already detailed in project specification);
- final expected profile of river/ stream banks;
- reinstatement and rehabilitation of river/ stream banks.

The Contractor will remove herbaceous riparian vegetation as indicated in the project specification or by the Environmental Control Officer, with their root ball intact. This vegetation is to be kept moist by means of placing it in the shade, covered with moistened hessian cloth until it is replanted.

The Contractor shall not modify the banks or bed of a water course unless as specified in the project specification.

Rocks for use in gabion baskets/reno mattresses may not be obtained from a water course.

The Contractor will not pollute any water body as a result of construction activities (see also PZ3 11).

The Contractor shall not cause any physical damage to any aspects of a water course, other than those necessary to complete the works as specified and in accordance with the accepted method statement

Where a stream or river-crossing requires the diversion of water, a method statement is to be provided to the Environmental Control Officer in this regard for review.

PZ4 REINSTATEMENT AND REHABILITATION

Scope: The intention of this section is to ensure that the condition of the areas disturbed by the project are returned to a state that approximates what they were before the project or better, within reason. The concept of progressive reinstatement is fundamental to cost effective (both financial and environmental) rehabilitation of a site. This concept must be followed at all times. Where landscaping is utilised, the concept is to utilise and restore indigenous plants to the site, in terms of the concept of xeriscaping.

Reinstatement will be required for all areas disturbed by the project. For pipeline projects, this will include the full working servitude, not just the top of actual excavation as per SABS 1200 DB (subclause 5.9.1.1)

Reinstatement and rehabilitation will ensure that all areas disturbed by the project are returned, within reason, to a state not worse than before the project commenced.

The Contractor will reinstate and rehabilitate all disturbed areas outside of the demarcated working area (as defined in terms of clause PZ3 2 or the project specification) at his own cost and to the satisfaction of the Environmental Control Officer and Project Manager.

PZ4.1 HOUSEKEEPING

All areas are to be cleared of rubble associated with construction. This includes the removal of surplus materials, excavation and disposal of consolidated waste concrete and concrete wash water, litter, etc.
All soil contaminated by hydrocarbons, for example from leaking machines, refuelling spills etc., is to be excavated to the depth of contaminant penetration, placed in 200 litre drums and removed to an appropriate landfill site.

PZ4.2 FINISHING

PZ4.2.1 Final Grading

Final levels of all disturbed areas are, where feasible in terms of the project requirement, to be consistent with the natural topography of the area.

In certain instances, it will be acceptable to reinstate rock onto a works area (e.g. pipeline servitude), provided that that rock does not exceed 250mm in maximum dimension and is placed in a manner consistent with the natural surrounds as indicated by the Environmental Control Officer and Project Manager.

All drainage lines affected by construction are to be reinstated to approximate their original profile. Where this is not feasible due to technical constraints, the profile is to be agreed upon by the Environmental Control Officer and Project Manager.

All compacted (disturbed) areas (including stockpile areas) are to be ripped (along contour) to a depth of 150mm prior to the replacement of topsoil.

PZ4.2.2 Topsoiling

Topsoil is to be replaced to a minimum depth of 100mm.

Topsoil is not to be compacted, but once replaced is to be scarified (to a depth of 50mm) consistent with the natural contour.

If insufficient topsoil is available, subsoil or similar material may be used that may be a suitable substrate after addition of soil improving substances e.g. compost, pH rectifiers (lime or gypsum) etc. Soil testing may be required at an approved facility.

PZ4.3 REINSTATEMENT OF WATER COURSES AND WETLAND AREAS

The Contractor will ensure that water course banks are returned to their original profile unless the project specification states otherwise.

The surface reinstatement of wetland areas is to ensure that no depressions remain which could act as channels for preferential water flow thereby affecting the hydrological regime of the wetland.

The Contractor will preserve all riparian and wetland vegetation for use in rehabilitation of those environments. This vegetation is to be kept moist at all times. It is to be placed in the shade and covered with moistened hessian cloth until replanting, which is to be undertaken immediately surface reinstatement is complete.

Plants are to be, as nearly as possible, replanted in areas from which they were removed.

PZ4.4 VEGETATION RE-ESTABLISHMENT

The Contractor will ensure that all areas disturbed by contract activities are revegetated to the specified standard.

This standard is deemed to be an 85 % cover with no areas in excess of 0.04 m2 / m2 remaining unvegetated.
Revegetation shall match the vegetation type which previously existed (e.g. kikuyu pastures are to be returned to kikuyu pasture; ‘veld’ grass to ‘veld’ grass, etc.), unless stated otherwise in the project specification.
Prior to re-grassing, and if required:

- the area is to be scarified or ripped (along contour) to a depth of 50mm to loosen compaction.
- weeds present on site are to be removed.

Re-grassing, where required, will be either by means of seeding, instant turf (sods), sprigs or plugs as specified in the project specification or as specified by the ECO.

Where sprigs or plugs are utilised, they are to be planted at 200mm centres. The fertiliser shall be applied as per PZ4 5.2. During summer, 25mm of irrigation shall be applied each week until reasonable (60%) ground cover has been obtained. During winter 15mm of irrigation shall be applied each week until reasonable (60%) ground cover has been obtained. The amount of irrigation to be applied will make up the difference between rainfall recorded on site and minimum requirement.

Where instant turf is utilised, it shall be laid as specified in the project specification. The fertiliser shall be applied as per PZ4 5.2. During summer, 25mm of irrigation shall be applied each week until all the turf is visibly growing. During winter 15mm of irrigation shall be applied each week until all the turf is visibly growing. The amount of irrigation to be applied will make up the difference between rainfall recorded on site and minimum requirement.

Grassing shall be undertaken by a specialist grassing Sub-Contractor, unless permission is granted otherwise by the Engineer upon receipt of a written motivation from the Contractor.

The Contractor shall state in writing when the regrassing operation will commence and its expected duration (dates).

Grassing in 'veld' areas is to be undertaken as per PZ4 5 below. Cynodon dactylon species may be excluded or substituted from this mixture at the discretion of the Environmental Control Officer, or as specified in the project specification. The seed bulk may be made up with the Eragrostis tef.

PZ4.5 "VELD GRASS" GRASSING SPECIFICATION

The area to be grassed should be estimated and converted to hectares,
e.g. 100m X 100m = 10 000m2 = 1ha. All fertilizer and seeding rates used in this specification are with respect to hectares.

PZ4.5.1 Regional areas

For re-grassing three distinctive areas exist. These are defined as:
- the Coastal area (a narrow band running from the coast to ≈15km inland of the coast)
- the Coastal hinterland (a broad band (≈50km wide), generally defined as westwards of the coastal belt, and below 800m a.s.l.)
- the area above ≈ 800m a.s.l. (also called Midlands area).

PZ4.5.2 Fertiliser

Standard 2:3:2 (N:P:K) fertiliser shall be used on all sites.

The rate of application will be:

- 200 kg/ha in the Coastal Hinterland areas, and
- 300 kg/ha in the Midlands and Coastal areas.

PZ4.5.3 Planting times

Summer (includes Spring) is considered to be between the 1 September and 28 (29) February.

Winter (includes Autumn) is considered to be between 1 March and 31 August.

Re-grassing will be undertaken (as far as possible) in summer as germination and establishment of grasses is most effective, assuming reasonable spring rains.

Vegetation re-establishment is likely in many cases to be held off until this suitable growing season.

Hydroseeding with a winter mix will only be specified where regrassing is urgently required and cannot wait until the summer season. In this case irrigation will be required as per PZ4 5.4 below.

PZ4.5.4 Establishment and maintenance

During summer, 25mm of irrigation shall be applied each week until reasonable (60%) ground cover has been obtained.

During winter (where annual rye grass is specified) 15mm of irrigation shall be applied each week until reasonable (60%) ground cover has been obtained.
If rapid establishment is required, additional watering may be necessary as specified in the project specification
The amount of irrigation to be applied will make up the difference between rainfall recorded on site and the minimum requirement.

PZ4.5.5 Grass Seed Selection and Application Rates

The specific seed selection and application rates for each of the defined areas are covered separately, as follows.

PZ4.5.5.1 Coastal area

Summer mix (1 September - 28 February)

Grass species	Common name	General application rate (kg/ha)
Eragrostis tef	Teff	5
Eragrostis curvula	Weeping lovegrass	10
Chloris gayana	Rhodes grass	10
Digitaria eriantha	Smuts' fingergrass	5
Total		30

Winter mix (1 March - 31 August)

Grass species	Common name	General application rate (kg/ha)
Lolium multiflorum cultivar - Midmar	Annual/Italian rye grass	10
Eragrostis curvula	Weeping lovegrass	10
Chloris gayana	Rhodes grass	5
Total		25

PZ4.5.5.2 Coastal hinterland.

Summer mix (1 September - 28 February)

Grass species	Common name	General application rate (kg/ha)
Eragrostis tef	Teff	5
Eragrostis curvula	Weeping lovegrass	10
Chloris gayana	Rhodes grass	10
Cenchrus ciliarus	Blue buffalo grass	2
Cynodon dactylon	Couch/KWeek/Star grass	10
Total		37

Winter mix (1 March - 31 August)

Grass species	Common name	General application rate (kg/ha)
Lolium multiflorum cultivar – Midmar	Annual/Italian rye grass	10
Eragrostis curvula	Weeping lovegrass	10
Chloris gayana	Rhodes grass	5
Cenchrus ciliarus	Blue buffalo grass	2
Cynodon dactylon	Couch/KWeek/Star grass	3
Total		30

PZ4.5.5.3 Midlands area

Summer mix (1 September - 28 February)

Grass species	Common name	General application rate (kg/ha)
Eragrostis tef	Teff	4
Eragrostis curvula	Weeping lovegrass	10
Chloris gayana	Rhodes grass	10
Digitaria eriantha	Smuts' fingergrass	2
Cynodon dactylon	Couch/KWeek/Star grass	2
Paspalum notatum	Lawn paspalum	2
Total		30

Winter mix (1 March - 31 August)

Grass species	Common name	General application rate (kg/ha)
Lolium multiflorum cultivar - Midmar	Annual/Italian rye grass	10
Eragrostis curvula	Weeping lovegrass	10
Chloris gayana	Rhodes grass	5
Paspalum notatum	Lawn paspalum	2.5
Total		27.5

PZ4.5.6 Seeding methods

Two methods are recommended, namely hydroseeding and hand-broadcasting. The required method shall be as specified in the project specification.

All seed supplied should be labelled in accordance with the Government Seed Act No. 20 of 1961 and the Contractor shall be required to produce such certification, if requested by the Engineer.

PZ4.5.6.1 Hydroseeding

The Grassing Contractor shall be conversant with this method.

Cellulose pulp (consisting of either wood shavings, shredded straw, shredded paper or cotton waste) shall be added to the mix to be applied at a rate of 250 kg/ha.
In addition to the cellulose pulp, compost (consisting of either chicken litter, kraal manure, sugar cane filter cake or mushroom compost) shall be incorporated at a rate of 5m3/ha (≈100 X 50kg fertiliser bags/ha).

PZ4.5.6.2 Hand-broadcasting

Fertiliser, at the appropriate rate, is to be distributed by hand in a manner to ensure that there is an even spread of fertiliser over the site. This is to be done prior to seeding.

The seed mix is to be weighed and made up in an appropriately large container which shall be stirred to ensure no settling out of the grass seed, and a uniform distribution of the different types of seed.

The seed is to distributed by hand in a regular grid broadcasting manner to ensure that there is an even spread of grass over the entire site.

The area seeded is to be raked over once the seed and fertiliser have been applied to incorporate these elements into the topsoil.

PZ4.5.7 General

Where there is a possibility of neighbourhood livestock grazing a rehabilitated site these should, as far as is practicable, be excluded for the first 3 months of re-grassing.

PZ4.6 LANDSCAPING

Landscaping of the site may be required as indicated in the project specification.

Compensatory planting of trees or shrubs may be required should the transplantation of such not be successful in terms of PZ3 5.5 or due to plants removed in terms of PZ3 5.4

Planting of trees will be in accordance with the following method:

- All tree holes shall be square in plan;
- Tree holes shall be a minimum of 600mm by 600mm square by 700mm deep;
- Holes are to be backfilled with excavated soil in a ratio of 3:1 with compost. The compost is to be weed free and have been composted at temperatures in the order of 65^{o}C. Where possible, any available topsoil should be placed in the hole at the level where the tree rootball will rest. A handful (half-a-cup) of each Superphosphate and 2.3.2 should be mixed into the soil-compost mix;
- The tree holes are to be backfilled to the point where the tree and its rootball are in

the desired position. The tree is to be removed temporarily and the hole filled with water and allowed to drain away. This operation of watering and draining should be repeated at least four times in order that the surrounding ground and hole are thoroughly moist. The tree is then to be replaced and the remaining soil replaced;

- All trees shall be tied (using a tree tie) to a suitable timber stake planted in the ground to a depth of at least 500mm. The stake shall have a minimum diameter of 35mm and shall be at least 300mm higher than the planted tree;
- Water retaining basins of at least 500mm diameters are to be formed around each tree;
- The Contractor is to apply at least 10 litres of water per tree per fortnight for a period of at least 3 months.

The planting of shrubs will be in accordance with the tree planting method with the exception that the holes are to be a minimum of 400mm by 400mm square by 500mm deep, and that the tree stakes and ties are not required.

PZ4.7 ALIEN PLANT CONTROL

All sites disturbed by construction activities will be monitored for colonisation by invasive alien plant species.

The Environmental Control Officer will identify those plants which require removal during both the construction and maintenance period, for the Contractor's action.

The Environmental Control Officer will provide advice as to effective methods of removal and control of alien plant species.

PUBLIC COMPLAINTS REGISTER

DATE	COMPLAINANTS NAME	DESIGNATION/ AFFILIATION	REASON FOR COMPLAINT	ACTION TAKEN	ACTION BY	ACTION BY DATE	ACHIEVED BY DATE	DATE REFERRED TO NW environmental control officer

MONITORING OF COMPLIANCE WITH ENVIRONMENTAL SPECIFICATIONS

PROJECT NAME:

CONTRACT NUMBER:

PROJECT MANAGER:

ENGINEER'S REPRESENTATIVE / SUPERVISOR:

CONTRACTOR:

CONTRACT PERIOD
(including start and completion dates):

PERIOD COVERED:

REPORT PREPARED BY:

Signature

ENVIRONMENTAL CONTROL OFFICER REPORT

PROJECT NAME: **CONTRACT N°**

DATE OF SITE INSPECTIONS DURING REPORTING PERIOD:

Specification Breach	Spec. No.	Remedial Action Recommended	Due Date	Authority Responsible	Action Taken

PUBLIC COMPLAINTS

Complainant	Designation/ Affiliation	Date of complaint	Reason for Complaint	Action taken and date

GOOD PERFORMANCE REPORT

List any aspects of the Contract in which the Contractor is performing well and beyond that which is required in terms of the specification.

Photographs

Include photographs which illustrate aspects of non-compliance and good performance.

Photograph 1 Caption	Photograph 2 Caption

C4: SITE INFORMATION

C4.1: GEOTECHNICAL

C4.2: ATMOSPHERIC/CLIMATIC

C4.3: ENVIRONMENTAL

C4.4: LOCALITY PLAN

C4.5: NAMEBOARD DRAWING

C4: SITE INFORMATION

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C4.1 GEOTECHNICAL

Tenderers must satisfy themselves as to the nature of materials to be excavated under this contract.

No responsibility is accepted for any conclusions drawn by Tenderers from the results and information supplied (if any) and Tenderers must satisfy themselves as to the nature of materials to be excavated under this contract. Tenderers are at liberty to excavate any further trial holes or to carry out other investigations to satisfy themselves as to the nature of the ground that will be encountered in carrying out the Works, provided that they advise the Employer's Agent of their intention to carry out such further trial hole excavations or other investigations so that the necessary safety requirements can be ensured. Any trial hole excavated in areas close to pedestrian or vehicular traffic shall be barricaded and shall be backfilled immediately after inspection of the soil conditions.

The Tenderer shall be fully liable for any claims for losses, damage or injuries whatsoever arising out of, or as a consequence of, carrying out trial hole excavations for the purpose of his tender. Furthermore, the Employer's Agent's authority for the carrying out of any exploratory excavations is subject to the Tenderer indemnifying the Employer and the Employer's Agent against any such claims.

C4.2 ATMOSPHERIC / CLIMATIC

Extension of time will be considered for abnormal rainfall. The numbers of days per month on which work is expected not to be possible as a result of normal rainfall, and for which the Contractor shall make provision in his tendered rates, prices and programme, are listed in Table C4.2.1 hereafter. Only the number of days lost as a result of adverse weather conditions, exceeding the number of days listed in Table C4.2.1, will qualify for consideration of extension of time, without costs.

Table C4.2.1: Expected Number of Working Days Lost per Month due to Normal Rainfall

MONTH	Expected number of working days lost as result of normal rainfall
January	*3
February	*4*
March	*3*
April	*2*
May	*1*
June	*1*
July	*1*
August	*1*
September	*2*
October	*3*
November	*4*
December	*2
TOTAL	*27 days*

(Based on information obtained from Weather SA. The number of working days lost for December and January allows for the builders' holidays from 16 December to 3 January.)

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

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

Extension of time as a result of abnormal rainfall and adverse weather conditions shall be calculated monthly being equal to the number of working days certified by the Employer's Agent's Representative as lost due to rainfall and adverse weather conditions, less the number of days allowed for as in Table C4.2.1, which could result in a negative figure for certain months. The total extension of time as a result of abnormal climatic conditions for which the Contractor may apply, shall be the cumulative algebraic sum of the monthly extensions. Should the sum thus obtained be negative, the extension of time shall be taken as nil.

The contractor is responsible for maintaining records of rainfall and rain days certified by the Employer's Agent's Representative.

C4.3 ENVIRONMENTAL

The Contractor will be responsible for environmental control on site during construction and the maintenance period. The construction activities will be monitored by an independent environmental specialist.

C4.4 LOCALITY PLAN

C4.5 NAMEBOARD DRAWING

C4.5 STANDARD DETAIL DRAWINGS

Drawing N°	Description
MD 1987 / P11	LAYOUT PLAN – UGU DM on availability or operation team make physical verification on each project pipeline replacement
MD 1987 / P12	LAYOUT PLAN – UGU DM on availability or operation team make physical verification on each project pipeline replacement
MD 1987 / P13	LAYOUT PLAN – UGU DM on availability or operation team make physical verification on each project pipeline replacement
W01.PZB.0199-02-040	STANDARD DETAILS
W01.PZB.0199-02-041	STANDARD DETAILS
W01.PZB.0199-02-042	STANDARD DETAILS