Kopanong Municipality

KOPANONG LOCAL MUNICIPALITY

PROJECT DOCUMENT

CONTRACT NUMBER: KLM/MIG/FS1192/2021

TROMPSBURG: PERMITTING AND CLOSURE OF EXISTING DISPOSAL SITE AND CONSTRUCTION OF A NEW DISPOSAL SITE

A tender for Category 4CE or higher CIDB Registered Contractors

Tender closing date: Friday, 03 May 2024
Closing Time: 12H00

NAME OF TENDERER: ……..

TENDERED AMOUNT: ……

TIME OF COMPLETION: ……..(weeks)

ISSUED BY:
Kopanong Local Municipality
Private Bag x23
Trompsburg
9913

PREPARED BY engineering ACES

T: 051 430 0994 / 051 011 3444
C: 083 385 0745 / 061 412 0266
admin@engineeringaces.com
engineeringaces.com
Unit No.5, Prospes House, 58 Victoria Road, Willows, Bloemfontein 9301

PART A INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE (*Kopanong Local Municipality*)					
BID NUMBER:	**KLM/MIG/FS1192/2021**	CLOSING DATE:	03 MAY 2024	CLOSING TIME:	**12:00**
DESCRIPTION	**TROMPSBURG: PERMITTING AND CLOSURE OF EXISTING DISPOSAL SITE AND CONSTRUCTION OF A NEW DISPOSAL SITE**				
THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (MBD7).					

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

20 Louw Street
Trompsburg
9913

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		

[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT (FOR EMES & QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]

ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	☐Yes ☐No [IF YES ENCLOSE PROOF]	**ARE YOU A FOREIGN BASED SUPPLIER FOR** THE GOODS /SERVICES /WORKS 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	CONSULTANT	CONTACT PERSON	Mr T Selepe
CONTACT PERSON	Mr. LST Serobe	TELEPHONE NUMBER	071 858 1807
TELEPHONE NUMBER	065 300 1234	FACSIMILE NUMBER	-
FACSIMILE NUMBER	-	E-MAIL ADDRESS	tsepo.kopanong@gmail.com
E-MAIL ADDRESS	lefas@engineeringaces.com		

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) OR ONLINE**
1.3.	THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022, 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.
2.2	BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.
2.3	APPLICATION FOR THE TAX COMPLIANCE STATUS (TCS) CERTIFICATE OR PIN MAY ALSO BE MADE VIA E-FILING. IN ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA.
2.4	FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PART B:3.
2.5	BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
2.6	IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
2.7	WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.
3.	**QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS**
3.1.	IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)? ☐ YES ☐ NO
3.2.	DOES THE ENTITY HAVE A BRANCH IN THE RSA? ☐ YES ☐ NO
3.3.	DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA? ☐ YES ☐ NO
3.4.	DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA? ☐ YES ☐ NO
3.5.	IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION? ☐ YES ☐ NO
	IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.

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:…….... ……

LIST OF PROJECT DOCUMENTS

The Tender Documents for this Contract comprise the following:

1. *General Conditions of Contract for Construction Works,* Third Edition, 2015, issued by South African Institution of Civil Engineering (SAICE), which the Tenderer shall purchase himself.

2. The SANS *Standardized Specification for Civil Engineering Construction,* prepared by Standards South Africa, which the Tenderer shall purchase himself.

3. The Project Document, containing the Tender Notice, Conditions of Tender, Tender Data, Returnable Schedules, General Conditions of Contract, Contract Data, Project Specifications, Pricing Instructions, Bills of Quantity, Form of Offer and Site Information, Tender Drawings is issued by the Employer. The Employer's Form of Acceptance and any correspondence from the selected Tenderer, Performance Security and all Addenda issued during the period of tender will also form part of this document once a successful tenderer has been appointed.

1 and 2 are available from the following organisations (as applicable):

- **CESA, PO Box 68482, Bryanston, 2021.Tel: 011 463 2022 Fax: 011 463 7383, Email: general@cesa.co.za**
- **SAICE, Private Bag X200, Halfway House, 1685. Tel: 011 805 5947/8, Email: civilinfo@saice.org.za**
- **SAFCEC**
- **South African Bureau of Standards**

KOPANONG LOCAL MUNICIPALITY

CONTRACT NO: KLM/MIG/FS1192/2021

FOR

TROMPSBURG: PERMITTING AND CLOSURE OF EXISTING DISPOSAL SITE AND CONSTRUCTION OF A NEW DISPOSAL SITE

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THE TENDER

KOPANONG LOCAL MUNICIPALITY

CONTRACT NO: KLM/MIG/FS1192/2021

FOR

TROMPSBURG: PERMITTING AND CLOSURE OF EXISTING DISPOSAL SITE AND CONSTRUCTION OF A NEW DISPOSAL SITE

PART T1 TENDERING PROCEDURES

KOPANONG LOCAL MUNICIPALITY

CONTRACT NO: KLM/MIG/FS1192/2021

FOR

TROMPSBURG: PERMITTING AND CLOSURE OF EXISTING DISPOSAL SITE AND CONSTRUCTION OF A NEW DISPOSAL SITE

T1.1 TENDER NOTICE AND INVITATION TO TENDER

Address all correspondence to:
The Municipal Manager
Kopanong Local Municipality
Private Bag X23
TROMPSBURG
9913
E-Mail:marshall.mmm@gmail.com

ADVERTISEMENT

An advertisement is hereby placed in terms of section 18 (b) of the Supply Chain Management Policy of Kopanong Local Municipality to invite (i) suitably qualified, professional and experienced supplier to submit a bid.

Bid Number	Description	Evaluation Criteria	CIDB Grading	Price	Compulsory Briefing	Contact Person	Closing date and Time
KLM/MIG/FS1192/2021	Trompsburg: Permitting And Closure Of Existing Disposal Site And Construction Of A New Disposal Site (Commissioning)	Stage1: Responsiveness Stage 2: Functionality Stage 3: Preference Points 80 – Price 20 – Specific goals Stage 4: Risk Analysis Functionality and specific goals details in the bid document	4CE Or Higher	R 750.00	Wednesday, 24 April 2024 @ 12h00 at the Municipal Town hall, Tromsburg (Briefing certificates will be issued and must be attached with submission of bid document)	Technical Service Enquiry: Mr T Selepe 071 858 1807 tsepo.kopanongl m@gmail.com And Mr L Serobe (Consultant) 065 300 1234 lefas@engineerin gaces.com	Friday, 03rd May 2024 at 12H00 at 20 Louw Street Trompsburg, Municipal Offices

Bids documents are available for free download on e-tender portal www.etenders.gov.za. Alternative bids documents will be available from **24 April 2024** upon payment of a non-refundable document fee during office hours between 08:00 - 12:50 and 13:40 – 16:20 weekdays from the Kopanong Local Municipality procurement office at the head office in Trompsburg.

Payments can be made at the municipal pay point: Trompsburg Unit. Alternative direct or electronic deposits can be made to Kopanong Local Municipality bank account: **First National Bank; Account Number: 62021950276; Branch Code: 230932; Type of Account: Public Sector Cheque Account; Reference: Bid Number**

Minimum Requirements:

- Bidders must be registered on the government Central Supplier Database (CSD) – Submit CSD report.
- Valid Tax Compliance Status PIN (TCS) must be submitted. In the case of a JV valid Tax Compliance Status PIN (TCS) of all parties must be attached.
- Certified copy of company registration certificate reflecting name, identity numbers of active shareholding of all parties and ID Copies of parties must be attached.
- In the case of a JV certified copies of Company Registration Certificates reflecting names, identity numbers of active shareholding of all parties, ID copies of all parties and JV Agreement must be attached.
- Municipal Rates & Taxes account not older than 90 days MUST be attached or Lease agreement (must be accompanied by a statement/account from the lessor) for the company and directors.
- In the case of a JV, municipal rates and taxes account not older than 90 days or lease agreement showing who is liable for municipal rates between the lessor or lessee (if the lessee is responsible for municipal rates and taxes, then supply municipal rates and taxes account not older than 90 days and not owing more than 90 days) of all parties must be attached, and directors.
- Valid relevant COIDA Certificate/ Workman compensation/letter of good standing must be attached, for all parties.
- Valid CIDB certificate of all parties must be attached.
- No bids will be accepted from a person who is in the service of state.
- The bid with the lowest price or higher points will not necessarily be accepted and the Municipality reserves the right to accept any tender wholly or partially.
- All supplementary/compulsory forms contained in the bid document must be completed and signed in full.
- All submission will be subjected to verification.
- Bids received after closing TIME and/or DATE will not be considered.
- No e-mailed or faxed tenders will be accepted.

- Other requirements are listed in the tender documents.
- Failure to comply with the above-mentioned conditions will invalidate your bid.

Bids are to be completed in accordance with the conditions and rules contained in the bid document. Bidders' attention is specifically drawn to the provision of the bid rules and evaluation criteria (Including functionality) which are included in the bid document. Compulsory documents are stated in the document must be submitted together with the bid document.

Municipal Supply Chain Management Policy and Preferential Procurement Framework Act no 5 of 2000 and Preferential Procurement Regulations of 2022 will be applied (A tenderer failing to
submit proof of required evidence to claim preferences for specified goals, which is in line with section 2 (1) (d) (ii) of the Act. Will forfeit points). In the case where the bid valid period is not indicated in the bid document the bid validity period shall be 120 days form the closing date of the bid. The municipality will only communicate the outcome of the bid with the successful bidder.

Tender documents clearly marked **correct bid reference** must be deposited in the tender box at the Kopanong Local Municipality in Trompsburg and must be addressed to: The Municipal Manager, Kopanong Local Municipality, 20 Louw Street, Trompsburg, 9913.

_____
MR M M MADOLO
ACTING MUNICIPAL MANAGER

KOPANONG LOCAL MUNICIPALITY

CONTRACT NO: KLM/MIG/FS1192/2021

FOR

TROMPSBURG: PERMITTING AND CLOSURE OF EXISTING DISPOSAL SITE AND CONSTRUCTION OF A NEW DISPOSAL SITE

T1.2 TENDER DATA

The Conditions of Tender are the Standard Conditions of Tender as published in Annex C of the CIDB Standard for Uniformity in Construction Procurement in Board Notice 423 Government Gazette No 42622 of 8 August 2019. A copy is attached directly after this section.

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

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

C.1.1 The Employer is: Kopanong Local Municipality

Postal Address	Physical Address
Private Bag x23	20 Louw Street
Trompsburg	Trompsburg
9913	9913

C.1.2 The Tender Documents issued by the Employer comprise:

THE TENDER

Part T1 Tendering procedures
T1.1 Tender Notice and Invitation to Tender
T1.2 Tender Data

Part T2 Returnable documents
T2.1 List of returnable documents
T2.2 Returnable schedules

THE CONTRACT

Part C1 Agreements and Contract Data
C1.1 Form of Offer and Acceptance
C1.2 Contract Data
C1.3 Performance Guarantee
C1.4 Agreement in terms of Occupational Health and Safety Act, 1993

Part C2 Pricing Data
C2.1 Pricing Instructions
C2.2 Bill of Quantities

Part C3 Scope of Work
C3 Scope of Work

Part C4 Site Information
C4 Site Information

Part C5 Appendices
C5 Appendices

C.1.4 The Employer's agent is:

Name: Engineering Aces (Pty) Ltd
Address: Unit No. 5, Prospes House
58 Victoria Road
Willows, Bloemfontein
9301

Contact person: Stephen Mothibi
Tel: 051 430 0994/ 051 011 3444
Email: admin@engineeringaces.com

Add the following:

"Tenderers shall note that verbal information given by the Employer's agent during clarification meetings, site visits or at any time prior to the award of the Contract will not be regarded as binding on the Employer. Only information issued formally in writing in terms of either an Addendum (C.3.2) or a Clarification of a Tender Offer (C.3.10) will be considered as amending the Tender Documents.

C.1.5 The Employer may accept or reject any variation, or deviation, or part of any tender offer, or whole Tender Offer, or alternative Offer, and may cancel the Tender process and reject all Tender Offers at any time before the formation of a Contract. The Employer shall not accept or incur any liability to a Tenderer for such cancellation and rejection, but will give written reasons for such action upon written request to do so.

C.2.1 Only those tenderers who satisfy the following eligibility criteria are eligible to submit tenders:
i. Registration on National Treasury's Suppliers Database.
ii. Full compliance with the Employer's preferential Procurement Policy.

Add the following after C.2.1.2:

C.2.1.3 Only those tenderers who are registered with the CIDB, or are capable of being so registered prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations, for a CE class of construction work, are eligible to have their tenders evaluated.

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 4CE or higher class of construction work; and
(3) the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a 4CE class of construction work or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations.

C.2.1.3 Only those tenderers who are registered on the National Treasury's Suppliers Database as a service provider prior to the evaluation of tender submissions are eligible to have their tenders evaluated (the evaluation of tenders shall be deemed to take place when the Employer's Bid Evaluation Committee meets to make a recommendation to the Bid Adjudication Committee). The Employer will only enter into a formal contract with a tenderer who is registered on the National Treasury's Suppliers Database. In the case of joint venture partnerships this requirement will apply individually to each party of the joint venture.

Tenderers who wish to register on the National Treasury's Suppliers Database may contact the National Treasury.

C.2.7 The arrangements for a compulsory clarification meeting are stated in the Tender Notice and Invitation to Tender:

*Tenderers must sign the attendance list 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 list.

C.2.12 No alternative offer will be accepted.

C.2.13.3 Parts of each tender offer communicated on paper shall be submitted as an o**riginal, plus one electronic format copy (Disk)**

C.2.15 The closing time for submission of tender offers is as stated in the Tender Notice and Invitation to Tender.

C.2.15.1 The Employer's address for delivery of tender offers and identification details to be shown on each tender offer package are:

Location of Tender box:	Kopanong Local Municipality Main Offices	
Physical address:	20 Louw Street Trompsburg 9913	
Identification details:	Contract number:	KLM/MIG/FS1192/2021
	Title of Tender:	TROMPSBURG: PERMITTING AND CLOSURE OF EXISTING DISPOSAL SITE AND CONSTRUCTION OF A NEW DISPOSAL SITE

C.2.13.5 The closing time and location for the tender offers are:

Time	12H00 on Friday, 03 May 2024
Location:	Kopanong Local Municipality offices: 20 Louw Street, Trompsburg, 9913

C.2.13.9 Telephonic, facsimile or emailed tender offers will **not** be accepted.

C.2.15 The closing time for submission of tender offers is as stated in the Tender Notice and Invitation to Tender.

C.2.16 The tender offer validity period is ninety (90) days.

C.2.20 The Tenderer is required to submit with his Tender a letter of intent from an approved insurer undertaking to provide the Performance Guarantee to the format included in Part C1.3 of this procurement document.

C.2.22 Return all retained Tender Documents within 28 days after the expiry of the validity period.

C.2.23 The tenderer is required to submit with his tender a Certificate of Contractor Registration issued by the Construction Industry Development Board and a copy of an original valid Tax Clearance Certificate issued by the South African Revenue Services.

Where a tenderer satisfies CIDB Contractor grading designation requirements through joint venture formation, such tenderers must submit the Certificates of Contractor Registration in respect of each partner.

The tenderers shall also submit a certified for Specific Goals **"specific goals"** means specific goals as contemplated in section 2(1)*(d)* of the Act which may include contracting with persons, or categories of persons, historically disadvantaged by unfair discrimination on the basis of race, gender and disability including the implementation of programmes of the

Reconstruction and Development Programme as published in *Government Gazette* No. 16085 dated 23 November 1994:

(a) The name and domicilium citandi of the tenderer.
(b) The registration and VAT number of the tenderer.
(c) Sufficient evidence to claim points for specific goal.
(d) The expiry date of the Verification Certificate
(e) A unique identification number.
(f) The standard and/or normative document, including the issue and/or revision used to evaluate the tenderer

C.3.4 The time and location for opening of the tender offers are:

Time 12H00 on Friday, 03 May 2024
Location: Kopanong Local Municipality offices: 20 Louw Street, Trompsburg, 9913

C.3.11 *Add the following new sub item to Item 3.11:*

C.3.11.1 The tender evaluation method for the evaluation of all responsive tender offers will be **Method 4: Financial offer, quality and preferences**

Scoring financial offers

Risk Analysis

In Table below, the percentage deviation of the tendered amount is indicated. The risk to the Municipality increases where rates of tenderer's deviate by more than 15% and less than 15% below average.

Too low rates result in cash flow problems to the contractor, slower progress of the works, increased safety risks and reduction in quality of work; but alternatively, where rates are more than 15% higher than the average tendered rates, the risk to the Municipality increases with regard to a possible increase in project costs when the quantities increase substantially.

Critical Section	
High Risk, Low rate	Deviation < -15%
Low Risk, High Rate	Deviation > +15%

Scoring Quality

Quality shall be scored in accordance with the specified criteria. Only bidders that are successful during the pre-evaluation stage will be evaluated for functionality. Bidders with a minimum score of **70/100** will proceed to the financial scoring.

The system for earning functionality points (including Categories, Criteria and the points to be awarded for specific achievements) is described below.

CATEGORY OF FUNCTIONALITY	**MAXIMUM SCORE**
1) Key Personnel	30
2) Experience	40
3) Plant and Equipment	20
4) Locality	10
TOTAL POINTS (N_Q)	**100**

1. Key Personnel

Description	No. of work experience	Points	Max Points
Contracts Manager Attach CV certified ID and Qualifications. Min B-Tech Civil Eng	10 or more	10	**30**
	5 to 9	7	
	1 to 4	5	
	0	0	
Site Agent Attach CV and certified ID and Qualifications. Min National Diploma Civil Eng	10 or more	10	
	5 to 9	7	
	1 to 4	5	
	0	0	
Foreman Attach CV (Qualifications will be added advantage)	10 or more	10	
	5 to 9	7	
	1 to 4	5	

2. Experience

Contractor is required to submit proof of similar project to qualify for points.

Attach appointment and completion letters of completed projects from **Government institutions. If a bidder was a Subcontractor an additional reference letter from the Client (Government Institution) should be attached.**

Description	No. of projects	Points	Max Points
Similar Projects of a minimum value of R0.9m (Sports Facility, Earthworks, Road Construction, Fencing etc).	Over 4	40	**40**
	3-4	30	
	1-2	10	
	0	0	

3. Plant and Equipment

The Contractor to attach the proof of ownership of the plant or a signed letter of intent to hire from a plant hire company (signed by the owner of the plant hire company) including proof of ownership of the plant from the plant hire Company.

Description	Plant	Points	Max Points
Equipment	1 x Excavator	6	**20**
	1 x TLB (Tractor Loaded Backhoe)	4	
	2 x Tipper/ Dumper Trucks	3	
	1 x Roller Compactor	3	
	1 x Rammer/ Walk behind roller	2	
	1 x Water Tanker	2	

4. Locality

Provide municipal account statement, municipal proof of residence or lease agreement not older than 3 months

Description	Points	Max Points
Contractors with offices within Xhariep District	10	**10**
Contractors with offices within Free State	5	
Contractors with offices outside the Free State	3	

C.3.13 Tender offers will only be accepted if:

Note: All parties in a Joint Venture are required to submit the required documents

(a) A bidder's must be registered on the Central Supplier Database (CSD) of the National Treasury. Failure to submit CSD Registration Documentation will lead to disqualification.
(b) Tax compliance on CSD status.
(c) In case of the Joint Venture (JV), all JV companies must have tax compliance status on CSD.
(d) Certified copy of Company Registration certificate reflecting names and identity numbers of active shareholding members.
(e) Certified copy of shareholders ID's.
(f) In case of JV, each JV companies must attach its Company Registration Certificate reflecting names and identity numbers of active shareholders.
(g) Copy of JV agreement (in case of JV).
(h) Municipal Rates and Taxes Account not older than 90 days OR Lease Agreement must be accompanied by Landlord Municipal Rates Account. Failure to submit will be disqualification. The municipal rates and taxes must not be in arrears for more than 90 days. A clearance certificate will not be accepted.
(i) In case of a JV Municipal Rates and Taxes Account not older than 90 days– for all parties must be attached. The municipal rates and taxes must not be in arrears more than 90 days. A clearance certificate will not be accepted.
(j) No bid will be considered from the persons in the Service/Employment of the State/Government/State Owned Entities.
(k) the Tenderer is registered and in good standing with the compensation fund or with a licensed compensation insurer;
(l) All service provider(s) are requested to submit a Valid BBB-EE certificate.
(m) Bids must be valid for a minimum period of 120 days.
(n) the Tenderer is registered with the Construction Industry Development Board (CIDB) in an appropriate contractor grading designation of 4 CE or higher.

C.3.17 The number of paper copies of the signed Contract to be provided by the Employer is one.

The additional Conditions of Tender are as follows:

Annex C

Standard Conditions of Tender

As published in Annexure C of the cidb Standard for Uniformity for construction Procurement, Notice 423 Government Gazette No 42622 of 8 August 2019

C.1 General

C.1.1 Actions

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

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

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

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

C.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.

C.1.2 Tender Documents

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

C.1.3 Interpretation

C.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.

C.1.3.2 These conditions of tender, the tender data and tender schedules which are required for tender evaluation purposes, shall form part of any contract arising from the invitation to tender.

C.1.3.3 For the purposes of these conditions of tender, the following definitions apply:

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

i) someone in a position of trust has competing professional or personal interests which make it difficult to fulfil his or her duties impartially;

ii) an individual or tenderer 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 tenderer who employs that employee.

b) **comparative offer** means the price after the factors of a non-firm price and all unconditional discounts it can be utilised to 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;

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;

C.1.4 Communication and employer's agent

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

C.1.5 Cancellation and Re-Invitation of Tenders

C.1.5.1 An employer may, prior to the award of the tender, cancel a tender if-

a) due to changed circumstances, there is no longer a need for the engineering and construction works specified in the invitation;

b) funds are no longer available to cover the total envisaged expenditure; or

c) no acceptable tenders are received.

d) there is a material irregularity in the tender process.

C.1.5.2 The decision to cancel a tender invitation must be published in the same manner in which the original tender invitation was advertised

C.1.5.3 An employer may only with the prior approval of the relevant treasury cancel a tender invitation for the second time.

C.1.6 Procurement procedures

C.1.6.1 General

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

C.1.6.2 Competitive negotiation procedure

C.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 C.3.4, the employer shall announce only the names of the tenderers who make a submission. The requirements of C.8 relating to the material deviations or qualifications which affect the competitive position of tenderers shall not apply.

C.1.6.2.2 All responsive tenderers or at least a minimum of not less than three responsive tenderers that are highest ranked in terms of the evaluation criteria stated in the tender data shall be invited to enter into competitive negotiations based on the principle of equal treatment, keeping confidential the proposed solutions and associated information.

Notwithstanding the provisions of C.2.17, the employer may request that tenders be clarified, specified and fine-tuned in order to improve a tenderer's competitive posit ion provided that such clarification, specification, fine-tuning or additional information does not alter any fundamental aspects of the offers or impose substantial new requirements which restrict or distort competition or have a discriminatory effect.

C.1.6.2.3 At the conclusion of each round of negotiations, tenderers shall be invited by the employer to revise their 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.

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

C.1.6.3 Proposal procedure using the two stage-system

C.1.6.3.1 Option 1

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

C.1.6.3.2 Option 2

C.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.

C.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.

C.2 Tenderer's obligations

C.2.1 Eligibility

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

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

C.2.2 Cost of tendering

C.2.2.1 Accept that, unless otherwise stated in the tender data, the employer will not compensate the tenderer for any costs incurred in the preparation and submission of a tender offer, including the costs of any testing necessary to demonstrate that aspects of the offer complies with requirements.

C.2.2.2 The cost of the tender documents charged by the employer shall be limited to the actual cost incurred by the employer for printing the documents. Employers must attempt to make available the tender documents on its website so as not to incur any costs pertaining to the printing of the tender documents.

C.2.3 Check documents

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

C.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.

C.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.

C.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.

C.2.7 Clarification meeting

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

C.2.8 Seek clarification

Request clarification of the tender documents, if necessary, by notifying the employer at least five (5) working days before the closing time stated in the tender data.

C.2.9 Insurance

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

C.2.10 Pricing the tender offer

C.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 fourteen (14) days before the closing time stated in the tender data.

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

C.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.

C.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.

C.2.11 Alterations to documents

Do not make any alterations or additions to the tender documents, except to comply with instructions issued by the employer, or necessary to correct errors made by the tenderer. All signatories to the tender offer shall initial all such alterations.

C.2.12 Alternative tender offers

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

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

C.2.12.3 An alternative tender offer must only be considered if the main tender offer is the winning tender.

C.2.13 Submitting a tender offer

C.2.13.1 Submit one tender offer only, either as a single tendering entity or as a member in a joint venture to provide the whole of the works identified in the contract data and described in the scope of works, unless stated otherwise in the tender data.

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

C.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.

C.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.

C.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.

C.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.

C.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.

C.2.13.8 Accept that the employer will not assume any responsibility for the misplacement or premature opening of the tender offer if the outer package is not sealed and marked as stated.

C.2.13.9 Accept that tender offers submitted by facsimile or e-mail will be rejected by the employer, unless stated otherwise in the tender data.

C.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.

C.2.15 Closing time

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

C.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.

C.2.16 Tender offer validity

C.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.

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

C.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. If the validity period stated in C.2.16 lapses before the employer evaluating tender, the contractor reserves the right to review the price based on Consumer Price Index (CPI).

C.2.16.4 Where a tender submission is to be substituted, a tenderer must submit a substitute tender in accordance with the requirements of C.2.13 with the packages clearly marked as “SUBSTITUTE”.

C.2.17 Clarification of tender offer after submission

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

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

C.2.18 Provide other material

C.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.

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

C.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.

C.2.20 Submit securities, bonds and policies

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.

C.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.

C.2.22 Return of other tender documents

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

C.2.23 Certificates

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

C.3 The employer's undertakings

C.3.1 Respond to requests from the tenderer

C.3.1.1 Unless otherwise stated in the tender Data, respond to a request for clarification received up to five (5) working days before the tender closing time stated in the Tender Data and notify all tenderers who collected tender documents.

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

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

C.3.2 Issue Addenda

If necessary, issue addenda that may amend or amplify the tender documents to each tenderer during the period from the date that tender documents are available until three (3) working days before the tender closing time stated in the Tender Data. If, as a result a tenderer applies for an extension to the closing time stated in the Tender Data, the Employer may grant such extension and, shall then notify all tenderers who collected tender documents.

C.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.

C.3.4 Opening of tender submissions

C.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.

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

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

C.3.5 Two-envelope system

C.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.

C.3.5.2 Evaluate functionality 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 functionality evaluation more than the minimum number of points for functionality stated in the tender data, and announce the score obtained for the technical proposals and the total price. Return unopened financial proposals to tenderers whose technical proposals failed to achieve the minimum number of points for functionality.

C.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.

C.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.

C.3.8 Test for responsiveness

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

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

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

a) detrimentally affect the scope, quality, or performance of the works, services or supply identified in the Scope of Work*,*
b) significantly change the Employer*'s* or the tenderer's risks and responsibilities under the contract, or

c) affect the competitive position of other tenderers presenting responsive tenders, if it were to be rectified.

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

C.3.9 Arithmetical errors, omissions and discrepancies

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

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

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

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

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

a) If bills of quantities or pricing schedules apply and there is an error in the line-item total resulting from the product of the unit rate and the quantity, the line-item total shall govern and the rate shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line-item total as quoted shall govern, and the unit rate shall be corrected.

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

C.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.

C.3.11 Evaluation of tender offers

The Standard Conditions of Tender standardize the procurement processes, methods and procedures from the time that tenders are invited to the time that a contract is awarded. They are generic in nature and are made project specific through choices that are made in developing the Tender Data associated with a specific project.

Conditions of tender are by definition the document that establishes a tenderer’s obligations in submitting a tender and the employer’s undertakings in soliciting and evaluating tender offers. Such conditions establish the rules from the time a tender is advertised to the time that a contract is awarded and require employers to conduct the process of offer and acceptance in terms of a set of standard procedures.

The CIDB Standard Conditions of Tender are based on a procurement system that satisfies the following system requirements:

Requirement	Qualitative interpretation of goal
Fair	The process of offer and acceptance is conducted impartially without bias, providing simultaneous and timely access to participating parties to the same information.
Equitable	Terms and conditions for performing the work do not unfairly prejudice the interests of the parties.
Transparent	The only grounds for not awarding a contract to a tenderer who satisfies all requirements are restrictions from doing business with the employer, lack of capability or capacity, legal impediments and conflicts of interest
Competitive	The system provides for appropriate levels of competition to ensure cost effective and best value outcomes.
Cost effective	The processes, procedures and methods are standardized with sufficient flexibility to attain best value outcomes in respect of quality, timing and price, and least resources to effectively manage and control procurement processes.

The activities associated with evaluating tender offers are as follows:

a) Open and record tender offers received
b) Determine whether or not tender offers are complete
c) Determine whether or not tender offers are responsive
d) Evaluate tender offers
e) Determine if there are any grounds for disqualification
f) Determine acceptability of preferred tenderer
g) Prepare a tender evaluation report
h) Confirm the recommendation contained in the tender evaluation report

C.3.11.1 General

The employer must appoint an evaluation panel of not less than three persons conversant with the proposed scope of works to evaluate each responsive tender offer using the tender evaluation methods and associated evaluation criteria and weightings that are specified in the tender data.

C.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.

C.3.13 Acceptance of tender offer

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

a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement;
b) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract;
c) has the legal capacity to enter into the contract;
d) is not; insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act No. 2008, bankrupt or being wound up, has his/her affairs administered by a court or a judicial officer, has suspended his/her 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.

C.3.14 Prepare contract documents

C.3.14.1 If necessary, revise documents that shall form part of the contract and that were issued by the employer as part of the tender documents to take account of:

a) addenda issued during the tender period,
b) inclusion of some of the returnable documents and

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

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

C.3.15 Complete adjudicator's contract

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

C.3.16 Registration of the award

An employer must, within twenty-one (21) working days from the date on which a contractor's offer to perform a construction works contract is accepted in writing by the employer, register and publish the award on the cidb Register of Projects.

C.3.17 Provide copies of the contracts

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

C.3.18 Provide written reasons for actions taken

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

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FOR

TROMPSBURG: PERMITTING AND CLOSURE OF EXISTING DISPOSAL SITE AND CONSTRUCTION OF A NEW DISPOSAL SITE

PART T2 RETURNABLE DOCUMENTS

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FOR

TROMPSBURG: PERMITTING AND CLOSURE OF EXISTING DISPOSAL SITE AND CONSTRUCTION OF A NEW DISPOSAL SITE

T2.1 LIST OF RETURNABLE DOCUMENTS

The Tenderer must complete the following returnable documents:

1 RETURNABLE SCHEDULES REQUIRED FOR TENDER EVALUATION PURPOSES

2 OTHER DOCUMENTS REQUIRED FOR TENDER EVALUATION PURPOSES

3 RETURNABLE SCHEDULES THAT WILL BE INCORPORATED INTO THE CONTRACT

4 OTHER DOCUMENTS THAT WILL BE INCORPORATED INTO THE CONTRACT

5 C1.1 OFFER AND ACCEPTANCE (INCLUDED IN PART C1: AGREEMENT AND CONTRACT DATA)

6 C1.2 CONTRACT DATA (PART 2) DATA PROVIDED BY THE CONTRACTOR (INCLUDED IN PART C1: AGREEMENT AND CONTRACT DATA)

7 C2.2 BILL OF QUANTITIES (INCLUDED IN PART C2: PRICING DATA)

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T2.2 RETURNABLE SCHEDULES

The Tenderer must complete the following returnable documents.

T2.2.1 RETURNABLE SCHEDULES REQUIRED FOR TENDER EVALUATION PURPOSES

T2.2.2 OTHER DOCUMENTS REQUIRED FOR TENDER EVALUATION PURPOSES

T2.2.3 RETURNABLE SCHEDULES THAT WILL BE INCORPORATED IN THE CONTRACT

FORM A1 AUTHORITY FOR SIGNATORY

Status of concern submitting tender (delete whichever is not applicable.)

COMPANY /PARTNERSHIP /ONE-PERSON BUSINESS / CLOSE CORPORATION/ JOINT VENTURE

A. COMPANIES

If the bidder is a company, a certified copy of the resolution of the Board of Directors, personally signed by the chairperson of the board, authorizing the person to signs this bid to do so, as well as to sign any contract resulting from this bid and any other documents and correspondence in connection with this bid or contract on behalf of the company must be submitted with this Bid.

An example is shown below:

By resolution of the board of Directors on ……20….., Mr. / Ms ……has been duly authorized to sign all documents in connection with BID NO. ……

SIGNED ON BEHALF OF THE COMPANY: ……..

IN HIS CAPACITY AS: …….

DATE: ……

SIGNATURE OF SIGNATORY:…….

WITNESSES: 1. ……

2. ……..…..…..…..….

B. PARTNERSHIP

The following particulars in respect of every partner must be furnished and signed by every partner:

Full name of partner	Residential address	Signature
……..	…….	……..
……..	…….	……..
……..	…….	……..

We, the undersigned partners in the business trading as,……..

Hereby authorize …….. …… to sign this bid as well s any contract resulting from the bid and any other documents and correspondence in connection with this bid / or contract on our behalf.

……	…….	…….
Signature	Signature	Signature
……	…….	…….
Date	Date	Date

C. ONE-PERSON BUSINESS

I, the undersign …….hereby confirm that I am the sole owner of the business

trading as …….

…….. ……

Signature date

D. CLOSE CORPORATION

If the case of a close corporation submitting a bid, a certified copy of the founding Statement of such corporation shall be included with the Bid, together with a resolution by its members authorizing a member or other official of the corporation to sign the documents and correspondence in connection with this bid or contract on behalf of the company must be submitted with this Bid.

An example is shown below:

By resolution of the members at the meeting on the ……..20…….at ……Mr. / Ms ……whose signature appear below, has been duly authorized to sign all documents in connection with BID NO. ……

SIGNED ON BEHALF OF THE CLOSE CORPORATION: ……..

IN HIS / HER CAPACITY AS:…….

DATE: ……

SIGNATURE OF SIGNATORY:…….

WITNESSES: 1. ……...

2……..

E. JOINT VENTURE

This Returnable Schedule is to be completed by joint ventures.

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorise Mr./Ms. ……..., authorised signatory of the company……..., acting in the capacity of lead partner, to sign all documents in connection with the tender offer and any contract resulting from it on our behalf.

NAME OF FIRM	**ADDRESS**	**DULYAUTHORISEDSIGNATORY**
Lead Partner: …… CIDB Registration ……		Signature:……..…… Name:……..... Designation:……
Firm 1: …… CIDB Registration ……		Signature:……..…… Name:……..... Designation:……
Firm 2: …… CIDB Registration ……		Signature:……..…… Name:……..... Designation:……
Firm 3: …… CIDB Registration ……		Signature:……..…… Name:……..... Designation:……
Firm 4: …… CIDB Registration ……		Signature:……..…… Name:……..... Designation:……

FORM A2 SCHEDULE OF WORK CARRIED OUT BY TENDERER

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

EMPLOYER (Name, tel no)	**CONSULTING ENGINEER** (Name, tel no)	**NATURE OF WORK**	**VALUE OF WORK**	**YEAR OF COMPLETION**

SIGNED ON BEHALF OF TENDERER: .....

FORM A3 PROPOSED KEY PERSONNEL

The Tenderer shall list below the key personnel (including first nominee and the second-choice alternate), whom he proposes to employ on the Contract should his tender be accepted, both at his headquarters and on the Site, to direct and for the execution of the work, together with their certified qualifications, experience (CV), positions held and their nationalities.

DESIGNATION	NAME AND NATIONALITY OF: (i) NOMINEE (ii) ALTERNATE	SUMMARY OF QUALIFICATIONS, EXPERIENCE AND PRESENT OCCUPATION
HEADQUARTERS Partner/Director Project manager Other key staff (give designation)		

SIGNED ON BEHALF OF TENDERER: .....

DESIGNATION	NAME AND NATIONALITY OF: (i) NOMINEE (ii) ALTERNATE	SUMMARY OF QUALIFICATIONS, EXPERIENCE AND PRESENT OCCUPATION
SITE OFFICE Contracts Manager Site Engineer/Agent Site Supervisor Construction Foreman (give designation) Other key staff (give designation)		

SIGNED ON BEHALF OF TENDERER: .....

FORM A4 SCHEDULE OF CONSTRUCTIONAL PLANT

The Tenderer shall state below what Constructional Plant will be available for the work should he be awarded the Contract. The Contractor should attach to his offer proof of ownership of plant or lease agreement of such plant to be allocated to this Contract. The Lessor of the plant must provide proof of ownership of the plant to be allocated to this Contract.

DESCRIPTION, SIZE, CAPACITY	NUMBER	OWNED/ HIRED

SIGNED ON BEHALF OF TENDERER: .....

DESCRIPTION, SIZE, CAPACITY	NUMBER	OWNED/ HIRED

SIGNED ON BEHALF OF TENDERER: .....

FORM A5 SCHEDULE OF PROPOSED SUBCONTRACTORS

The Tenderer shall, in accordance with the provisions of Conditions of Tender, list below the subcontractors he proposes to employ for part(s) of the work.

I/We hereby confirm that the works outlined in the schedule below together with the values assigned have been designated as Sub-Contracting for work in the contract. The works below will be executed by Sub-Contractors procured in line with conditions set out below:

i. An EME or QSE.

ii. An EME or QSE which is at least 51% black owned by black people;

iii. An EME of QSE which is at least 51% owned by black people who are youth;
iv. An EME of QSE which is at least 51% owned by black people who are women;

v. An EME of QSE which is at least 51% owned by black people with disabilities;

vi. An EME of QSE which is at least 51% owned by black people living in rural or

2. Underdeveloped areas or townships;

i. A co-operative which is at least 51% owned by black people;

ii. An EME of QSE which is at least 51% owned by black people who are military veterans;

iii. More than one of the categories referred to above.

NB: Tenderers not agreeing or accepting the conditions contained herein will be deemed an unacceptable tender and accordingly eliminated.

Subcontractors must be chosen from the local community through the Kopanong Local Municipality Database. All subcontractors must be registered on National Treasury's Central Supplier Database which can be accessed on National Treasury's website.

The successful contractor must submit periodic reports to the Project Engineer as follows:

- Name of sub-contractor and BBBEE status
- Area and location of project
- Scope of work issued to the sub-contractor
- Value of the work issued (auditable)
- Assistance provided to the sub-contractor e.g. acquisition of materials, machinery and tools
- Performance of the sub-contractor

Upon completion of the project, the contractor is required to provide a final report to JW on skills acquired, description and value of work performed as well as their overall performance.

(The above information will assist the sub-contractor to improve their CIDB grading)

Skills transfer

It is an absolute requirement that the successful tenderer empowers the appointed sub-contractor through the transfer of skills. In this regard a skills-transfer plan must be submitted prior to commencement of the project.

This tender is subjected to the following Conditions in addition to any other conditions stipulated and made part of this tender as described hereunder. By signing this document, the tenderer agrees to comply with all conditions hereunder in the event of being successful.

TYPE OF WORK TO BE SUBCONTRACTED	**TYPE OF DISCIPLINE**	**VALUE OF SUBCONTRACTOR WORK (EXCLUDING VAT)**
TOTAL VALUE (EXCLUDING VAT)		

FORM A6 FINANCIAL REFERENCES

Financial Statements

I/We agree, if required, to furnish an audited copy of the latest set of financial statements together with my/our Directors' and Auditors' report for consideration by the Employer.

Details of Company's Bank Rating (To be completed by bank):

DESCRIPTION OF BANK DETAIL	BANK DETAILS APPLICABLE TO TENDERER'S HEAD OFFICE
Name of bank	
Branch name	
Branch code	
Street address	
Postal address	
Telephone number	
Fax number	
Account number	
Bank Rating Level	

ATTACH BANK RATING LETTER AND BANK CONFIRMATION LETTER ON THE BANK'S LETTERHEAD WITH STAMP

SIGNED ON BEHALF OF TENDERER: .....

FORM A7 SCHEDULE OF CURRENT COMMITMENTS

Notes to Tenderer:

1. **The Tenderer shall list below all Contracts currently under construction or awarded and about to commence and tenders for which offers have been submitted but awards not yet made.**
2. **In the event of a joint venture enterprise, details of all the members of the joint venture shall similarly be attached to this form.**
3. **The lists must be restricted to not more than 20 Contracts and 20 Tenders. If a tenderer's actual commitments or potential commitments are greater than 20 each, those listed should be in descending order of expected final contract value or sum tendered.**

Table 1 Contracts awarded				
Employer	Project	Expected total value of contract (incl. VAT)	Duration (Months)	Expected completion date

Table 2 TENDERS NOT YET AWARDED				
Employer	Project	Sum Tendered (incl. VAT)	Tendered Duration (Months)	Expected commencement

SIGNED ON BEHALF OF TENDERER: .....

FORM A8 ESTIMATED MONTHLY EXPENDITURE

The Tenderer shall state below the estimated value of work to be completed every month, based on his preliminary programme and his tendered unit rates.

The amounts for contingencies must not be included.

MONTH	VALUE
1	R .....
2	R .....
3	R .....
4	R .....
5	R .....
6	R .....
7	R .....
8	R .....
9	R .....
10	R .....
11	R .....
12	R .....
13	R .....
14	R .....
15	R .....
16	R .....
17	R .....
18	R .....
	COMPLETION OF CONTRACT
TOTAL	R .....

SIGNED ON BEHALF OF TENDERER: .....

FORM A9 PROPOSED DEVIATIONS AND QUALIFICATIONS BY TENDERER

The Tenderer should record any **proposed** deviations or qualifications he may wish to make to the Tender Documents in this Returnable Schedule. Alternatively, a tenderer may state such proposed deviations and qualifications in a covering letter attached to his tender and reference such letter in this schedule.

The Tenderer's attention is drawn to clause C.3.8 of the Standard Conditions of Tender referenced in the Tender Data regarding the Employer's handling of material deviations and qualifications.

If no deviations or modifications are desired, the schedule hereunder is to be marked **NIL** and signed by the Tenderer.

PAGE	CLAUSE OR ITEM	DESCRIPTION

SIGNED ON BEHALF OF TENDERER: .....

FORM A10 CERTIFICATE OF INSURANCE COVER

Note to Tenderer:
In the event of the Tenderer being a joint venture/consortium, the details of the individual members must also be provided.

The Tenderer shall provide the following details of this insurance cover:

(i) Name of Tenderer: .....

(ii) Period of Validity: .....

(iii) Value of Insurance:

- Insurance for Works and Contractor's equipment

  Company: .....

  Value: .....

- Insurance for Contractor's personnel

  Company: .....

  Value: .....

- General public liability

  Company: .....

  Value: .....

- SASRIA

  Company: .....

  Value: .....

SIGNED ON BEHALF OF TENDERER: .....

FORM A11 PRELIMINARY CONSTRUCTION PROGRAMME

Note to Tenderer:
If a tenderer wishes to submit an alternative tender then this form, appropriately completed, shall be attached to the Pricing Schedule for the alternative proposal.

The Tenderer shall attach a preliminary programme, to this Form.

This programme shall:

- be in the form of a bar chart (Gantt chart) or similar acceptable time/activity form reflecting the proposed sequence and tempo of execution of the various activities and the quantities that will be carried out every week under each of the elements, comprising the work for this contract;
- also indicate the point where the Tenderer intends to commence work operations and the direction in which the work will proceed;
- be in accordance with the information provided in Form A4: Schedule of Constructional Plant, Form A8: Estimated monthly expenditure, and with all other aspects of the Tender; and
- indicate planned working hours.

Details of the preliminary programme shall be appended to this Form.

Number of sheets, appended by the Tenderer to this Form ..... *[If NIL, enter NIL]*

SIGNED ON BEHALF OF TENDERER: .....

FORM A12 RETURNABLE DOCUMENT CHECKLIST

This form has been created as an aid to ensure a tenderer's compliance with the completion of the returnable schedules.

Reference No	Document Description	Tick if completed
Form A1	Authority for signatory	
Form A2	Schedule of work carried out by Tenderer	
Form A3	Proposed key personnel	
Form A4	Schedule of constructional plant	
Form A5	Schedule of proposed subcontractors	
Form A6	Financial references	
Form A7	Schedule of current commitments	
Form A8	Estimated monthly expenditure	
Form A9	Proposed deviations and qualifications by Tenderer	
Form A10	Certificate of insurance cover	
Form A11	Preliminary construction programme (for information purposes only)	
Form A12	Returnable document checklist	
Form B1	Certificate of Tenderer's attendance at the Site/Clarification meeting	
Form B2	Proof of registration with Construction Industry Development Board	
Form B3	Form concerning fulfilment of the Construction Regulations, 2014	
Form B4	Record of Addenda of Tender Documents	
Form B5	Letter of Intent to provide a Performance Guarantee	
Form C1	Declaration That Information on Central Supplier Database Is Correct and up to date	
Form C2	Compulsory Enterprise Questionnaire	
Form C3	Tax clearance certificate requirements and application form (MBD 2)	
Form C4	Declaration of Interest (MBD 4)	
Form C5	Preferencing Schedules: Preference points claim form in terms of Preferential Procurement Regulations, 2022 (MBD 6.1)	
Form C6	Contract form - purchase of goods/works (MBD 7.1)	
Form C7	Declaration of Bidder's Past Supply Chain Management Practices (MBD 8)	
Form C8	Certificate of Independent Bid Determination (MBD 9)	
Form C9	Protection of Personal Information	
Form C1.1	Form of Offer	
Form C2.2	Bills of Quantities	

SIGNED ON BEHALF OF TENDERER: .....

FORM B1 CERTIFICATE OF TENDERER'S ATTENDANCE AT THE SITE/CLARIFICATION MEETING

This is to certify that I, ... ,

representative of *[Tenderer]* .....

.....

of *[address]* .....

.....

.....

Telephone number .....

Fax number .....

visited and examined the Site on *[date]* .....

in the company of *[Engineer/Engineer's Representative]* .....

TENDERER'S REPRESENTATIVE: .....

ENGINEER'S REPRESENTATIVE: .....

MUNICIPALITY STAMP:

FORM B2 PROOF OF REGISTRATION WITH CONSTRUCTION INDUSTRY DEVELOPMENT BOARD

The Tenderer shall provide a printed copy of the Active Contractor's Listing off the CIDB website. (www.cidb.org.za). In the case of a joint venture, a printed copy of the Active Contractor's listing must be provided for each member of the joint venture.

Name of Contractor: .....

Contractor Grading Designation: .....

CIDB Contractor Registration Number: .....

SIGNED ON BEHALF OF THE TENDERER: .....

FORM B3 FORM CONCERNING FULFILMENT OF THE CONSTRUCTION REGULATIONS, 2014

In terms of Regulation 5(1)(h) of the Construction Regulations, 2014 (hereinafter referred to as the Regulations), promulgated on 7 February 2014 in terms of Section 43 of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993), the Employer shall not appoint a Contractor to perform construction work unless the Contractor can satisfy the Employer that his/her firm has the necessary competencies and resources to carry out the work safely and has allowed adequately in his/her Tender for the due fulfilment of all the applicable requirements of the Act and the Regulations.

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

YES	
NO	

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

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

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

.....

.....

.....

.....

.....

.....

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

.....

.....

.....

.....

.....

.....

.....

5 Potential key risks identified and measures for addressing risks:

.....

.....

.....

.....

.....

.....

.....

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

YES	
NO	

7 The Tenderer shall attach to this Form evidence that he is registered and in good standing with a compensation insurer who is approved by Department of Labour in terms of section 80 of the Compensation for Injury and Disease Act, 1993 (Act No 130 of 1993)(COID).

The Tenderer is required to disclose, by also attaching documentary evidence to this form, all inspections, investigations and their outcomes conducted by the Department of Labour into the conduct of the Tenderer at any time during the 36 months preceding the date of this Tender.

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

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

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

3 ..... ID NO: .....

FORM B4 RECORD OF ADDENDA TO TENDER DOCUMENTS

We confirm that the following communications issued by the Employer before the submission of this Tender offer, amending the Tender Documents, have been taken into account in this Tender offer:

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

Attach additional pages if more space is required.

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

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

SIGNED ON BEHALF OF TENDERER: .....

FORM B5 LETTER OF INTENT TO PROVIDE A PERFORMANCE GUARANTEE

It is hereby agreed that a Performance Guarantee drafted exactly as set out in the attached examples (See Section C1.3: Form of Guarantee) will be provided by the Surety named below:

Name of Surety (Bank or Insurer) _____

Address: _____

_____

_____

Signed: _____

Name: _____

Capacity: _____

On behalf of Tenderer (name of tenderer) _____

Date: _____

CONFIRMED BY Surety's Authorised representative

Signature(s): _____

Name (print): _____

Capacity _____

On behalf of Surety (Bank or Insurer) _____

Date: _____

FORM C1 DECLARATION THAT INFORMATION ON CENTRAL SUPPLIER DATABASE IS CORRECT AND UP TO DATE

THIS IS TO CERTIFY THAT I (name of bidder / authorized representative)……

……....., WHO REPRESENTS (state name of bidder)……...

…….....

AM AWARE OF THE CONTENTS OF THE CENTRAL SUPPLIER'S DATABASE WITH RESPECT TO THE BIDDER'S DETAILS AND REGISTRATION INFORMATION, AND THAT THE SAID INFORMATION IS CORRECT AND UP TO DATE AS ON THE DATE OF SUBMITTING THIS QUOTATION/BID.

AND I AM AWARE THAT INCORRECT OR OUTDATED INFORMATION MAY BE A CAUSE FOR DISQUALIFICATION OF THIS QUOTATION/BID FROM THE BIDDING PROCESS, AND/OR POSSIBLE CANCELLATION OF THE CONTRACT THAT MAY BE AWARDED ON THE BASIS OF THIS BID.

……..
NAME OF BIDDER

.....
SIGNATURE OF BIDDER OR AUTHORISED REPRESENTATIVE

DATE:.....

FORM C2 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 □ 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 □ an official of any municipality or municipal entity		□ 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 No 1 of 1999) □ a member of an accounting authority of any national or provincial public 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 or 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 No 1 of 1999)
□	a member of any provincial legislature		□ a member of an accounting authority of any national or provincial public entity
□	a member of the National Assembly or the National Council of Province		□ an employee of Parliament or a provincial legislature
□	a member of the board of directors of any municipal entity		
□	an official of any municipality or municipal entity		

*

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

*Insert separate page if necessary.

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

(i) authorises 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, 2004;

(iii) confirms that no partner, member, 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 other relationship with any of the Tenderers or those responsible for compiling the Scope of Work that could cause or be interpreted as a conflict of interest; 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: .....

FORM C3 TAX CLEARANCE CERTIFICATE REQUIREMENTS AND APPLICATION FORM

MBD 2

TAX CLEARANCE CERTIFICATE REQUIREMENTS AND APPLICATION FORM

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

1. In order to meet this requirement, bidders are required to complete in full the TCC 0001 form, "Application for a Tax Clearance Certificate" and submit it to any SARS branch office nationally or on the website www.sars.gov.za. The Tax Clearance Certificate Requirements are also applicable to foreign bidders / individuals who wish to submit bids.

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

3. 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.

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

5. Tax Compliance Status (TCS) Pin as of 18 April 2016

a. In terms of the new Tax Compliance Status System implemented by SARS on 18 April 2016, taxpayers are now able to issue the municipality with a TCS Pin which can be used to verify abidder's tax status online via SARS E-filing.
b. The taxpayer must issue the municipality with the following:

Bidders who are not in possession of an original Tax Clearance Certificate must provide at least 2 ofthe 3 numbers listed below in order to verify the Tax Clearance Certificate via SARS e-filing.

1. Tax Reference Number	
2. Tax Compliance Status Pin	
3. Tax Clearance Certificate Number:	

c. If a bidder is registered on the Kopanong Local Municipality Supplier's Database and the Municipality is already in possession of an original tax clearance certificate which is valid on closing date of bid, it MUST be indicated as such on this page, whereby the attaching of a new tax clearance certificate to this page will not be needed.

6. Should a Tax Clearance Certificate not be verifiable on the SARS e-filing system, the bidder will be afforded an opportunity to submit a valid, verifiable Tax Clearance Certificate. It will result in the invalidation of the bid, should the bidder fail to provide a valid, verifiable Tax Clearance Certificate.

FORM C4 DECLARATION OF INTEREST

MBD 4

DECLARATION OF INTEREST

1.	No bid will be accepted from persons in the service of the state*.	
2.	Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in the service of the state, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority.	
3.	**In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.**	
3.1	Full Name of bidder or his / her representative: ……..	
3.2	Identity number: ……	
3.3	Position occupied in the Company (director, trustee, shareholder[2]): ……..	
3.4	Company Registration Number: ……..	
3.5	Tax Reference Number: ……..	
3.6	VAT Registration Number: ……..	
3.7	The names of all directors / trustees / shareholders / members, their individual identity numbers and state employee numbers (where applicable) must be indicated in paragraph 4 below.	
3.8	Are you presently in the service of the state?*	**YES / NO**
3.8.1	If yes, furnish the following particulars: Name of person / director / trustee / shareholder member: …….. Name of state institution at which you or the person connected to the bidder is employed: …….. Position occupied in the state institution: …….. Any other particulars: ……. ……..	

3.9 3.9.1	Have you been in the service of the state for the past twelve months? If so, furnish particulars. …….. ……..	**YES / NO**
3.10 3.10.1	Do you have any relationship (family, friend, other) with persons in the service of the state and who may be involved with the evaluation and or adjudication of this bid? If yes, furnish the following particulars: Name of person: ……. Name of state institution at which you or the person connected to the bidder is employed: …….. Position occupied in the state institution: …….. Any other particulars: ……. ……..	**YES / NO**
3.11 3.11.1	Are you aware of any relationship (family, friend, other) between the bidder and any person in the service of the state who may be involved with the evaluation and or adjudication of this bid? If yes, furnish the following particulars: Name of person: ……. Name of state institution at which you or the person connected to the bidder is employed: …….. Position occupied in the state institution: …… Any other particulars: ……. ……...	**YES / NO**
3.12 3.12.1	Are any of the company's directors, managers, principal shareholders or stakeholders in the service of the state? If yes, furnish the following particulars: Name of person / director / trustee / shareholder / member: ……	**YES / NO**

	Name of state institution at which you or the person connected to the bidder is employed: …….. Position occupied in the state institution: …… Any other particulars: ……. ……..……	
3.13 3.13.1	Is any spouse, child or parent of the company's directors, trustees, managers, principle shareholders or stakeholders in the service of the state? If yes, furnish the following particulars: Name of person / director / trustee / shareholder / member: …… Name of state institution at which you or the person connected to the bidder is employed: …….. Position occupied in the state institution: …… Any other particulars: ……. …….……..	**YES / NO**
3.14 3.14.1	Do you or any of the directors, trustees, managers, principle shareholders, or stakeholders of this company have any interest in any other related companies or business whether or not they are bidding for this contract? If yes, furnish particulars: …….. ……..	**YES / NO**

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

THE FOLLOWING INFORMATION IS <u>COMPULSORY</u> TO COMPLETE:

Full Name	Identity Number	Individual Tax Number for each Director	State Employee Number (where applicable)

5.	**The contract will be automatically cancelled if there is a conflict of interest which is not disclosed by the bidder.**

……..	……..……..
Signature	Date
……	…….
Capacity	Name of Bidder

[1]MSCM Regulations: "in the service of the state" means to be -

(a) a member of –
  (i) any municipal council;
  (ii) any provincial legislature; or
  (iii) the National Assembly or the National Council of Provinces;
(b) a member of the board of directors of any municipal entity;
(c) an official or any Municipality or municipal entity;
(d) an employee of any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No. 1 of 1999);
(e) a member of the accounting authority of any national or provincial entity; or
(f) an employee of Parliament or a provincial legislature.

[2]"Shareholder" means a person who owns shares in the company and is actively involved in the management of the company or business and exercise control over the company.

FORM C5 PREFERENCING SCHEDULES: PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

MBD 6.1

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

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

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1. GENERAL CONDITIONS

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

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

1.2 To be completed by the organ of state

(*delete whichever is not applicable for this tender*).

a) The applicable preference point system for this tender is the 90/10 preference point system.

b) The applicable preference point system for this tender is the 80/20 preference point system.

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

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

(a) Price; and

(b) Specific Goals.

1.4 To be completed by the organ of state:

The maximum points for this tender are allocated as follows:

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

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

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

2. DEFINITIONS

(a) **"tender"** means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;

(b) **"price"** means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts;

(c) **"rand value"** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

(d) **"tender for income-generating contracts"** means a written offer in the form determined by an organ of state in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the organ of state and a third party that produces revenue for the organ of state, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions; and

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

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

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

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

80/20 **or** **90/10**

$$Ps = 80\left(1 - \frac{Pt - P\,min}{P\,min}\right) \quad \text{or} \quad Ps = 90\left(1 - \frac{Pt - P\,min}{P\,min}\right)$$

Where

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

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

3.2.1. POINTS AWARDED FOR PRICE

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

80/20 **or** **90/10**

$$Ps = 80\left(1 + \frac{Pt - P\,max}{P\,max}\right) \quad \text{or} \quad Ps = 90\left(1 + \frac{Pt - P\,max}{Pmax}\right)$$

Where

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

4. POINTS AWARDED FOR SPECIFIC GOALS

4.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 below as may be supported by proof/ documentation stated in the conditions of this tender:

4.2. In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of—

(a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or

(b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system,

then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

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

(Note to organs of state: Where either the 90/10 or 80/20 preference point system is applicable, corresponding points must also be indicated as such.

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

The specific goals allocated points in terms of this tender	Number of points allocated (90/10 system) (To be completed by the organ of state)	Number of points allocated (80/20 system) (To be completed by the organ of state)	Number of points claimed (90/10 system) (To be completed by the tenderer)	Number of points claimed (80/20 system) (To be completed by the tenderer)
Youth more than 50% of ownership		5		
Enterprise within Kopanong Local Municipality Jurisdiction		15		

DECLARATION WITH REGARD TO COMPANY/FIRM

4.3. Name of company/firm…….

4.4. Company registration number: ……...

4.5. TYPE OF COMPANY/ FIRM

- ☐ Partnership/Joint Venture / Consortium
- ☐ One-person business/sole propriety
- ☐ Close corporation
- ☐ Public Company
- ☐ Personal Liability Company
- ☐ (Pty) Limited
- ☐ Non-Profit Company
- ☐ State Owned Company

[TICK APPLICABLE BOX]

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

i) The information furnished is true and correct;

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

iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 4.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct;

iv) If the specific goals have been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the organ of state may, in addition to any other remedy it may have–

(a) disqualify the person from the tendering process;

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

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

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

(e) forward the matter for criminal prosecution, if deemed necessary.

	…… **SIGNATURE(S) OF TENDERER(S)**
SURNAME AND NAME:	……
DATE:	……
ADDRESS:	…… …… …… ……

FORM C6: CONTRACT FORM - PURCHASE OF GOODS/WORKS

MBD 7.1

CONTRACT FORM - PURCHASE OF GOODS/WORKS

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

PART 1 (TO BE FILLED IN BY THE BIDDER)

1. I hereby undertake to supply all or any of the goods and/or works described in the attached bidding documents to (name of institution) ……..……. in accordance with the requirements and 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 time of 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;
   - Tax clearance certificate;
   - Pricing schedule(s);
   - Technical Specification(s);
   - Preference claims for Broad Based Black Economic Empowerment Status Level of Contribution in terms of the Preferential Procurement Regulations 2022;
   - 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 goods and/or works 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 fulfilment 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 7.1

CONTRACT FORM - PURCHASE OF GOODS/WORKS

PART 2 (TO BE FILLED IN BY THE PURCHASER)

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

2. An official order indicating delivery instructions is forthcoming.

3. I undertake to make payment for the goods/works delivered in accordance with the terms and conditions of the contract, within 30 (thirty) days after receipt of an invoice accompanied by the delivery note.

ITEM NO.	**PRICE (ALL APPLICABLE TAXES INCLUDED)**	**BRAND**	**DELIVERY PERIOD**	**B-BBEE STATUS LEVEL OF CONTRIBUTION**	**MINIMUM THRESHOLD FOR LOCAL PRODUCTION AND CONTENT (if applicable)**

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

SIGNED AT ……ON……..

NAME (PRINT) …….

SIGNATURE …….

OFFICIAL STAMP

WITNESSES

1. …….

2. …….

DATE …….

FORM C7: DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

MBD 8

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

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

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

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

a. abused the municipality's / municipal entity's supply chain management system or committed any improper conduct in relation to such system;
b. been convicted for fraud or corruption during the past five years;
c. willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
d. been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2015).

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

Item	Question	Yes	No
4.1	**Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector?** **(Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the *audi alteram partem* rule was applied).** The Database of Restricted Suppliers now resides on the National Treasury's website(**www.treasury.gov.za**) and can be accessed by clicking on its link at the bottom of the home page.	Yes ☐	No ☐
4.1.1	If so, furnish particulars:		
4.2	Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2015)? **The Register for Tender Defaulters can be accessed on the National Treasury's website (www.treasury.gov.za) by clicking on its link at the bottom of the home page.**	Yes ☐	No ☐
4.2.1	If so, furnish particulars:		

Item	Question	Yes	No
4.3	Was the bidder or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?	Yes ☐	No ☐
4.3.1	If so, furnish particulars:		
4.4	Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?	Yes ☐	No ☐
4.4.1	If so, furnish particulars:		
4.5	Was any contract between the bidder and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes ☐	No ☐
4.7.1	If so, furnish particulars:		

CERTIFICATION

I, THE UNDERSIGNED (FULL NAME) .....
CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM TRUE AND CORRECT.

I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT, ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

..... **.....**
Signature **Date**

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

FORM C8: CERTIFICATE OF INDEPENDENT BID DETERMINATION

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

1 This Municipal Bidding Document (MBD) must form part of all bids[1] invited.

2 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).[2] Collusive bidding is a pe se prohibition meaning that it cannot be justified under any grounds.

3 Municipal Supply Regulation 38 (1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:

a. take all reasonable steps to prevent such abuse;

b. reject the bid of any bidder if that bidder or any of its directors has abused the supply chain management system of the municipality or municipal entity or has committed any improper conduct in relation to such system; and

c. cancel a contract awarded to a person if the person committed any corrupt or fraudulent act during the bidding process or the execution of the contract.

4 This MBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.

5 In order to give effect to the above, the attached Certificate of Bid Determination (MBD 9) must be completed and submitted with the bid:

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

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

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

KLM/MIG/FS1192/2021: TROMPSBURG: PERMITTING AND CLOSURE OF EXISTING DISPOSAL SITE AND CONSTRUCTION OF A NEW DISPOSAL SITE

(Bid Number and Description)

in response to the invitation for the bid made by:

KOPANONG LOCAL MUNICIPALITY

(Name of Municipality / Municipal Entity)

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

I certify, on behalf of:_____that:

(Name of Bidder)

1. I have read and I understand the contents of this Certificate;
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;
5. For the purposes of this Certificate and the accompanying bid, I understand that the word “competitor” shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:

    (a) has been requested to submit a bid in response to this bid invitation;
    (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
    (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder

MBD 9

6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium[3] will not be construed as collusive bidding.
7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
    (a) prices;
    (b) geographical area where product or service will be rendered (market allocation);
    (c) methods, factors or formulas used to calculate prices;
    (d) the intention or decision to submit or not to submit, a bid;
    (e) the submission of a bid which does not meet the specifications and conditions of the bid; or
    (f) bidding with the intention not to win the bid.
8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.
9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

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

MBD 9

10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2015 or any other applicable legislation.

.....	.....
Signature	Date
.....	.....
Position	Name of Bidder

FORM C9: PROTECTION OF PERSONAL INFORMATION

PROTECTION OF PERSONAL INFORMATION

1. The following terms shall bear the same meaning as contemplated in Section 1 of the Protection of Personal information act, No.4 of 2013. ("POPIA"):
   Consent; data subject; electronic communication; information officer; operator; person; personal information; processing; record; Regulator; responsible party; special information; as well as any terms derived from these terms.

2. **Kopanong Local Municipality** or its representative will process all information by the Respondent in terms of the requirements contemplated in Section4(1) of the POPIA:
   Accountability; Processing limitation; Purpose specification; Further processing limitation; Information quality;Openness; Security safeguards and Data subject participation.

3. The Parties acknowledge and agree that, in relation to personal information that will be processed pursuant to this BID, the Responsible party is "**Kopanong Local Municipality**" and the Data subject is the "Respondent". **Kopanong Local Municipality** will process personal information only with the knowledge and authorisation of the Respondent and will treat personal information which comes to its knowledge as confidential and will not disclose it, unless so required by law or subject to the exceptions contained in the POPIA.

4. **Kopanong Local Municipality** reserves all the rights afforded to it by the POPIA in the processing of any of its information as contained in this BID and the Respondent is required to comply with all prescripts as detailed in the POPIA relating to all information concerning **Kopanong Local Municipality**.

5. In responding to this bid, **Kopanong Local Municipality** acknowledges that it will obtain and have access to personal information of the Respondent. **Kopanong Local Municipality** agrees that it shall only process the information disclosed by Respondent in their response to this bid for the purpose of evaluating and subsequent award of business and in accordance with any applicable law.

6. **Kopanong Local Municipality** further agrees that in submitting any information or documentation requested in this BID, the Respondent is consenting to the further processing of their personal information for the purpose of, but not limited to, risk assessment, assurances, contract award, contract management, auditing, legal opinions/litigations, investigations (if applicable), document storage for the legislatively required period, destruction, de-identification and publishing of personal information by **Kopanong Local Municipality** and/or its authorised appointed third parties.

7. Furthermore, KOPANONG Local Municipality will not otherwise modify, amend or alter any personal data submitted by the Respondent or disclose or permit the disclosure of any personal data to any third party without the prior writtenconsent from the Respondent. Similarly, **Kopanong Local Municipality** requires the Respondent to process any personal information disclosed by **Kopanong Local Municipality** in the bidding process in the same manner.

8. **Kopanong Local Municipality** shall, at all times, ensure compliance with any applicable laws put in place and maintain sufficient measures, policies and systems to manage and secure against all forms of risks to any information that may beshared or accessed pursuant to this BID (physically, through a computer or any other form of electronic communication).

9. **Kopanong Local Municipality** shall notify the Respondent in writing of any unauthorised access to information, cybercrimes or suspected cybercrimes, in its knowledge and report such crimes or suspected crimes to the relevant authorities in accordance with applicable laws, after becoming aware of such crimes or suspected crime. The Respondent must take all necessary remedial steps to mitigate the extent of the loss or compromise of personal information and to restore the integrity of the affected personal information as quickly as is possible.

10. The Respondent may, in writing, request **Kopanong Local Municipality** to confirm and/or make available any personal information in its possession in relation to the Respondent and if such personal information has been accessed by third parties and the identity thereof in terms of the POPIA. The Respondent may further request that **Kopanong Local Municipality** correct (excluding critical/mandatory or evaluation information), delete, destroy, withdraw consent or object to the processing of any personal information relating to the Respondent in **Kopanong Local Municipality**'s possession in terms of the provision of the POPIA and utilizing Form 2 of the POPIA Regulations.

11. In submitting any information or documentation requested in this BID, the Respondent is hereby consenting to the processing of their personal information for the purpose of this BID and further confirming that they are aware of their rights in terms of Section 5 of POPIA

Respondents are required to provide consent below:

YES		**NO**	

12. Further, the Respondent declares that they have obtained all consents pertaining to other data subject's personal information included in its submission and thereby indemnifying **Kopanong Local Municipality** against any civil or criminal action, administrative fines or other penalty or loss that may arise as a result of the processing of any personal information that the Respondent submitted.

13. The Respondent declares that the personal information submitted for the purpose of this BID is complete, accurate, not misleading, is up to date and may be updated where applicable.

Signature of Respondent's authorised representative: _____

Should a Respondent have any complaints or objections to processing of its personal information, by Kopanong Local Municipality, the Respondent can submit a complaint to the Information Regulator on https://www.justice.gov.za/inforeg/, click on contact us, click on complaints.IR@justice.gov.za

KOPANONG LOCAL MUNICIPALITY

CONTRACT NO: KLM/MIG/FS1192/2021

FOR

TROMPSBURG: PERMITTING AND CLOSURE OF EXISTING DISPOSAL SITE AND CONSTRUCTION OF A NEW DISPOSAL SITE

THE CONTRACT

KOPANONG LOCAL MUNICIPALITY

CONTRACT NO: KLM/MIG/FS1192/2021

FOR

TROMPSBURG: PERMITTING AND CLOSURE OF EXISTING DISPOSAL SITE AND CONSTRUCTION OF A NEW DISPOSAL SITE

PART C1 AGREEMENT AND CONTRACT DATA

KOPANONG LOCAL MUNICIPALITY

CONTRACT NO: KLM/MIG/FS1192/2021

FOR

TROMPSBURG: PERMITTING AND CLOSURE OF EXISTING DISPOSAL SITE AND CONSTRUCTION OF A NEW DISPOSAL SITE

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:

TROMPSBURG: PERMITTING AND CLOSURE OF EXISTING DISPOSAL SITE AND CONSTRUCTION OF A NEW DISPOSAL SITE

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.

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(s) _____ _____

Name(s) _____ _____

Capacity _____ _____

_____
[Name and address of organisation]

Name and signature of witness _____ Date _____

CIDB Registration number _____

ACCEPTANCE

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

The terms of the Contract are contained in

Part C1	Agreements and Contract Data *[which includes this Agreement]*
Part C2	Pricing Data
Part C3	Scope of Work
Part C4	Site Information

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

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

The Tenderer shall within the time required to submit documentation in accordance with clause 5.3.2 of the Contract Data (C1.2) after receiving a completed copy of this Agreement, including the Schedule of Deviations (if any), contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of any 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 this Agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this Agreement.

Notwithstanding anything contained herein, this Agreement comes into effect on the date when the Tenderer receives one fully completed original copy of this document, including the Schedule of Deviations (if any). Unless the Tenderer (now Contractor) within five working days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this Agreement, this Agreement shall constitute a binding Contract between the parties.

Signature(s) _____ _____

Name(s) _____ _____

Capacity _____ _____

_____

[Name and address of organisation]

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 is agreed by the Parties becomes an obligation of the Contract and shall also be recorded here.

4. Any change or addition to the Tender Documents arising from the above agreements and recorded here, shall also be incorporated into the final draft of the Contract.

1 Subject .....

Details .....

2 Subject .....

Details .....

3 Subject .....

Details .....

4 Subject .....

Details .....

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 this process of offer and acceptance.

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

FOR THE TENDERER:

Signature(s) _____ _____

Name(s) _____ _____

Capacity _____ _____

_____

[Name and address of organisation]

Name and signature of witness _____ Date _____

FOR THE EMPLOYER:

Signature(s) _____ _____

Name(s) _____ _____

Capacity _____ _____

_____

[Name and address of organisation]

Name and signature of witness _____ Date _____

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

KOPANONG LOCAL MUNICIPALITY

CONTRACT NO: KLM/MIG/FS1192/2021

FOR

TROMPSBURG: PERMITTING AND CLOSURE OF EXISTING DISPOSAL SITE AND CONSTRUCTION OF A NEW DISPOSAL SITE

C1.2 CONTRACT DATA

PART 1: DATA PROVIDED BY THE EMPLOYER

CONDITIONS OF CONTRACT

The *General Conditions of Contract for Construction Works,* Third Edition, 2015, published by the South African Institution of Civil Engineering, is applicable to this Contract and is obtainable from www.saice.org.za.

Copies of these Conditions of Contract may be obtained from the South African Institution of Civil Engineering, Tel. 011 805 5947.

CONTRACT SPECIFIC DATA

The following contract specific data are applicable to this Contract:

Clause

1.1.1.13 The Defects Liability Period is 365 days.

1.1.1.14 The time for achieving Practical Completion is ……. Days.

1.1.1.15 The name of the Employer is Kopanong Local Municipality.

1.2.1.2 The Employer's address for receipt of communications is:

Physical address:	**Postal address:**
20 Louw Street	Private Bag x23
Trompsburg	Trompsburg
9913	9913

1.1.1.16 The Engineer is Engineering Aces (Pty) Ltd represented by an Employee duly authorised thereto in writing.

1.2.1.2 The Engineer's address for receipt of communications is:

Physical address:	**Postal address**:
Unit No.5, Prospes House	Unit No.5, Prospes House
58 Victoria Road	58 Victoria Road
Willows	Willows
Bloemfontein	Bloemfontein
9301	9301

Telephone: 051 430 0994

Email: admin@engineeringaces.com

1.1.1.26 The Pricing Strategy is: Re-measurement Contract.

Clause

3.2.3 The Engineer shall obtain the specific approval of the Employer before executing any of his functions or duties according to the following Clauses of the General Conditions of Contract:

1	Clause 6.3:	Variations
2	Clause 5.11.1:	Suspension of the Works
3	Clause 5.12:	Extension of Time for Practical Completion

5.3.1 The documentation required before commencement with Works execution are:

Health and safety plan (Refer to Clause 4.3)
Initial programme (Refer to Clause 5.6)
Security (Refer to Clause 6.2)
Insurance (Refer to Clause 8.6)
Cash flow projection.
Quality assurance plan
Concrete mix design

5.3.2 The time to submit the documentation required before commencement with Works execution is fourteen (14) days.

5.8.1 The non-working days are Sundays.

The special non-working days are:

1 Usually public holidays and (add voting days if applicable)
2 The year end break commencing and ending on dates as specified by SAFCEC.

5.13.1 The penalty for failing to complete the Works is R 2000 per day.

5.16.3 The latent defect period is ten (10) years for civil engineering works.

6.8.2 Contract Price Adjustment: Is not applicable

6.10.1.5 The percentage advance on materials not yet built into the Permanent Works is 80%.

6.10.3 The percent retention is 10%.

The retention money amount is limited to 5% 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 R 250 000

8.6.1.3 The limit of indemnity for liability insurance is R2 500 000 for any single claim, the number of claims to be unlimited during construction and Defects Liability Period.

8.6.1.5 In addition to the insurance required in terms of General Conditions of Contract Clause 8.6.11 to 8.6.1.3 the following insurance is also required:

Insurance cover against any damages or loss against production due to political unrest. The client shall not be held responsible for such damages or losses.

Existing buildings and infrastructure in the vicinity of the works likely to suffer damage as a result of the Contractor`s negligence to the value of R2 500 000.00

10.7.1 The determination of disputes shall be by arbitration.

Clause

PART 2: DATA PROVIDED BY THE CONTRACTOR

1.1.1.9 The Contractor is ……

1.2.1.2 The Contractor's address for receipt of communications is:

Physical address:	Postal address:
.....	.....
.....	.....
.....	.....
.....	.....

Telephone: .....
Fax: .....
Email: .....

6.2.1 The security to be provided by the Contractor shall be a Performance Guarantee of 10% of the Contract sum (inclusive of 15% VAT) plus retention as stated in 6.10.3 of part 1.

VARIATIONS TO THE CONDITIONS OF CONTRACT ARE:

4.4.2 Liability for subcontractors
Add the following to Clause 4.4.2 after the last sentence:

"The Contractor shall not subcontract any part of the Contract without the prior written consent of the Engineer, which consent shall not be unreasonably withheld."

5.3.3 Time to instruct commencement of the Works
Add the following to Clause 5.3.3 after the last sentence:

"The Contractor shall not commence working until they have an approved project specific health and safety plan in terms of the Occupational Health and Safety Act, 1993: Construction Regulations, 2014 and complied with the initial requirements thereof."

5.14.2 Issue of Certificate of Practical Completion
Replace "the Employer's Agent" *in the second line with the following:*

", the Contractor shall notify the Engineer, who shall inspect the Works and the Engineer"

5.14.4 Certificate of Completion
Replace " the Employer's Agent " *in the third line of the first paragraph with:*

", the Contractor shall notify the Engineer, who shall inspect the works and the Engineer"

6.2.2 *Delete Clause 6.2.2 in its entirety.*

6.10.4 Delivery, dissatisfaction with and payment of payment certificate

Replace "28 days" *in the seventh line with* "30 days".

6.11 Variations exceeding 15 per cent

Replace "15 per cent" *in the heading, the marginal heading and the fourteenth line with* "20 per cent".

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C1.3 PERFORMANCE GUARANTEE (PRO FORMA)

GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means: .....

Physical address: .....

"Employer" means: .....

"Contractor" means: .....

"Engineer" means: .....

"Works" means: .....

"Site" means: .....

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

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

Amount in words: .....

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

Amount in words: .....

"Expire 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 acknowledge that:

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

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

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

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

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

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

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

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

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

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

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

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

8 Payment by 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 al purposes in connection herewith.

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

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

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

Signed at .....

Date .....

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

Capacity.....

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

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

THIS AGREEMENT made at .....

on this the ..... day of ..... in the year ……

between …… *[hereinafter called "the Employer"]* of the one

part, herein represented by .....

in his capacity as .....

and .....

[hereinafter called "the Mandatary"] of the other part, herein represented by .....

.....

in his capacity as .....

WHEREAS the Employer is desirous that certain works be constructed, viz *TROMPSBURG: PERMITTING AND CLOSURE OF EXISTING DISPOSAL SITE AND CONSTRUCTION OF A NEW DISPOSAL SITE*

.....
and has accepted a Tender by the Mandatary for the construction, completion and maintenance of such Works and whereas the Employer and the Mandatary have agreed to certain arrangements and procedures to be followed in order to ensure compliance by the Mandatary with the provisions of the Occupational Health and Safety Act, 1993 (Act 85 of 1993);

NOW THEREFORE THIS AGREEMENT WITNESSETH AS FOLLOWS:

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

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

(a) the date of the Final Approval Certificate issued in terms of Clause 5.16.1 (GCC 2015) of the General Conditions of Contract *[hereinafter referred to as "the GCC"],* or

(b) the date of termination of the Contract in terms of Clauses 9.1, 9.2 or 9.3 (GCC 2015) of the GCC.

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

(a) All the requirements, regulations and standards of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993), hereinafter referred to as "The Act", together with its amendments and with special reference to the following sections of The Act:

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

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

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

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

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

4 In addition to the requirements of Clause 8.4 (GCC 2015) of the GCC and all relevant requirements of the Contract, the Mandatary agrees to execute all the Works forming part of this Contract and to operate and utilise all machinery, plant and equipment in accordance with the Act.

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

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

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

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

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

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

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

SIGNED FOR AND ON BEHALF OF THE EMPLOYER: .....

WITNESS 1 ..... 2 .....

NAME 1..... 2 .....
(IN CAPITALS)

SIGNED FOR AND ON BEHALF OF THE MANDATARY: .....

WITNESS 1 ..... 2 .....

NAME 1..... 2 .....
(IN CAPITALS)

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

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

An example is given below:

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

Mr/Ms ..... whose signature

appears below, has been duly authorised to sign the AGREEMENT in terms of THE OCCUPATIONAL

HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993) on behalf of .....

.....

SIGNED ON BEHALF OF THE COMPANY : .....

IN HIS/HER CAPACITY AS : .....

DATE : .....

SIGNATURE OF SIGNATORY : .....

WITNESS 1 ..... 2 .....

NAME 1..... 2 .....
(IN CAPITALS)

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PART C2 PRICING DATA

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C2.1 PRICING INSTRUCTIONS

1 The General Conditions of Contract, the Contract Data, the Specifications (including the Project Specifications) and the drawings shall be read in conjunction with the Bill of Quantities.

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

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

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

3 Descriptions in the Bill of Quantities are abbreviated and may differ from those in the Standardized and Scope of Work. No consideration will be given to any claim by the Contractor submitted on such a basis. The Bill has been drawn up generally in accordance with the latest issue of Civil Engineering Quantities[1]. Should any requirement of the measurement and payment clause of the appropriate Standardised or Project Specification(s) be contrary to the terms of the Bill or, when relevant, to the Civil Engineering Quantities, the requirement of the appropriate Standardised, Project, or Particular Specification as the case may be, shall prevail.

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

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

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

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

1 South African Institution of Civil Engineers, *The Standard System of Measurement of Civil Engineering Quantities 1012 (ENG_ACES 06/2024)*

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

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

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

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

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

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

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

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

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C2.2 BILL OF QUANTITIES

CLIENT: KOPANONG LOCAL MUNICIPALITY

CONTRACT NO: KLP/MIG/FS1192/2021

CONTRACT TITLE: TROMPSBURG : PERMITTING AND CLOSURE OF EXISTING DISPOSAL SITE AND CONSTRUCTION OF A NEW DISPOSAL SITE

BILL OF QUANTITIES

NB TENDERERS MUST COMPLETE THE BILL OF QUANTITIES IN BLACK INK

SECTION 1: PRELIMINARY AND GENERAL

PAYMENT REFERS TO	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 A	**110.00**	**GENERAL**				
8.3	**110.01**	SCHEDULED FIXED-CHARGE AND VALUE-RELATED ITEMS				
SDA 8.3.1		.01 Fixed preliminary and general charges	-	-	Sum	
SDA 8.3.2		.02 Value related preliminary and general charges	-	-	Sum	
SDA 8.4.1	**110.02**	**Scheduled time-related items:**				
		.01 Time-related preliminary and general charges	-	-	Sum	
SDA 8.5.1	**110.03**	**Sums stated provisionally by the Engineer:**				
		.01 Works executed by the Contractor:				
		.01 Drilling, Testing and Equipping of borehole (include all relevant pipe fittings, casing, pump, valves etc.)	-	Prov	Sum	R100 000.00
		.02 Charge required by Contractor on subitem 110.03.01.04 above	%	R100 000.00		
		.02 Works executed by selected subcontractors:				
		.01 Supply and install 1.5mm thick HDPE Geomembrane per specification SDDK5.5 to landfill cell	m²	6 440		
SECTION 1	Carried forward					

PAYMENT REFERS TO	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
		Brought forward				
		.03 Supply and install 2mm thick HDPE Geomembrane per specification SDDK5.5 to leachate pond	m²	3 400		
SDA 8.6	**110.04**	**Prime Cost Sums:**				
		.01 As built surveys: Cost of as built surveys	-	-	PC Sum	R30 000.00
		.02 Charge required by Contractor on sub-item 110.04.03 above	%	R30 000.00		
		.03 Transportation for the Engineer	-	-	PC Sum	R30 000.00
		.04 Charge required by Contractor on subitem 110.04.09 above	%	R30 000.00		
		.05 Telephone calls	-	-	PC Sum	R7 500.00
		.06 Charge required by Contractor on subitem 110.04.09 above	%	R7 500.00		
SDA 8.9	**110.06**	**Compliance with OHS Act and Construction Regulations:**	-	-	sum	
SDA 8.10	**110.07**	**Community Liaison and community relations**				
		.01 Community Liaison Officer Cost	month		5 500.00	
		.02 Project Steering Committee costs (R250 per member per sitting)	-	Prov	Sum	7 500.00
		.03 Health and Safety Representive (On site)	-	Prov	Sum	R9 000.00
		.04 Overheads, charges and profit on subitem 110.07.01, 110.07.02 and 110.07.03 above	%	R16 500.00		
PSA 8.11	110.1	**Contract nameboards**	-	-	Sum	
		TOTAL SECTION 1 CARRIED TO SUMMARY				

PAYMENT REFERS TO	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SABS 1200 C	**130.00**	**SITE CLEARANCE**				
PSC 8.2.1	**130.01**	**Clear and grub:**				
		.01 Areas	m²	900		
SABS 1200 DM	**147.00**	**EARTHWORKS (ROADS, SUBGRADE)**				
8.3.2	**147.01**	**Preparation of Site:**				
		.01 Removal of topsoil to a depth of 100 mm, and the stockpiling and maintenance thereof	m³	90		
PSDM 8.3.3	**147.02**	**Treatment of roadbed:**				
		.01 Roadbed preparation and compaction of material to:				
		.01 Minimum of 90% of modified AASHTO maximum density	m³	135		
PSDM 8.3.4	**147.03**	**Cut to fill:**				
		.01 Compact to 90% of modified AASHTO maximum density	m³	100		
8.3.5	**147.05**	**Selected layer compacted to 93% of modified AASHTO maximum density**	m³	135		
PA 12		**FENCING**				
	PA.01	**Supply and erection of new fencing material complete**				
		.01 2.1m High Fencing as per drawing 1012-CIV-DRG-206	m	60		
	PA.02	**New gates:**				
		.01 Clearvu pedestrian gate	No.	1		
		.02 Clearvu single leaf Sliding gate as per drawing: 1012-CIV-DRG-207	No.	1		
	TOTAL SECTION 2 CARRIED TO SUMMARY					

SECTION 3: LANDFILL CELL

PAYMENT REFERS TO	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SABS 1200 C	**130.00**	**SITE CLEARANCE**				
SDC 8.2.1	**130.01**	**Clear and grub:**				
		.01 Areas	m²	5 300		
SABS 1200 D	**140.00**	**EARTHWORKS**				
SDD 8.3.2	**140.01**	**Bulk excavation:**				
		.01 Excavate in all materials and use for embankment or backfill as ordered:				
		.01 Cut and shape existing landfill site to falls	m³	3 750		
		.02 Necessary excavations to create new landfill cell (excavated material to stockpile)	m³	5 244		
		.03 Cut material from stockpile, spread and compact in a 200mm layer on existing (shaped) landfill site	m³	1 500		
		.03 Extra over items 140.01.01 above for:				
		.01 Intermediate excavation	m³	20		
		.02 Hard rock excavation	m³	20		
SDD 8.3.3	**140.02**	**Restricted excavation for anchor trench:**				
		.01 Excavate for anchor trench as shown in all materials, and use for backfill or embankment, or dispose:				
		.01 Anchor Trench	m	320		
		.03 Backfill stabilized with 5% cement	m	320		
SDD 8.3.14	**140.10**	**Extra over items 140.01.01.02 for temporary stockpiling**	m³	3 950		
SECTION 3	Carried forward					

SECTION 3: LANDFILL CELL

PAYMENT REFERS TO	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
		Brought forward				
SDDB 8.3.2	**142.53**	**Excavate and dispose of unsuitable material from trench bottom**	m³	500		
1200 DK 8.2.4	**146.04**	**Geosynthetics: Layerworks shown on drawing number 1012-CIV-DRG-203d & 1012-CIV-DRG-203e**				
		.01 Geofabric filtration layer - non-woven geofabric minimum 300 g/m^2 (two layers)	m²	6 440		
SDDK 8.2.8		.02 Install Geosynthetic Clay liner in 2 layers layers (GCL) GCL as per specification in SDDK 5.4. Installed to manufacturer's specifications. Payment to be made by on net area i.e. no overlaps will be measured. Contractor to make allowance for overlaps per guidance from manufacturer.	m²	6 440		
SABS 1200 DM 8.3.3	**147.00**	**EARTHWORKS (ROADS, SUBGRADE)**				
	147.02	**Treatment of Landfill Cell: as shown on drawing number 1012-CIV-DRG-203a**				
		.01 Roadbed preparation and compaction of material to:				
		.01 150mm Thick Minimum of 93% of modified AASHTO maximum density	m²	3 560		
SABS 1200 LD 8.2.1	**213.00**	**SEWERS**				
	213.03	**Supply, lay, joint, bed as for flexible pipes on Class C Bedding and test pipeline. Rate to include for pipe trench excavation, lining, bedding, blanket and backfill**				
		.01 uPVC Class 34 pipes				
		.01 160mm dia	m	160		
SECTION 3	Carried forward					

SECTION 3: LANDFILL CELL

PAYMENT REFERS TO	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
		Brought forward				
8.2.1	**213.03**	**Supply, lay, joint, bed as for perforated pipes as shown on drawing number 1012-CIV-DRG-203a**				
		.04 HDPE PN80 pipes				
		.01 110mm dia	m	340		
		.02 160mm dia	m	80		
	213.07	**Penetrations and Special Details**				
		.01 Construct pipe penetration complete as per Penetration Detail A on drawing number 1012-CIV-DRG-203e	-	-	Sum	
		.03 Construct lining system sump detail as per Sump Detail A on drawing number 1012-CIV-DRG-203e	-	-	Sum	
	TOTAL SECTION 3 CARRIED TO SUMMARY					

SECTION 4: LEACHATE POND

PAYMENT REFERS TO	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SABS 1200 C	**130.00**	**SITE CLEARANCE**				
PSC 8.2.1	**130.01**	**Clear and grub:**				
		.01 Areas	m²	2 530		
SABS 1200 D	**140.00**	**EARTHWORKS**				
PSD 8.3.2	**140.01**	**Bulk excavation:**				
		.03 Extra over items 140.01.01.01 above for:				
		.02 Intermediate excavation	m³	100		
PSD 8.3.3	**140.02**	**Restricted excavation for anchor trench:**				
		.01 Excavate for anchor trench as shown 1012-CIV-DRG-203a in all materials, and use for backfill or embankment, or dispose:				
		.01 Anchor Trench	m	150		
		.05 Backfill stabilized with 5% cement	m³	150		
PSD 8.3.14	**140.10**	**Extra over items 140.01.01 for temporary stockpiling**	m³	2 530		
PSDB 8.3.3	**142.54**	**Excavation ancillaries:**				
		.01 Make up deficiency in backfill material:				
		.01 From other necessary excavations on Site	m³	150		
1200 DK 8.2.4	**146.04**	**Geosynthetics: Layerworks shown on drawing number 1012-CIV-DRG-203d**				
		.01 Geomembrane liner protection layer - non-woven geofabric with minimum thickness of 3.6mm, minimum mass 500 g/m²	m²	2 350		
PSDK 8.2.8		.02 Install Geosynthetic Clay liner GCL as per specification in PSDK 5.4. Installed to manufacturer's specifications. Payment to be made by on net area i.e. no overlaps will be measured. Contractor to make allowance for overlaps per guidance from manufacturer	m²	2 350		
SECTION 4	Carried forward					

PAYMENT REFERS TO	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT

SECTION 4: LEACHATE POND

PAYMENT REFERS TO	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
		Brought forward				
SABS 1200 DM	**147.00**	**EARTHWORKS (ROADS, SUBGRADE)**				
8.3.3	**147.02**	**Treatment of Leachate Pond: as shown on drawing number 1012-CIV-DRG-203d**				
		.01 Roadbed preparation and compaction of material to:				
		.01 150mm Thick Minimum of 93% of modified AASHTO maximum density	m²	1 600		
8.3.3	**147.02**	**Remaining Leachate Pond Layerworks as shown on drawing number 1012-CIV-DRG-203d**				
		.01 150mm thick Continuously Graded (38mm to 53mm) crushed stone ballast layer	m^3	150		
SABS 1200 LD	**213.00**	**SEWERS**				
8.2.1	**213.03**	**Supply, lay, joint, bed as for flexible pipes on Class C Bedding and test pipeline:**				
		.01 HDPE PN80 pipes				
		.01 160mm dia	m	65		
		.02 200mm dia	m	15		
8.2.1	**213.03**	**Supply, lay, joint, bed as for perforated pipes as shown on drawing number 1012-CIV-DRG-203a**				
		.04 HDPE PN80 pipes				
		.01 160mm dia	m	40		
SECTION 4	Carried forward					

PAYMENT REFERS TO	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT

SECTION 4: LEACHATE POND

PAYMENT REFERS TO	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
		Brought forward				
8.2.3	**213.06**	**Precast concrete manhole:**				
		.02 With SABS 558 type 2A cover and frame:				
		.03 As shown on drawing number 1012-CIV-DRG-203e	No.	2		
	213.1	**Penetrations and Special Details**				
		.01 Construct lining system sump detail as per Sump Detail B on drawing number 1012-CIV-DRG-203e	-	-	Sum	
	TOTAL SECTION 4 CARRIED TO SUMMARY					

SECTION 5: RECYCLING STORAGE AREA

PAYMENT REFERS TO	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SABS 1200 G	**170.00**	**CONCRETE (STRUCTURAL)**				
8.2.5	**170.01**	**Rough:**				
		.01 Plane Vertical formwork to:				
		.01 Over 200 mm and up to 300 mm	m	40		
		.02 Narrow sections to footings and openings up to 600 mm high	m	50		
8.2.2	**170.02**	**Smooth:**				
		.01 Vertical formwork to:				
		.01 To columns	m²	50		
		SCHEDULED REINFORCEMENT ITEMS				
8.3.1	**170.07**	**Mild steel bars of diameter:**				
		.01 Mesh Ref No.617	m²	80		
	170.08	**High-tensile steel bars in the following:**				
		.01 280 mm x 280 mm columns	t	0.50		
		.02 1000 x 1000 x 200mm pad footings	t	0.50		
		SCHEDULED CONCRETE ITEMS				
8.4.3	**170.13**	**Strength concrete:**				
		.03 Class 30 MPa/19 mm concrete in:				
		.01 280 mm x 280 mm columns	m³	10		
		.02 1000 x 1000 x 200mm pad footings	m³	10		
		.03 200mm thick floor slab	m³	15		
SABS 1200 HB	**180.00**	**STRUCTURAL STEELWORK**				
	180.01	**Supply and fabrication of steelwork:**				
		.02 Jointing by bolting:				
		.01 Roof sheeting as indicated in Drawing No 1012-CIV-DRG-204	m²	70		
SECTION 5	Carried forward					

SECTION 5: RECYCLING STORAGE AREA

PAYMENT REFERS TO	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
		Brought forward				
PD 10		**BUILDING WORK**				
	PD.01	**Brickwork:**				
		.02 440mm x 215mm x 190mm concrete blocks including plastering on external side of cages	m²	120		
	PD.02	**Plaster work:**				
		.01 25 mm thick, wood-float finish	m²	5		
		.02 25 mm thick, steel-float finish	m²	150		
	PD.05	**Structural timber:**				
		Supply, Deliver and Erect				
		.06 Roof trusses, rafters and purlins for enclosed storage areas complete as shown on Drawing number 1012-CIV-DRG-204	number	1		
PSA 8.16	**110.07**	**Structural pre-cast concrete**				
		.01 Lintel 230mm x 75mm as shown on Drawing No 1012-CIV-DRG-204	m	10		
	TOTAL SECTION 5 CARRIED TO SUMMARY					

SECTION 6: ACCESS CONTROL BUILDING

PAYMENT REFERS TO	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
	243.17	**Floor Coverings:**				
		.01 Preparation of cement screeds and walls				
		.01 Prepare cement screed to receive ceramic floor covering by applying 3mm thick Tal Screed master self levelling screed and smoothing compound	m²	20		
	243.18	**Bathroom Fittings:**				
		.01 "Buchel B1686", or of equal approved standard, cistern backrail	No.	1		
		.02 19mm diameter stainless steel grab rail to door fixed inside	No.	1		
		.03 Kimberley-Clark Professional MR3 satin finish stainless steel toilet tissue dispenser (Code SA426220), overall size 130x360mm high	No.	1		
		.04 Franke Chronos BS618 Grade 304 18/10 satin Stainless Steel soap dispenser (Code 359800), size 130 x 200 x 85mm deep, including replaceble 1 litre polyethylene container, cylinder lock with standard Franke key, plugged and screwed to the wall with stainless steel screws	No.	1		
	243.19	**Push Plates and Kicking Plates**				
		.01 "Union" aluminium kick plate 200mm high x 800mm wide x 2mm thick (AL5089-200W)	No.	1		
	243.20	**Door Furniture**				
		Manufactured by "Union"				
		.01 Male & female Indicator Sign on 152x152x3mm plate-Code AL5066-06ASE12	No.	1		
	243.22	**Tiling**				
		200 x 200mm "Union", or of equal approved standard, white glazed wall tiles grouted with an approved grouting (allow a delivery purchase price of R180,00/ m² Vat excluded)				
		.01 On walls	m²	4		
	243.22	**Tiling**				
		350 x 350mm approved standard, matt finish floor tiles grouted with an approved grouting (allow a deliverypurchase price of R190,00/ m² Vat excluded)				
		.01 On floors	m²	20		
		.02 On skirtings	m²	14		
SECTION 6	Carried forward					

SECTION 6: ACCESS CONTROL BUILDING

PAYMENT REFERS TO	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
		Brought forward				
	243.24	**Taps, Valves**				
		.01 "Cobra Stella 3306ST/EXT-15" or other approved wall tap with chrome plated flange plate	No.	2		
		.02 Rough Brass				
		.01 "Cobra Watertech 373", or of equal approved standard, shower trap with chromium plated grating	No.	1		
	243.25	**Fire Appliances**				
		.02 4.5kg Natex DCP Extinguisher (416mm height x 181 mm degree) according to SANS 1151 requirements and installed in accordance with SANS 0105	No.	2		
	243.26	**Mirrors**				
		.01 6mm silvered float glass copper backed mirror size 400 x 650mm with polished edges all round, plugged and screwed to wall with 40mm x No 8 brass screws with chromium plated domes screwed on and thick leather washers at back as distance pieces.	No.	1		
	243.29	**Miscellaneuos**				
		.01 Plumbing				
		.01 Water Closet (WC) suites	No.	1		
		.02 Wash Hand Basin (WHB)	No.	1		
		.02 Ironmongery				
		.01 Hinge	No.	2		
		.02 Lock, etc	No.	1		
		.03 Handles, etc	No.	2		
	243.30	**Supply and Install JOJO Tank**				
		1000l jojo tank complete with all pipe fittings and valves	No.	1		
	TOTAL SECTION 6 CARRIED TO SUMMARY					

CLIENT: KOPANONG LOCAL MUNICIPALITY

CONTRACT NO: KLP/MIG/FS1192/2021

CONTRACT TITLE: TROMPSBURG : PERMITTING AND CLOSURE OF EXISTING DISPOSAL SITE AND CONSTRUCTION OF A NEW DISPOSAL SITE

SUMMARY OF SCHEDULE OF QUANTITIES

SECTION 1	:	PRELIMINARY AND GENERAL.	R	
SECTION 2	:	ROADS AND FENCING.	R	
SECTION 3	:	LANDFILL CELL.	R	
SECTION 4	:	LEACHATE POND.	R	
SECTION 5	:	RECYCLING STORAGE AREA.	R	
SECTION 6	:	ACCESS CONTROL BUILDING.	R	
TOTAL OF SCHEDULE OF QUANTITIES			R	

CALCULATION OF TENDER SUM

TOTAL OF SCHEDULE OF QUANTITIES . . . . . R

CONTINGENCIES (10%)
The Sum provided here is under the sole control of the Engineer and may be deducted in whole or in part . . . . . R

SUBTOTAL . . . . . R

VALUE-ADDED TAX (VAT)
The tenderer shall add 15% of the subtotal for value-added tax . . . . . R

TENDER SUM CARRIED TO FORM OF TENDER R

SIGNED ON BEHALF OF TENDERER : . . . . . .

KOPANONG LOCAL MUNICIPALITY

CONTRACT NO: KLM/MIG/FS1192/2021

FOR

TROMPSBURG: PERMITTING AND CLOSURE OF EXISTING DISPOSAL SITE AND CONSTRUCTION OF A NEW DISPOSAL SITE

PART C3 SCOPE OF WORK

CONTENTS

STATUS

In the event of any discrepancy between the Scope of Works and a part or parts of the COLTO and SANS 1200 Standardized Specifications, the Bill of Quantities or the Drawings, the Project Specifications shall take precedence and prevail in the Contract

The Project Specifications form an integral part of the Contract Documents and supplement the Standard Specifications.

In the event of any discrepancy with a part or parts of the Standard Specifications, the Schedule of Quantities or the drawings, the Particular or Project Specifications shall take precedence.

The Standard Specifications, which form part of this contract, have been written to cover all phases of work normally required for road contracts, and they may therefore cover items not applicable to this particular contract.

C3.1 DESCRIPTION OF THE WORKS

C3.1.1 Employer's objectives

The Employer's objectives are to construct a regional solid waste site, for the disposal of waste generated by the towns of Gariep, Springfontein and Trompsburg. The regional solid waste site will be located in Trompsburg town.

C3.1.2 Overview of the Works

The work to be carried out includes the excavation of a landfill cell and a leachate (contaminated water) pond. Both the pond and the cell are then to be lined with a combination of geosynthetic products (typically High Destiny Polyethylene (HDPE) and geosynthetic clay liners (GCLs) and natural soils.

The extents of the works will also include the construction of the recyclable storage area. In addition, the plumbing works of the access control building, a fence, gravel access road, borehole drilling and minor stormwater drainage channels are to be constructed. The works may include the rehabilitation of areas affected by illegal dumping and the formation of manmade ponds resulting from the sourcing of gravel material from the site.

C3.1.3 Extent of the Works/ Scope of Works

The Works to be carried out by the Contractor under this Contract comprise mainly the following:

(a) Construction of the access gravel road
(b) Installation of the leachate drainage system to landfill cell
(c) Installation of lining system to leachate pond including inspection manhole
(d) Construction of the landfill cell and installation of composite lining system
(e) Completion of a 60m WVF perimeter fence complete with a pedestrian gate and a single leaf sliding gate
(f) Completion of plumbing works on the access control building
(h) Construction a recyclable storage area building
(i) Shaping and rehabilitation of the existing dump site using material excavated from landfill cells
(j) Temporary stockpiling of the excavated materials from landfill cells at designated areas
(k) The drilling of monitoring borehole

This description of the Works is not necessarily complete and shall not limit the work to be carried out by the Contractor under this Contract.

Approximate quantities of each type of work are given in the Bill of Quantities.

C3.1.4 Location of the Works site

This Project is located in the town of Trompsburg which is 120km south of Bloemfontein along the N1 to Cape Town. The coordinates of the site are as follows:

- 30°01’50.10"S/ 25°46'4.52"E

C3.1.5 Access to Works site

Access to the site is gained via R717 road to Philippolis.

No restriction on access to the Site of Works will be placed on persons or vehicles involved with the execution of the Works but personnel must comply with the security and safety requirements of the Kopanong Local Municipality. The Contractor must keep the Employer informed of staff changes. The making good of any damage caused by non-observance of such restrictions will be for the Contractor’s account.

Any vehicle used to transport and/or equipment on Site, shall not exceed the maximum permissible axles loading as allowed under the Provincial regulations.

C3.1.6 Services known to be in the vicinity of the site

No known services on the site.

C3.1.7 Changes to scope of work

It is a condition of this contract that the employer reserves the right to limit the total expenditure on the Works due to possible budget constraints. Should the tender sum exceed the budgeted amount, the scope of the works may be reduced at any time before or during the contract period to ensure that the final contract amount does not exceed the budgeted amount.

C3.2 ENGINEERING

C3.2.1 Design services and activity matrix

The Employer is responsible for the design of the Permanent Works.

The Contractor shall be responsible for the design of:

(a) The temporary works and their compatibility with the permanent works
(b) The Contractor shall supply all details necessary to assist the Engineer in the compilation of the as-built drawings.

C3.2.2 Employer's design

The Employer's design is based on available information and the finalisation of details may need to take place after the existing services have been exposed.

C3.2.3 Contractor's design

Where the Contractor is to supply the design of designated parts of the permanent Works or temporary Works he shall supply full working drawings supported by a professional engineer's design certificate.

C3.2.4 Drawings

The drawings form part of the tender document and are issued for tender purposes only.

The appointed Contractor will be supplied with one A1 paper print and a pdf copy on CD of each of the drawings. This print and pdf copy are issued free of charge and the Contractor will need to make or obtain any additional prints he may require at his own cost.

The Contractor shall use only the dimensions stated in figures on the Drawings in setting out the Works, and dimensions shall not be scaled from the Drawings, unless required by the Engineer. The Engineer will, on the request of the Contractor in accordance with the provisions of the Conditions of Contract, provide such dimensions as may have been omitted from the Drawings.

The Contractor shall ensure that accurate as-built records are kept of all infrastructure installed or relocated during the Contract. The position of pipe bends, junction boxes, duct ends and all other underground infrastructure shall be given by either co-ordinates, or stake value and offset. Where necessary, levels shall also be given. A marked-up set of drawings shall also be kept and updated by the Contractor. This information shall be *supplied* to the Engineer's Representative on a regular basis.

All information in possession of the Contractor, required by the Engineer and/or the Engineer's Representative to complete the as-built/record drawings, must be submitted to the Engineer's Representative before a Certificate of Completion will be issued.

The Drawings prepared by the Employer for the permanent Works are listed and bound in a separate volume. The Employer reserves the right to issue amended and/or additional drawings during the Contract.

C3.3 PROCUREMENT

C3.3.1 Preferential procurement procedures

C3.3.1.1 Requirements

The Employer intends through this Contract to provide work opportunities for the local residents.

This Contractor shall therefore employ local labour where possible.

C3.3.2 Employment targets

C3.3.2.1 Employment of local community labour

The maximum possible number of workers must be employed from the ranks of the currently unemployed persons in the local community.

To this end the Contractor is required to give preference to the use of local community labour and limit the use of non-local labour to key personnel only.

Local community labour is defined as people who reside in Trompsburg and whose name appears on the local unemployed labour list.

Key personnel are defined as supervisors, team leaders and skilled labourers without whom a specific task cannot be completed.

The target for local labour is 80% of non-key personnel.

C3.3.2.2 Employment of women

The target for employment of women is 30% of the total workforce.

C3.3.2.3 Employment of youth

The target for employment of youth (18-25 years of age) is 30% of the total workforce.

C3.3.2.4 Employment of disabled people

A minimum of one (1) disabled person must be employed on this contract.

C3.3.2.5 Remuneration of local labourers

The minimum wages shall be those prescribed by SAFCEC for the area in which the works fall.

C3.3.3 Contractor’s Staff

It is required that the Site Agent for this project to have a NQF level 5 qualification. If the contractor fails to produce such person a suitable Site Agent will be appointed by the Client and paid in full by the Contractor.

C3.4 MANAGEMENT

C3.4.1 Management of the Works

C3.4.1.1 Planning and programming

C3.4.1.1.1 Submitted programme

The Contractor's programme, required in terms of Clause 5.6.1 of GCC 2015, shall be in a bar chart form.

In addition to the requirements of Clause 5.6.1 of GCC 2015, the Contractor's programme shall show:

a) The various activities, related to a time scale, for each element of the Works, including those of Nominated and/or Subcontractors, in sufficient detail to be able to assess construction progress,
b) Critical path activities and their dependencies,
c) Key dates in respect of work to be carried out by others,
d) Key dates in respect of information to be provided by the Engineer and/or others,

If any change to the critical path occurs, the Contractor shall as soon as practicable notify the Engineer in writing.

The Contractor's programme and method statement will not be accepted as the basis for claims for additional compensation without due reference to all relevant associated factors.

C3.4.1.1.2 General Allowances

When drawing up his programme, the Contractor shall, take into consideration and make allowance for, inter alia:

a) Expected weather conditions and their effects,
b) Known physical conditions or artificial obstructions,
c) Searching for, dealing with and carrying out alterations to the existing services,
d) The accommodation of public access and traffic,
e) The provision and implementation of the health and safety plan in terms of the Construction Regulations, 2014 of the Occupational Health and Safety Act, and
f) The design, testing and approval of the concrete mixes.

C3.4.1.2 Review of progress

The Contractor shall review his progress each month and should progress lag behind the latest accepted programme, by more than 2 weeks, he shall submit a revised programme and method statement of how he proposes to make up the lost time. If, in the opinion of the Engineer, such revised programme will not make up the lost time, the Engineer shall have the right to request the Contractor to reorganize his work in a manner which will ensure an acceptable programme. Claims for additional payment to meet any costs incurred due to such reorganisation will not be accepted.

C3.4.1.3 Methods and procedures

C3.4.1.3.1 Method statements

When requested by the Engineer, the Contractor shall submit, within 2 weeks (14 days) of date of such written request, a method statement detailing the Contractor's proposed construction procedure of certain elements of the Works.

No work shall commence before the method statement has been submitted and approved. The approval shall not relieve the Contractor from his responsibilities in terms of the General Conditions of Contract.

C3.4.1.3.1 Neatness of the site

The general neatness and tidiness of the vicinity of the site are of particular concern. The Works will be visible to the public. The Contractor shall, therefore, on a day to day basis, keep the area of the Works in a condition acceptable to the Engineer.

C3.4.1.4 Weather conditions

C3.4.1.4.1 Extension of time for completion resulting from abnormal rainfall

Extension of time for completion will not be considered for normal rainfall but only for abnormal rainfall or saturated conditions and will be calculated in accordance with the following method:

a) The Contractor shall, in his programme, allow for the anticipated number of working days on which work could be delayed - as given in the Schedule below.

b) Extension of time will be calculated for each calendar month or part thereof over the full period for the completion of the Work, plus any approved extension thereof, as follows:
   i) A delay caused by abnormal rainfall will only be accepted for extension of time if, in the opinion of the Engineer, it delays an item or items which lie on the critical path determined by the Contractor's programme. Only delays on working days will be considered.
   ii) Abnormal rainfall will be considered to be days, as approved, on which rain delayed operations, less the anticipated number of days given in` the Schedule below.
   iii) The net extension of time determined for each month, which may be negative, shall accumulate algebraically to determine the net number days for extension of time due to abnormal rainfall, but a negative total at the end of the construction period will not be taken into account.
   iv) Where a portion of a month is involved, a pro rata number of days shall be calculated.

SCHEDULE

Anticipated number of working days on which work could be delayed as a result of rainfall and saturated conditions.

Month	Nn (days)	Rn (mm)
January	19	232.4
February	6	1.7
March	12	39.7
April	16	78.4
May	0	0
June	0	0.2
July	1	3.3
August	2	0.3
September	4	12.8
October	10	20.1
November	13	143.7
December	11	153
Total	**80**	**422.4**

Source: worldweatheronline.com (April 2024-March 2025)

The additional clauses to the General Conditions of Contract are:

Extensions of time in respect of clause 42 in respect of abnormal rainfall shall be calculated using the following formula for each calendar month or part thereof:

$$V = (Nw - Nn) + \frac{(Rw - Rn)}{X}$$

Where:

V = Extension of time in calendar days in respect of the calendar month under consideration.

Nw = Actual number of days during the calendar month on which a rainfall of 10 mm or more has been recorded.

Nn = Average number of days in the relevant calendar month, as derived from existing rainfall records, on which a rainfall of 20mm or more has been recorded for the calendar month.

Rw = Actual average rainfall in mm recorded for the calendar month under consideration.

Rn = Average rainfall in mm for the calendar month as derived from existing rainfall records as stated in the Site Information.

For purposes of the Contract Nn, Rn, X and Y shall have those values assigned to them in the South African Weather Service's rainfall records of the nearest station to the site.

If V is negative and its absolute value exceeds Nn, then V shall be taken as equal to minus Nn.

The total extension of time shall be the algebraic sum of all monthly totals for the period under consideration, but if the total is negative the time for completion shall not be reduced due to subnormal rainfall. Extensions of time for part of a month shall be calculated using pro rata values of Nn and Rn.

This formula does not take account flood damage which could cause further or concurrent delays and will be treated separately as far as extension of time is concerned.

The factor (Nw – Nn) shall be considered to represent a fair allowance for variations from the average in the number of days during which rainfall exceeds 10 mm. The factor (Rw-Rn) shall be considered to represent a fair allowance for variations from the average in the number of days during which the rainfall did not exceed 10 mm but wet conditions prevented or disrupted work.

For the purpose of applying the formula, accurate rain gauging shall be taken at a suitable point on the Site and the Contractor shall at his own expense, take all necessary precautions to ensure that rain gauges cannot be interfered with by unauthorized persons.

C3.4.1.4.2 Recording of weather

The Contractor shall provide a rain gauge as directed by the Engineer and precautions shall be taken to restrict access to the rain gauge by unauthorised persons.

C3.4.1.5 Quality plans and control

The Contractor shall prepare a quality management plan to be followed during the course of the Contract.

The quality management plan shall

i. clearly indicate the methods, programmes, procedures and other methods that the Contractor intends using as process control to ensure compliance of materials and workmanship with the requirements of the Contract (process control testing)

ii. Include the proof of status of calibration of all measuring devices that are to be used during the course of the Contract.

C3.4.1.6 Environment

C3.4.1.6.1 Protection of the environment

C3.4.1.6.1.1 Environment management plan

The Contractor shall comply with the provisions of the environmental management specification.

C3.4.1.6.1.2 Fires and burning of vegetation

No fires may be lit except at places approved by the relevant authority. The Contractor shall ensure that the fire hazard on and near the Site is reduced to a minimum and shall take immediate and effective steps to extinguish any fire that may break out.

Burning of vegetation and trees cleared from the Site and/or any other material may only be done on site if permitted in writing by the relevant authority, and shall then be strictly controlled by a competent supervisor, shall be carried out strictly in accordance with any directions given and shall be carried out solely at the risk of the Contractor.

C3.4.1.6.1.3 Preservation of flora and fauna and soil conservation

The Contractor shall:

a) take all precautions to prevent:
   i) the erosion of soils and/or
   ii) loss of or injury to domestic and other animals from any lands used or occupied by the Contractor;
b) refrain from destroying, removing or clearing trees, timber and scrub to any extent greater than is necessary for the execution of the Contract,
c) take care to cause the minimum of disturbance to the fauna and flora.
d) erect temporary fences on the servitude lines during the construction period to prevent loss of fauna. The fences shall be removed as soon as construction and testing are complete.
e) take precautions to keep the risk of fire to a minimum,
f) arrange that timber for firewood be obtained only from such places as may be approved by the Engineer;
g) take such measures as to ensure that his employees are aware of all laws and restrictions governing the hunting, disturbing, capturing or destroying of animals and birds in the vicinity of the camp or the Works or the taking of fish from any water ; and
h) prohibit all firearms from the site and temporary camps.

C3.4.1.7 Format of communications

Communications and instructions shall be given in writing and sent either by post, or facsimile. Site instructions shall be given in the Site Communication Book, which shall be a triplicate book provided by the Contractor.

C3.4.1.8 Management meetings

The Contractor will be required to attend the following site meetings during the term of the contract:

a) An inaugural site meeting to be held within three weeks after the Commencement Date.

b) Monthly site meetings from the order to commence the Works until the Completion of the Works.

c) Monthly Health and Safety meetings.

C3.4.1.9 Daily records

Daily records of all site activities and progress of work shall be kept by the Contractor. Any possible causes for delay to the Contract or which may result in additional costs to the Employer shall be recorded as clearly as possible. The records shall also include the plant on Site and personnel employed. The records shall be kept at all times in the Engineer's Site Office.

C3.4.1.9.1 Monthly labour returns

The Contractor shall submit with each statement for payment a labour return showing the Number Person Days and Labour Days recorded for the Contract. The returns shall be similar to the format approved by the Engineer.

C3.4.1.10 Lighting

Should the Contractor wish to undertake work when natural lighting is inadequate for the type of work to be performed, he shall, at his own expense, provide and maintain in good and safe condition adequate high-powered flood lighting for all the work areas where he is operating.

C3.4.1.11 Payment certificates

The statement to be submitted by the Contractor in terms of Clause 6.10 of the General Conditions of Contract shall be prepared in accordance with the standard payment certificate prescribed by the Engineer and shall be provided electronically in Microsoft Excel format.

All costs incurred by the Contractor resulting from the preparation and submission of the statements shall be borne by the Contractor.

C3.4.2 Site establishment

C3.4.2.1 Services and facilities existing and/or provided by the Employer

C3.4.2.1.1 Water and power supply and other services

The Contractor shall make his own arrangements and pay all installation and consumption charges for the supply of water, electrical power and other services required.

C3.4.2.1.2 Camps and depot

The Contractor may erect his site offices and storage depot within the boundaries of the area indicated by the Engineer.

No housing is available and the Contractor shall make his own arrangements to house his employees and transport them to and from the Site. All arrangements for housing workmen shall be made in accordance with and subject to applicable regulations and requirements.

C3.4.2.2 Facilities provided by the Contractor

C3.4.2.2.1 Facilities for the Engineer

The Contractor shall provide for the use of the Engineer, maintain and service, as applicable, the following facilities as specified in SANS 1200 AB and SDAB:

a) two nameboards,
b) one furnished office,
c) conference room (furnished),
d) latrine and ablution facilities,
e) carport for 2 vehicles,
f) 1 x Smart Phone
g) photo-copying machine,
h) I7, 12GB Ram notebook computer and A3 printer / scanner,
j) survey equipment,
k) two survey assistants,
m) a site instruction book,
n) protective clothing,
o) safety equipment,
p) medical facilities,
q) nine 150 mm concrete cube moulds and a temperature-controlled cube-curing water bath,

Unless specified otherwise, on completion of the Works some of these facilities shall revert to the Contractor who shall remove them from the site excluding items f, g and h.

The term "use of the Engineer" will be deemed to include, as appropriate, use by the Engineer's staff and the Engineer's Representative and his staff.

C3.4.3 Existing services

C3.4.3.1 Treatment of existing services

C3.4.3.1.1 Continuance of operation of existing services

All existing services shall be maintained in operation, unless prior arrangements have been made with the relevant authority and written permission for an interruption of the service has been granted and adequate notice has been given to the affected residents.

C3.4.3.1.2 Continuous operation of existing works

The construction works take place around existing services. Existing works must remain in operation at all times. The Contractor shall ensure that, wherever possible, the Employer's personnel have unhindered access to, and use of, all parts of the existing works at all times, as necessary.

The Contractor's operations shall also be carried out in such a way as to minimize the formation of dust and the fouling of water in the existing works.

The Contractor shall provide sufficient notice to the Engineer when he intends to interrupt the operations of the existing works in order to effect connections with the new works. Approval for such work will be given only when the timing of the work is suitable to the Employer.

C3.4.3.1.3 Connection to existing services

All connections to the existing systems shall be undertaken in a manner and at times to be approved by the Engineer. It is anticipated that this work may have to be done at night in order to minimise inconvenience to users. No claims for additional payment will be considered in this regard**.**

C3.4.4 Health and safety

C3.4.4.1 Health and safety requirements and procedures

C3.4.4.1.1 General

In addition to Subclause 5.7 of SANS 1200 A (5.4 of SANS 1200 AA; 5.8 of SANS 1200 AD; 5.3 of SANS 1200 AH) and the Occupational Health and Safety Specification provide, the Contractor shall comply with the Occupational Health and Safety Act (Act No. 85 of 1993) (OHS Act) and in particular its Construction Regulations, 2014.

C3.4.4.1.2 Health and Safety Plan

Without limiting his obligations and liabilities in terms of the Construction Regulations, 2014 of the OHS Act, the Contractor, in his Health and Safety Plan to be submitted in terms of Clause 5.3.1 of the Project Data, shall inter alia deal with the safety provisions he will set up in respect of the aspects specified in the Specification Data and the Standard Specification.

The Health and Safety Plan shall be neatly set out in a lever-arch type file, with labelled dividers for each section

A copy of the approved Health and Safety Plan shall be kept on Site and made available upon request.

C3.4.4.1.3 Safety of general public

Open excavations and other hazardous conditions on site shall be barricaded and precautions shall be taken to protect the public from the same in terms of the OHS Act (Clause 4.3.10.2).

As the Works are on an operating water treatment works site, the Contractor shall take special precautions to prevent access to any danger areas on the Works, e.g. by temporary barricades, notices and/or fencing.

The Contractor shall direct, control, facilitate and safeguard all pedestrian traffic during construction of the Works, provide all notices, and arrange for watching and lighting in accordance with the requirements of the relevant authorities

C3.4.4.1.4 Sanitary conditions

Unhygienic habits and other behaviour that may cause contamination of any part of the Works or the surrounding areas are strictly prohibited. The Contractor shall ensure that sanitary conditions prevail throughout the Site and that all his workmen are aware of, and comply with, this rule.

C3.4.4.1.5 Protection of the public

Open excavations and other hazardous conditions on site shall be barricaded and precautions shall be taken to protect the public from the same in terms of the OHS Act.

As the Works are on an operating reservoir site, the Contractor shall take special precautions to prevent access to any danger areas on the Works, e.g. by temporary barricades, notices and/or fencing.

The Contractor shall direct, control, facilitate and safeguard all pedestrian traffic during construction of the Works, provide all notices, and arrange for watching and lighting in accordance with the requirements of the relevant authorities.

C3.4.4.1.6 Excavations

Without limiting his responsibility for the safety of his workers in any excavation, the Contractor shall ensure the safety of his workers in trenches and excavations deeper than 1,0 m. in terms of the provisions of the OHS Act. The Contractor may choose to batter excavations to a safe slope if sufficient space is available, or adequately shore the excavations.

C3.4.4.1.7 Health and safety specialist

The Contractor shall employ a health and safety specialist, with suitable and proven qualifications, either on full-time or part-time basis, for the duration of the Contract.

This specialist shall assist with the preparation of the health and safety plan required in terms of the Specification Data, shall provide on-going training for all construction staff (at least 1 hour per week whilst work on site is in progress, in the form of weekly tool-box talks), and shall assist with the upkeep of the Health and Safety Plan and associated regular inspections etc.

C3.4.6.1.8 Monthly health and safety reports

The health and safety specialist required in terms of the Specification Data, shall submit a report to the Engineer at the monthly site meetings, detailing the state of health and safety on the sites over the last month, new risk assessments added, potential new risks, new precautions taken, and summarising the results of various inspections required in terms of the health and safety plan, etc.

If this report is not submitted at each monthly site meeting, the Engineer shall impose a fine of R 1 000.00 on the Contractor, in each instance.

C3.5 HEALTH AND SAFETY

C3.5.1 HEALTH AND SAFETY REQUIREMENTS AND PROCEDURES

(a) Construction Regulations, 2014

The Contractor shall be required to comply with the Occupational Health and Safety Act, 1993: Construction Regulations, 2014. Non-compliance with these regulations, in any way whatsoever, will be adequate reason for suspending the Works.

The Contractor shall in terms of regulation 5(1) provide a comprehensive health and safety plan detailing his proposed compliance with the regulations, for approval by the Employer.

The Contractor shall at all times be responsible for full compliance with the approved plan as well as the Construction Regulations and no extension of time will be considered for delays due to non-compliance with the abovementioned plan or regulations.

A payment item is included in the Bill of Quantities to cover the Contractor's cost for compliance with the OHS Act and the abovementioned regulations.

C3.5.2 PROTECTION OF THE PUBLIC

Refer to the Occupational Health and Safety Act, 1993 and the Construction Regulations, 2014.

C3.5.3 BARRICADES AND LIGHTING

Refer to the Occupational Health and Safety Act, 1993 and the Construction Regulations, 2014.

C3.5.4 TRAFFIC CONTROL ON ROADS

Refer to the Occupational Health and Safety Act, 1993 and the Construction Regulations, 2014.

C3.5.5 MEASURES AGAINST DISEASE AND EPIDEMICS

Refer to the Occupational Health and Safety Act, 1993 and the Construction Regulations, 2014.

C3.5.6 AIDS AWARENESS

Refer to the Occupational Health and Safety Act, 1993 and the Construction Regulations, 2014.

C3.6 CONSTRUCTION

C3.6.1 Existing services

C3.6.1.1 Damage to services

The Contractor is required to carry out all of his construction activities with due caution in order to prevent damage to existing services and infrastructure. The Contractor shall repair or arrange to repair any damage to known existing services at his own cost.

The Contractor shall repair or arrange to repair any damage to known existing services at his own cost.

C3.6.1.2 Reinstatement of services and structures damaged during construction

The Contractor shall immediately inform the Engineer of any damage to existing services or structures. The Contractor shall take immediate steps to reinstate any damaged services.

C3.6.2 Disposal sites

The Contractor shall locate suitable sites, off site for the disposal of cleared vegetation, rubble, unsuitable material, excavation or surplus material. The Contractor shall obtain the Engineer's approval for the site he proposes to use.

Surplus excavation, other than described above, will be spread on site at locations indicated by the Engineer.

C3.6.3 Alterations, additions, extensions and modifications to existing works

The Contractor shall satisfy himself that the dimensional accuracy, alignment, levels and setting out of existing structures or components thereof are compatible with the proposed works (including modifications). If the Contractor finds any discrepancy, he shall immediately notify the Engineer in writing of the discrepancy before proceeding with any construction which may be affected by the discrepancy.

Should the Contractor detect any defect(s) in existing structures or works which are likely to affect the integrity or quality of work executed by himself, he shall immediately notify the Engineer in writing. The Engineer will inspect the defect(s) and, if necessary, issue an instruction regarding how the defect(s) are to be repaired. The Contractor shall then execute those repairs to existing structures or works which are prescribed by the Engineer.

C3.6.4 FEATURES REQUIRING SPECIAL ATTENTION

C3.6.4.1 Aids awareness

The Contractor is to have sufficient signage regarding HIV/AIDS, notifying the workers of the dangers, and where to obtain the counselling etc.

C3.6.4.2 Site maintenance

During progress of the work and upon completion thereof, the Site of the Works shall be kept and left in a clean and orderly condition. The Contractor shall store materials and equipment for which he is responsible in an orderly manner, and shall keep the Site free from debris and obstructions.

C3.6.4.3 Testing and quality control

C3.6.4.3.1 Contractor to engage services of an independent laboratory

Notwithstanding the requirements of the Specifications pertaining to testing and quality control, the Contractor shall engage the services of an approved independent laboratory to undertake all testing of materials, the results of which are specified in, or may reasonably be inferred from, the Contract. These results will be taken into consideration by the Engineer in deciding whether the quality of materials utilised and workmanship achieved by the Contractor comply with the requirements of the Specifications. The aforegoing shall apply irrespective of whether the specifications indicate that the said testing is to be carried out by the Engineer or by the Contractor.

The Contractor shall be responsible for arranging with the independent testing laboratory for the timeous carrying out of all such testing specified in the Contract, at not less than the frequencies and in the manner specified. The Contractor shall promptly provide the Engineer with copies of the results of all such testing carried out by the independent laboratory.

For the purposes of this clause, an "independent laboratory" shall mean a laboratory certified by the South African National Accreditation Systems (SANAS) or approved by the engineer in writing which is not under the management or control of the Contractor and in which the Contractor has no financial interest, nor which has any control or financial interest in the Contractor.

C3.6.4.3.2 Additional testing required by the Engineer

In addition to the provisions of subclause C3.6.4.3.1: Contractor to engage services of an independent laboratory, the Engineer shall be entitled at times during the Contract to require that the Contractor arrange with the independent laboratory to carry out any such tests, additional to those described in subclause C3.6.4.3.1, at such times and at such locations in the Works as the Engineer shall prescribe. The Contractor shall promptly and without delay arrange with the independent laboratory for carrying out all such additional testing as required by the Engineer, and copies of the test results shall be promptly submitted to the Engineer.

C3.6.4.3.3 Costs of testing

(a) Tests in terms of subclause C3.6.4.3.1
The costs of all testing carried out by the independent laboratory in accordance with the requirements of subclause C3.6.3.1 above shall be borne by the Contractor and shall be deemed to be included in the tendered rates and prices for the respective items of work as listed in the Bill of Quantities and which require testing in terms of the Specifications. No separate payments will be made by the Employer to the Contractor in respect of any testing carried out in terms of subclause C3.6.4.3.1

Where, as a result of the consistency of the materials varying or as a result of failure to meet the required specifications for the work, it becomes necessary to carry out additional tests (e.g. re-tests on rectified work and/or replacement materials), the costs of such additional testing shall be for the Contractor’s account.

(b) Additional tests required by the Engineer
The costs of any additional tests required by the Engineer in terms of subclause C3.6.4.3.1: Additional testing required by the Engineer, shall be reimbursed to the Contractor against substitution of the Provisional Sum allowed therefore in the Bill of Quantities; provided always that the costs of any such additional tests ordered by the Engineer, the results of which indicate that the quality of the materials utilised and/or the standard of workmanship achieved are/is not in accordance with the specifications, shall not be reimbursable to the Contractor.

C3.6.4.4 Contractor supplied equipment

The Contractor shall when required to supply any testing, measuring and/or survey equipment for the Engineer's use provide calibration certificates or verification certificates (as appropriate) for all equipment. This shall apply for both shared equipment as well as for equipment specified to be provided for the Engineer's use on site.

Calibration or verification, by certified authorities shall be subject to the Engineer's approval:
• prior to the delivery of any equipment to the Engineer and
• thereafter at intervals as prescribed for the relevant equipment but not less than every twelve (12) months

The calibration/verification certificate for each item of equipment shall be submitted to the Engineer for approval prior to its use or within seven (7) days of subsequent re-calibration/verification.
Unless otherwise provided for in the bill of quantities the cost of providing the above specified equipment.

Failure to submit certificates shall result in payment for the equipment being withheld.

C3.6.4.5 Subcontractors

All matters pertaining to subcontractors (including Nominated Subcontractors) and the work executed by them shall be dealt with directly between the Engineer and the Contractor in the context of all subcontract work being an integral part of the Works for which the Contractor is responsible.

The Engineer will not liaise directly with any subcontractors nor will he issue instructions concerning the subcontract works directly to any subcontractor.

All matters arising from the subcontract agreements shall be dealt with directly between the Contractor and the subcontractors and the Engineer will not become involved.

C3.6.4.6 Opening up and closing down of designated borrow pits

Measurement and payment for opening up and closing down designated borrow pits, including removing and stockpiling overburden and restoring the Site, shall be made under item 8.3.4 of SANS 1200 D. This item applies to all borrow material required under this Contract.

The requirements of subclause 5.2.2.2 of SANS 1200 D regarding the opening up, maintenance and closing down of borrow pits shall be adhered to.

C3.6.4.7 Monthly statements and payment certificates

The statement to be submitted by the Contractor in terms of Clause 6.10 of the Conditions of Contract shall be prepared by the Contractor at his own cost, strictly in accordance with the standard payment certificate prescribed by the Engineer, in digital electronic computer format. The Contractor shall, together with a copy of the digital electronic computer file of the statement, submit two (2) A4 size paper copies of the statement.

For the purposes of the Engineer’s payment certificate, the Contractor shall subsequently be responsible, at his own cost, for making such adjustments to his statement as may be required by the Engineer for the purposes of accurately reflecting the actual quantities and amounts which the Engineer deems to be due and payable to the Contractor in the payment certificate.

The Contractor shall, at his own cost, make the said adjustments to the statement and return it to the Engineer within three (3) normal workings days from the date on which the Engineer communicated to the Contractor the adjustments required. The Contractor shall submit to the Engineer five (5) sets of A4 size paper copies of such adjusted statement, together with a copy of the electronic digital computer file thereof.

Any delay by the Contractor in making the said adjustments and submitting to the Engineer the requisite copies of the adjusted statement for the purposes of the Engineer’s payment certificate will be added to the times allowed to the Engineer in terms of Clause 6.10.4 of the Conditions of Contract to submit the signed payment certificate to the Employer and the Contractor. Any such delay will also be added to the period in which the Employer is required to make payment to the Contractor.

C3.6.4.8 Workmanship and quality control

The onus to produce work that conforms in quality and accuracy of detail to the requirements of the Specifications and Drawings rests with the Contractor, and the Contractor shall, at his own expense, institute a quality control system and provide suitably qualified and experienced engineers, foremen, surveyors, materials technicians, other technicians and technical staff, together with all transport, instruments and equipment to ensure adequate supervision and positive control of the Works at all times.

The cost of supervision and process control, including testing carried out by the Contractor, will be deemed to be included in the rates tendered for the related items of work.

The Contractor's attention is drawn to the provisions of the various Standardized Specifications regarding the minimum frequency of testing required. The Contractor shall, at his own discretion, increase this frequency where necessary to ensure adequate control.

On completion and submission of every part of the work to the Engineer for examination and measurement, the Contractor shall furnish the Engineer with the results of the relevant tests, measurements and levels to demonstrate the achievement of compliance with the Specifications.

C3.6.5 VARIATIONS AND ADDITIONS TO SANS 1200 STANDARDIZED SPECIFICATIONS AND PARTICULAR SPECIFICATIONS

The Specification Data gives amendments and additions to the specifications that are listed in the List of Applicable Specifications. Clause headings are prefixed by the letters "SD" followed by alphabetic and numeric characters which identify the specification and main clause of the applicable specification. Sub-clauses are numbered sequentially. The clause reference to which a sub-clause refers, either to amend or to add to, is given after the sub-clause heading. Where the Specification Data sub-clause is an addition and there is no appropriate clause in the applicable specification to which to link it, no clause reference is given in the heading.

Should any requirement of the Specification Data conflict with any requirement of the specifications listed, the requirement of the Specification Data shall prevail.

1. Management

1.1 Although not bound in or issued with this document, the following Standardised Specifications for Civil Engineering Construction, as amended in the Project Specifications, form part of this document. (Notwithstanding Subclause 2.2 of SANS 1200A*, the edition specified below shall apply).

SANS 1200 A	-	1986: General
SANS 1200 AB	-	1986: Engineer's Office

1.2 The following Standard and Particular Specifications, as bound in this document, and as amended in the Project Specifications, shall apply:

Project Specific Health and Safety Specification

2. Construction

2.1 Although not bound in nor issued with this document, the following Standardised Specifications for civil Engineering Construction, as amended in the Project Specifications, form part of this document and, notwithstanding Subclause 2.2 of SANS 1200 A*, the editions specified below shall apply:

SABS 1200 A	:	GENERAL (1986)
SABS 1200 C	:	SITE CLEARANCE (1982)
SABS 1200 D	:	EARTHWORKS (1988)
SABS 1200 DB	:	EARTHWORKS (PIPE TRENCHES) (1989)
SABS 1200 DK	:	GABIONS AND PITCHING (1996)
SABS 1200 DM	:	EARTHWORKS (ROADS, SUBGRADE) (1981)
SABS 1200 LB	:	BEDDING (PIPES) (1983)
SABS 1200 LD	:	SEWERS (1982)
SABS 1200 LE	:	STORMWATER DRAINAGE (1982)
SABS 1200 ME	:	SUBBASE (1981)

2.2 The following variations and additions to the SANS 1200 Standardized and Particular Specifications referred to above apply to this Contract. The prefix SD indicates an amendment to SANS 1200. The letters and numbers following these prefixes respectively indicate the relevant Standardized Specification and clause numbers in SANS 1200 to which the variation or addition thereto applies.

Note 1 The Standard Specifications are not bound into the tender and contract documents, but are available at the Tenderer's/Contractor's expense from the South African Bureau of Standards in Pretoria, Private Bag X191, PRETORIA, 0001.

Note 2 Each of the Standard Specifications contains an appendix, which in turn lists further specifications, which are not bound into the tender and contract documents.

Note 3 Both of the Standard Specifications, as well as those specifications that are listed in the appendix to the Standard Specifications, shall apply to the Contract to the same extent as if each of these specifications had been bound into the tender/contract documents.

SDA GENERAL

SDA 1 SCOPE

REPLACE THE CONTENTS OF SUBCLAUSE 1.1, INCLUDING THE NOTES, WITH THE FOLLOWING:

"1.1 This specification covers requirements, principles and responsibilities of a general nature which are generally applicable to civil engineering construction and building works contracts, as well as the requirements for the Contractor's establishment on the Site."

SDA 2 INTERPRETATIONS

SDA 2.3 DEFINITIONS

IN THE OPENING PHRASE BETWEEN THE WORDS "specification" *AND* "the following", *INSERT THE WORDS* "the definitions given in the Conditions of Contract and".

(a) General

ADD THE FOLLOWING DEFINITIONS:

" 'General Conditions' and 'Conditions of Contract': The General Conditions of Contract specified for use with this Contract, together with the Contract Data (GCC 2015) as applicable.

'Specified': As specified in the Standardized Specifications, the Drawings or the Project Specifications. 'Specifications' shall have the corresponding meaning."

The terms “ESCOM”, “ESC” and “Electricity Supply Commission” shall mean “
“Eskom”.

The terms “GPO”, “P&T”, “Department of Posts and Telecommunications” and “Telkom” shall mean “Telkom SA Limited”.

Except for references to the Bureau itself, and to the (official) SANS mark, the term “SANS” shall mean “SANS”.

The term “Schedule of Quantities” and “Bill of Quantities” shall mean the same.

The term “Project Specification” shall mean that portion of the Scope of the Works that completes and/or amends the standardised and standard specifications.

(c) Measurement and payment

REPLACE THE DEFINITIONS FOR "Fixed charge", "Time-related charge" *AND* "Value-related charge" *WITH THE FOLLOWING:*

" 'Fixed charge': A charge that is not subject to adjustment on account of variations in the value of the Contract Price or the time allowed in the Contract for the completion of the work.

'Time-related charge': A charge, the amount of which varies in accordance with the Time for Completion of the Works, adjusted in accordance with the provisions of the Contract.

'Value-related charge': A charge, the amount of which varies pro rata with the final value of the measured work executed and valued in accordance with the provisions of the Contract.' "

SDA 2.4 ABBREVIATIONS

(a) Abbreviations relating to standard documents

ADD THE FOLLOWING ABBREVIATION:

"CKS: SABS Co-ordinating Specification."

(b) Other abbreviations

ADD THE FOLLOWING ABBREVIATIONS:

“MAMDD: Modified ASSHTO maximum dry density”.

“TMH 1: Technical Methods for Highways 1”.

SDA2-8 Items in Bill of Quantities - Principle (Subclause 2.8.1)

In the fourth line of Subclause 2.8.1, after the word "specification", add: "or in the measurement and payment clause of the standard specification, particular specification or Specification Data".

Add the following paragraphs:

"The Contractor shall be deemed to have inspected and examined the Site and its surroundings and information available in connection therewith and to have satisfied himself before submitting his tender as to

(a) the form and nature of the Site and its surroundings, including subsurface conditions,

(b) the hydrological and climatic conditions,

(c) the extent and nature of work and materials necessary for the execution and completion of the Works,

(d) the means of access to the Site and the accommodation he may require

and, in general, shall be deemed to have obtained all information as to risks, contingencies and all other circumstances which may influence or affect his tender.

The Contractor shall be deemed to have based his tender on the technical data given in the Documents and, if in the performance of the Contract any circumstances shall differ from the said technical data, which difference causes delay or additional Cost, the Contractor shall be entitled to make a claim in accordance with Clause 10.1.1.

The Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the Works and of the rates and prices stated in the priced Bill of Quantities and the Schedule of Rates and Prices (if any) or in the specification, which rates and prices shall (except in so far as otherwise provided in the Contract) collectively cover full payment for the discharge of all his obligations under the Contract and all matters and things necessary for the proper completion of the Works."

SDA 3 MATERIALS

SDA 3.1 QUALITY

ADD THE FOLLOWING AT THE END OF SUBCLAUSE 3.1:

"All manufactured materials supplied shall be new materials unless the contrary is specified. All materials specified to be in accordance with SABS Specifications shall bear the SABS mark, where such a mark is available for the type of product."

SDA 4 PLANT

SDA 4.1 SILENCING OF PLANT

REPLACE THE CONTENTS OF SUBCLAUSE 4.1 WITH THE FOLLOWING:

"The Contractor's attention is drawn to the applicable regulations pertaining to noise and hearing conservation, framed under the Occupational Health and Safety Act, 1993 (Act No 85 of 1993) as amended.

The Contractor shall at all times and at his own cost, be responsible for implementing all necessary steps to ensure full compliance with such regulations, including but not restricted to the provision and use of suitable and effective silencing devices for pneumatic tools and other plant which would otherwise cause a noise level in excess of that specified in the said regulations.

Where appropriate, the Contractor shall further, by means of temporary barriers, effectively isolate the source of such noise in order to comply with the said regulations."

SDA4-2 CONTRACTOR'S OFFICES STORES AND SERVICES

ADD THE FOLLOWING ATE THE END OF SUBCLAUSE 4.2:

The latrine services required by the General Conditions of Contract and Clause 28 of the Construction Regulations, shall be of the chemical type and shall be readily accessible to workers at all areas of the site.

The Contractor shall make all the necessary arrangements with the relevant local authority for the disposal of the contents of the toilets on a regular basis.

The suitable first aid services required in terms of Subclause 4.2 of SANS 1200 A shall include, inter alia, a First Aid cabinet fully equipped and maintained with at least the minimum contents as listed in the Annexure (Regulation 3) to the General Safety Regulations of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), to deal with accidents and ailments which are likely to occur during the construction period.

The Contractor shall provide personal safety equipment and facilities as required by Regulation 2 of the General Safety Regulations of the Occupational Health and Safety Act, 1993 (Act 85 of 1993).

SDA 5 CONSTRUCTION

SDA5-1 Survey

SDA5-1.1 Setting out of the Works. (Subclause 5.1.1)

Before commencing any construction, the Contractor shall check the relative positions and levels of all reference pegs and bench marks and inform the Engineer of any discrepancy.

Add to Subclause 5.1.1

"The Contractor shall be responsible for the true and proper setting out of the Works and for the correctness of the position, levels, dimensions and alignment of all parts of the Works and for the provisions of all necessary instruments, appliances and labour in connection therewith.

The Contractor shall carefully protect and preserve all benchmarks, sight-rails, pegs and other things used in setting out the Works.

The checking of any setting-out or of any line or level by the Engineer shall not relieve the Contractor of his responsibility for the correctness thereof.

If at any time during the progress of the Works, any error shall appear or arise in the position, levels, dimensions or alignment of any part of the Works, the Contractor, on being required to do so by the Engineer, shall at his own expense rectify such error to the satisfaction of the Engineer, but if such error is based on incorrect data supplied in writing by the Engineer or if there is any delay in providing the

particulars required, the Contractor shall, in respect of that delay and the Cost of such rectification, be entitled to make a claim in accordance with Clause 10.1.1."

The Contractor shall advise the Engineer of any conflict between the position of any part of the Works and an existing feature.

SDA 5.2 WATCHING, BARRICADING, LIGHTING AND TRAFFIC CROSSINGS.

ADD THE FOLLOWING AFTER THE SECOND SENTENCE OF SUBCLAUSE 5.2:

" The Contractor shall, in connection with the Works, provide and maintain all signs, signboards, lights, barriers, barricades, fencing and watching when and where:

a) specified in or reasonably to be inferred from the Contract, or

b) required by any competent statutory or other authority, or

c) required by the Engineer for the protection of the Works or for the safety or convenience of the public or others;

provided that, if the Engineer shall instruct the Contractor to provide any sign, signboard, light, barrier, barricade, fencing or watching not included in paragraphs (a), (b) or (c), such requirement shall constitute a variation by the Engineer in terms of Clause 6.4 of the General Conditions of Contract".

All temporary signs shall be of the type and size required for rural roads, as applicable, as specified in the "Southern African Development Community Road Traffic Signs Manual" and Chapter 13, [Roadworks Signing] of the South African Road Traffic Signs Manual".

Unless the closing of streets, accesses and thoroughfares has been properly arranged, the Contractor shall accommodate and provide for through traffic, traffic at crossings and vehicular access to houses and buildings at all times. If necessary, safe ramps to mount road kerbs shall be provided where traffic is to be diverted.

SDA 5.3 PROTECTION OF EXISTING STRUCTURES

REPLACE "Machinery and Occupational Safety Act, 1983 (Act No 6 of 1983)" *WITH* "Occupational Health and Safety Act, 1993 (Act No 85 of 1993), as amended," *AND INSERT THE FOLLOWING AFTER* "(Act No. 27 of 1956)": "as amended".

SDA 5.4 PROTECTION OF OVERHEAD AND UNDERGROUND SERVICES

REPLACE THE HEADING AND THE CONTENTS OF SUBCLAUSE 5.4 WITH THE FOLLOWING:

"SDA 5.4 LOCATION AND PROTECTION OF EXISTING SERVICES

SDA 5.4.1 Location of existing services

Before commencing with any work in an area, the Contractor shall ascertain the presence and actual position of all services which can reasonably be expected by an experienced and competent contractor to be present on, under, over or within the Site.

Without in any way limiting his liability in terms of the Conditions of Contract in relation to damage to property and interference with services, the Contractor shall, in collaboration with the Engineer, obtain the most up-to-date plans as are available, showing the positions of services existing in the area where he intends to work. Neither the Employer nor the Engineer offers any warranty as to the accuracy or completeness of such plans and because services can often not be reliably located from plans, the Contractor shall ascertain the actual location of services depicted on such plans by means of careful inspection of the Site.

Thereafter, the Contractor shall, by the use of appropriate methodologies, carefully expose the services at such positions as are agreed to by the Engineer, for the purposes of verifying the exact location and position

of the services. Where the exposure of existing services involves excavation to expose underground services, the further requirements of subclauses 4.4 and 5.1.2.2 of SABS 1200 D (as amended) shall apply.

The aforesaid procedure shall also be followed in respect of services not shown on the plans but which may reasonably be anticipated by an experienced Contractor to be present or potentially present on the site.

All services, the positions of which have been determined as aforesaid at the critical points, shall henceforth be designated as 'known services' and their positions shall be indicated by the Contractor on a separate set of drawings, a copy of which shall be furnished to the Engineer without delay.

As soon as any service which has not been identified and located as described above is encountered on, under, over or within the site, it shall henceforth be deemed to be a known service and the aforesaid provisions pertaining to locating, verifying and recording its position on the balance of the site shall apply. The Contractor shall notify the Engineer immediately when any such service is encountered or discovered on the Site.

Whilst he is in possession of the Site, the Contractor shall be liable for all loss of or damage as may occur to

(a) known services, anywhere along the entire lengths of their routes, as may reasonably be deduced from the actual locations at which their positions were verified as aforesaid, due cognizance being taken of such deviations in line and level which may reasonably be anticipated, and

(b) any other service which ought reasonably to have been a known service in accordance with the provisions of this clause.

The Contractor shall also be liable for consequential damage in regard to (a) and (b), whether caused directly by the Contractor's operations or by the lack of proper protection.

No separate payment will be made to the Contractor in respect of his costs of providing, holding available on the Site and utilising the said detecting and testing equipment, nor for any costs incurred in preparing and submitting to the Engineer the Drawings as aforesaid. These costs shall be deemed included in the Contractor's other tendered rates and prices included in the Contract.

Payment to the Contractor in respect of exposing services at the positions agreed by the Engineer and as described above will be made under the payment items (if any) as may be provided for in the respective sections of the specifications pertaining to the type of work involved.

SDA 5.4.2 Protection during construction

The Contractor shall take all reasonable precautions and arrange its operations in such a manner as to prevent damage occurring to all known services during the period which the Contractor has occupation and/or possession of the Site.

Services left exposed shall be suitably protected from damage and in such a manner as will eliminate any danger arising therefrom to the public and/or workmen, all in accordance with the requirements of the prevailing legislation and related regulations.

Unless otherwise instructed by the Engineer, no services shall be left exposed after its exact position has been determined and all excavations carried out for the purpose of exposing underground services shall be promptly backfilled and compacted. In roadways, the requirements of subclause 5.9 of SABS 1200 DB should be observed. In other areas compaction is to be to 90% modified AASHTO density.

SDA 5.4.3 Alterations and repairs to existing services

Unless the contrary is clearly specified in the Contract or ordered by the Engineer, the Contractor shall not carry out alterations to existing services. When any such alterations become necessary, the Contractor shall promptly inform the Engineer, who will either make arrangements for such work to be executed by the owner of the service, or instruct the Contractor to make such arrangements himself.

Should damage occur to any existing services, the Contractor shall immediately inform the Engineer, or when this is not possible, the relevant authority, and obtain instructions as to who should carry out repairs. In urgent cases, the Contractor shall take appropriate steps to minimise damage to and interruption of the service. No repairs of telecommunication cables or electric power lines and cables shall be attempted by the Contractor.

Before the commencement of any excavation the Contractor shall confirm the name and telephone number of the relevant officials directly concerned with the known or suspected services, shall acquaint himself with the position of the control points of the services and shall have readily available the equipment necessary to shut-off and isolate any such service. The Contractor shall liaise with the relevant authorities or controlling bodies for the necessary temporary closure of any services during construction.

SDA 5.7 SAFETY

REPLACE THE CONTENTS OF SUBCLAUSE 5.7 WITH THE FOLLOWING:

"Pursuant to the provisions of the Conditions of Contract, and without in any way limiting the Contractor's obligations thereunder, the Contractor shall at his own expense (except only where specific provision (if any) is made in the Contract for the reimbursement to the Contractor in respect of particular items), provide the following:

(a) Provide to its Employees on the site of the works, all safety materials, clothing and equipment necessary to ensure full compliance with the provisions of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993) as amended (hereinafter referred to as the Act) at all times, and shall institute appropriate and effective measures to ensure the proper usage of such safety materials, clothing and equipment at all times;

(b) Provide, install and maintain all barricades, safety signage and other measures to ensure the safety of workmen and all persons in, on and around the site, as well as the general public;

(c) Implement on the site of the works, such procedures and systems and keep all records as may be required to ensure compliance with the requirements of the Act at all times;

(d) Implement all necessary measures so as to ensure compliance with the Act by all subcontractors engaged by the Contractor and their employees engaged on the works;

(e) Full compliance with all other requirements pertaining to safety as may be specified in the Contract.

The Employer and the Engineer shall be entitled, although not obliged, to make such inspections on the site as they shall deem appropriate, for the purpose of verifying the Contractor's compliance with the requirements of the Act. For this purpose, the Contractor shall grant full access to the site of all parts of the site and shall co-operate fully in such inspections and shall make available for inspection all such documents and records as the Employer's and/or Engineer's representative may reasonably require.

Where any such investigations reveal, or where it comes to the Engineer's attention that the Contractor is in any way in breach of the requirements of the Act or is failing to comply with the provisions of this clause, the Engineer shall, in accordance with the provisions of Clause 5.11.2 (GCC 2015) of the Conditions of Contract, be entitled to suspend progress on the works or any part thereof until such time as the Contractor has demonstrated to the satisfaction of the Engineer, that such breach has been rectified.

The Contractor shall have no grounds for a claim against the Employer for extension of time and/or additional costs if the progress on the works or any part thereof is suspended by the Engineer in terms of this clause, and the Contractor shall remain fully liable in respect of the payment of penalties for late

completion in accordance with the provisions of Clause 5.13.1 (GCC 2015) of the Conditions of Contract should the Contractor fail to complete the Works on or before the specified due completion date in consequence of the suspension.

Persistent and repeated breach by the Contractor of the requirements of the Act and/or this clause shall constitute grounds for the Engineer to act in terms of Clause 9.2.1.1 (GCC 2015) of the Conditions of Contract and for the Employer to cancel the Contract in accordance with the further provisions of the said Clause 9.2.1 (GCC 2015)."

SDA 6 TOLERANCES

ADD THE FOLLOWING SUBCLAUSE TO CLAUSE 6:

"SDA 6.4 USE OF TOLERANCES

No guarantee is given that the full specified tolerances will be available independently of each other, and the Contractor is cautioned that the liberal or full use of any one or more of the tolerances may deprive him of the full or any use of tolerances relating to other aspects of the work.

Except where the contrary is specified, or when clearly not applicable, all quantities for measurement and payment shall be determined from the 'authorised' dimensions. These are specified dimensions or those shown on the Drawings or, if changed, as finally prescribed by the Engineer, without any allowance for the specified tolerances. Except if otherwise specified, all measurements for determining quantities for payment will be based on the 'authorised' dimensions.

If the work is constructed in accordance with the 'authorised' dimensions plus or minus the tolerances allowed, the calculation of quantities will be based on the 'authorised' dimensions, regardless of the actual dimensions to which the work has been constructed.

When the work is not constructed in accordance with the 'authorised' dimensions plus or minus the tolerances allowed, the Engineer may nevertheless, at his sole discretion, accept the work for payment. In such cases no payment shall be made for quantities of work or material in excess of those calculated for the 'authorised' dimensions, and where the actual dimensions are less than the 'authorised' dimensions minus the tolerance allowed, quantities for payment shall be calculated based on the actual dimensions as constructed."

SDA 7 TESTING

SDA 7.1 PRINCIPLES

SDA 7.2 APPROVED LABORATORIES

REPLACE THE CONTENTS OF SUBCLAUSE 7.2 WITH THE FOLLOWING:

"Unless otherwise specified in the relevant specification or elsewhere in the Project Specification, the following shall be deemed to be approved laboratories in which design work, or testing required in terms of a specification for the purposes of acceptance by the Engineer of the quality of materials used and/or workmanship achieved, may be carried out:

(a) Any testing laboratory certified by the South African National Accreditation Systems (SANAS) in respect of the nature and type of testing to be undertaken for the purposes of the Contract;

(b) Any testing laboratory owned, managed or operated by the Employer or the Engineer;

(c) Any testing laboratory established and operated on the Site by or on behalf of the Employer or the Engineer.

(d) Any other laboratory that the Engineer approves in his absolute discretion."

SDA 8 MEASUREMENT AND PAYMENT

SDA 8.1 MEASUREMENT

SDA 8.1.1 Method of measurement, all sections of the Schedule

IN THE SECOND LINE OF SUBCLAUSE 8.1.1, AFTER THE WORDS" standardized specification or in" *ADD " BETWEEN THE WORDS* "specification" *AND* "the following", *INSERT THE WORDS* " the measurement and payment clause of the standard specification, particular specification or".

DELETE THE WORDS "and South West Africa".

SDA 8.1.2 Preliminary and General item or section

SDA 8.1.2.1 Contents

REPLACE THE LAST SENTENCE OF SUBCLAUSE 8.1.2.1(b) WITH THE FOLLOWING:

"Separate items will be scheduled to cover the fixed, value-related and time-related components of the Contractor's preliminary and general costs."

SDA 8.1.2.2 Tendered sums

REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

"Except only where specific provision is made in the Specifications and/or the Schedule of Quantities for separate compensation for any of these items, the Contractor's tendered sums under items SDA 8.3 and SDA 8.4 shall collectively cover all charges for:

- risks, costs and obligations in terms of the Conditions of Contract and of this standardized specification;
- head-office and site overheads and supervision;
- profit and financing costs;
- expenses of a general nature not specifically related to any item or items of the permanent or temporary work;
- providing such facilities on site as may be required by the Contractor for the proper performance of the Contract and for its personnel, including, but without limitation, providing offices, storage facilities, workshops, ablutions, services such as water, electricity, sewage and rubbish disposal, access roads and all other facilities required, as well as for the maintenance and removal on completion of the works of these facilities and cleaning-up of the site of the Contractor's establishment and reinstatement to not less than its original condition;
- providing the facilities for the Engineer and his staff as specified in the Contract and their removal from the site on completion of the Contract;
- erection, maintenance and removal of temporary fencing and barricades;
- dealing with water (Subclause 5.5);
- access to works (Subclause 5.8); and
- providing and maintaining the fire-fighting equipment, as well as training the work teams in their use."

SDA 8.2 PAYMENT

SDA 8.2.1 Fixed-charge and value-related items

REPLACE THE CONTENTS OF SUBCLAUSE 8.2.1 WITH THE FOLLOWING:

SDA 8.2.1.1 Fixed-charge items

"Payment of fixed charges in respect of item 8.3.1 will be made as follows:

(a) EIGHTY PER CENT (80%) of the sum tendered will be paid when the facilities have been provided and approved;

(b) The remaining TWENTY PER CENT (20%) will be paid when the works have been completed, the facilities have been removed and the site of the Contractor's establishment has been cleared and cleaned to the satisfaction of the Engineer.

No adjustment will be made to the sum tendered in respect of item 8.3.1 should the value of the works finally executed or the time for completion vary in any way from that specified in the tender.

SDA 8.2.1.2 Value-related items

Payment for the sum tendered under item 8.3.2 will be made in three separate instalments as follows:

(a) The first instalment, which is 40% of the sum, will be paid when the Contractor has fulfilled all his obligations to date under this specification, the General Conditions of Contract and the Contract Data (GCC 2015), and when the value of work certified for payment, excluding materials on site and payments for preliminary and general items, is equal to not less than 5% of the total value of the work listed in the Schedule of Quantities.

(b) The second instalment, which is 40% of the sum, will be made when the amount certified for payment, including retention moneys but excluding this second instalment, exceeds 50% of the tender sum.

(c) The final payment, which is 20% of the sum, will be made when the works have been certified as completed and the Contractor has fulfilled all his obligations to date under this Specification, the General Conditions of Contract and the Contract Data (GCC 2015).

Should the value of the measured work finally completed be more or less than the tender sum, the sum tendered under item 8.3.2 will be adjusted up or down in accordance with the provisions of Clause 6.11.1 (GCC 2015) of the Conditions of Contract amended to clause 6.11 of the variation of the conditions of contract, and this adjustment will be applied to the third instalment."

SDA 8.2.2 Time-related items

REPLACE THE CONTENTS OF SUBCLAUSE 8.2.2 WITH THE FOLLOWING:

"Subject to the provisions of subclauses 8.2.4, payment under item 8.4.1 (time-related item) will be made monthly in equal amounts, calculated by dividing the sum tendered for the item by the tendered Contract period in months, provided always that the total of the monthly amounts so paid for the item is not out of proportion to the value of the progress of the Works as a whole."

Notwithstanding the stipulation of Subclause 8.2.2, an approved extension of time will only entitle the Contractor to payment in terms of clause 5.12.3 of GCC 2015.

SDA 8.3 SCHEDULED FIXED-CHARGE AND VALUE-RELATED ITEMS

REPLACE THE CONTENTS OF SUBCLAUSE 8.3.1 WITH THE FOLLOWING:

"SDA 8.3.1 Fixed preliminary and general charges Unit: sum

The sums tendered shall include full compensation for all fixed-charge preliminary and general charges as described in subclause SDA 8.1.2.2. Payment will be made as described in subclause SDA 8.2.1.1.

Payment for "operation and maintenance of facilities for the Engineer", in accordance with Subclause 8.4.2.1 will not be authorized by the Engineer until the name board has been erected and approved.

SDA 8.3.2 Value-related preliminary and general charges Unit: sum

The sums tendered shall include full compensation for all value-related preliminary and general charges as described in subclause SDA 8.1.2.2. Payment will be made as described in subclause SDA 8.2.1.2."

SDA 8.4 SCHEDULED TIME-RELATED ITEMS

REPLACE THE CONTENTS OF SUBCLAUSE 8.4 WITH THE FOLLOWING:

"SDA 8.4.1 Time-related preliminary and general charges Unit: sum

The sum tendered shall include full compensation for all time-related preliminary and general charges as described in subclause SDA 8.1.2.2. Payment will be made as described in subclause SDA 8.2.2."

SDA 8.5 SUMS STATED PROVISIONALLY BY THE ENGINEER

REPLACE THE CONTENTS OF SUBCLAUSE 8.5 WITH THE FOLLOWING:

"SDA 8.5.1 Works executed by the nominated subcontractor

(a) Description of item to which Prime Cost Sum applies Unit: Prov Sum

(b) Charge required by Contractor on subitem (a) above Unit: %

Subitems (a) and (b) will be provided in the Schedule of Quantities for each different Subcontract included in the Contract.

The Contractor shall be reimbursed under subitem (a), in substitution of the respective Provisional Sums (if any) allowed in the Schedule of Quantities, the amounts actually paid or payable by the Contractor to the respective Nominated Subcontractors, in accordance with the provisions of Clause 6.6 of the Conditions of Contract.

The Contractor shall be paid under subitem (b), either:

(a) where the unit of measurement for subitem (b) was specified as being a percentage, the respective percentage, as stated by the Contractor in is tender, of the amount certified by the Engineer for payment under the related subitem (a), all in accordance with the provisions of Clause 6.6.1.2.1 of the Conditions of Contract, or

(b) where the unit of measurement for subitem (b) was specified as being a lump sum, an amount which is in the same proportion to the amount certified for payment under subitem (a) and the tendered lump sum is to the amount of the Provisional Sum stated under subitem (a) in accordance with the provisions of Clause 6.6.1.2.2.

The percentage or sum (as applicable) paid under subitem (b) as aforesaid, shall be deemed to include for full and final compensation to the Contractor for all costs as may be incurred and all charges and profits associated with the engagement, supervision, administration and management of the Nominated Subcontractor required of him in fulfilling its obligations under the Contract as the Principal Contractor."

SDA 8.6 PRIME COST ITEMS

REPLACE SUBCLAUSE 8.6 WITH THE FOLLOWING:

"SDA 8.6 PRIME COST SUMS

(a) Description of item to which Prime Cost Sum applies Unit: PC Sum

(b) Charge required by Contractor on subitem (a) above Unit: %

Subitems (a) and (b) will be provided in the Schedule of Quantities for each different item to which a Prime Cost Sum applies.

The Contractor shall be reimbursed under subitem(s) (a) in substitution of the respective Prime Cost Sums included in the Contract, the actual price(s) paid or payable by him in respect of the goods, materials or services supplied, but excluding any charges for the Contractor’s labour, profit, carriage, establishment or other charges related to such goods, services or materials.

The Contractor shall be paid under subitem (b), the respective percentage, as stated by the Contractor in his tender, of the amount certified by the Engineer for payment under the related subitem (a). The percentages tendered by the Contractor for each respective subitem (b) included in the Schedule of Quantities shall be deemed to be in full and final compensation to the Contractor in respect of any charge by the Contractor for labour, carriage profit, establishment and for any other charges related to the goods, services or materials supplied under the related subitem (a).

If the Contractor shall have omitted within his tender to insert a tendered percentage under subitem (b), or tendered a zero percentage, the Contractor's tendered rate for subitem (b) shall be deemed to be zero and the Contractor shall not be entitled to any payment under subitem (b).

Note in connection with additional tests required by the Engineer:

When a PC sum is included in the Schedule of Quantities for additional tests required by the Engineer, the Contractor shall be responsible for both the cost of normal testing as described in subclause SDA 8.1.2.2 of the Project Specifications and for the cost of any additional test that indicates that the specifications have not been complied with."

SDA 8.7 DAYWORK

REPLACE THE CONTENTS OF SUBCLAUSE 8.7 WITH THE FOLLOWING:

"Measurement and payment shall be in accordance with the provisions of Clause 6.5.1.1 (GCC 2015) of the Conditions of Contract."

ADD THE FOLLOWING ITEMS:

"SDA 8.9 COMPLIANCE WITH OHS ACT AND REGULATIONS (INCLUDING THE CONSTRUCTION REGULATIONS 2014) Unit: sum

The tendered sum shall include full compensation to the Contractor for compliance with all the requirements of the OHS Act and Regulations (including the Construction Regulations 2014) at all times for the full duration of the Contract, as described in C3.6.1 (for CIDB document format). The successful tenderer shall provide the Engineer with a complete breakdown of this tendered sum.

This sum will be paid to the Contractor in equal monthly amounts subject to proper/substantial compliance."

"SDA 8.10 COMMUNITY LIASON AND COMMUNITY RELATIONS Unit: month

a) A total amount of R 5 500.00 is to be paid to the community liaison officer for the duration of the construction of this project.

Add this new clause:

"4.23 Community participation"

Community participation consists of engagement of Project Steering Committees (PSC).

A PSC will be established for the project, by the Ward Councillor.

The functions of the PSC will be to:

- Assist in monitoring the project.
- Ensure that the community provide assistance to the contractor to ensure that he can execute the contract in accordance with the specifications and within time.
- Encourage the community to participate in the Labour Intensive construction.
- Identify skills, skilled personnel and suppliers in the towns.

The PSC will not have the power to:

- Give any instructions to the contractor, except through the engineer.
- Become involved in the daily operations of the contractor or interfere with the contract works.

b) A monthly meeting will be held with the PSC to discuss relevant matters. The site agent and resident engineer will attend the meetings. The contractor will have to report on progress, deviations from the programme, financial matters community related aspects, general problems and co-operation at the meeting. The PSC members will not receive any remuneration for attending, and they must provide their own transport."

c) Payment will be R250.00 per member.

This sum will be paid to the Contractor in equal monthly amounts subject to proper/substantial compliance."

SDAB ENGINEER'S OFFICE

SDAB 3 MATERIALS

SDAB 3.1 NAMEBOARDS

REPLACE THE FIRST SENTENCE OF SUBCLAUSE 3.1 OF SABS 1200 AB WITH THE FOLLOWING:

"The Contractor shall supply and erect at locations approved by the Engineer, the number of contract nameboards specified in C3.4.2.2.1 Facilities for the Engineer, which, unless otherwise specified in the Contract, shall comply with the recommendations for the standard board of the South African Association of Consulting Engineers with regard to size, painting, decorating and detail, and the requirements described hereunder. These name boards should be kept in good condition through the duration of the contract"

SDAB 3.2 OFFICE BUILDING(S)

REPLACE THE WORDS "as scheduled" *IN PARENTHESIS IN THE FIRST LINE OF SUBCLAUSE 3.2 OF SABS 1200 AB WITH "*as specified in C3.4.2.2.1 Facilities for the Engineer, *AND REPLACE SUBCLAUSE 3.2(j) OF SABS 1200 AB WITH THE FOLLOWING:*

"(j) a heater and fan or air-conditioning unit capable of both heating in summer and cooling in winter."

SDAB 4 PLANT

ADD THE FOLLOWING NEW SUBCLAUSES TO CLAUSE 4 OF SABS 1200 AB:

“SDAB 4.2 SURVEY EQUIPMENT

The Contractor shall provide the following survey equipment for use by the Engineer.

a) 1 x engineer’s automatic level with tripod,
b) 1 x level staff with staff bubble,
c) 3 x ranging rods,
d) 1 x builder’s spirit level of length 900 mm,
e) 1 x steel tape of length 30 m,
f) 1 x pocket tape of length 5 m.

All survey equipment provided by the Contractor shall be in good condition, properly calibrated and fit for the purpose.

In addition to survey equipment provided by the Contractor for the exclusive use of the Engineer and his staff, the Contractor shall make available for use by the Engineer, the survey equipment listed above at all times when such is reasonably required by the Engineer and his staff for the purposes of the Contract.”

SDAB 5 CONSTRUCTION

ADD THE FOLLOWING NEW SUBCLAUSE TO CLAUSE 5 OF SABS 1200 AB:

“SDAB 5.6 SURVEY EQUIPMENT

All survey equipment provided by the Contractor shall be kept fully serviceable at all times by the Contractor. The Contractor shall have any defective equipment repaired or replaced at his own cost within 12 hours after notification by the Engineer's staff.

Where required by the Engineer, the Contractor shall, at his own cost, promptly arrange for the recalibration of survey equipment provided."

SDC SITE CLEARANCE

SDC 3 MATERIALS

SDC 3.1 DISPOSAL OF MATERIAL

ADD THE FOLLOWING:

"The Contractor shall obtain his own dumping sites for the disposal of material and all transport costs shall be included in the rates tendered for site clearance."

No overhaul will be paid for any spoil material and the Contractor shall allow for all haulage costs in his tendered rates.

SDC 5 CONSTRUCTION

SDC 5.2 CUTTING OF TREES

SDC 5.2.3 Preservation of trees

SDC 5.2.3.2 Individual trees

REPLACE THE LAST SENTENCE WITH THE FOLLOWING:

"An amount of R1 500,00 will be deducted from moneys due to the Contractor as a penalty for every tree that is damaged or removed unnecessarily."

SDC 5.5 RECLEARING OF VEGETATION

ADD THE FOLLOWING:

"When areas have to be recleared on the written instructions of the Engineer, such reclearing shall be carried out at the Contractor's own cost and the Contractor is therefore advised not to clear the areas too soon.

SDC 8 MEASUREMENT AND PAYMENT

SDC 8.2 PAYMENT

SDC 8.2.1 Clear and grub

REPLACE THE FIRST LINE WITH THE FOLLOWING:

"The area designated by the Engineer to be cleared and grubbed will be measured in square metre to the nearest square metre"

ADD THE FOLLOWING:

“The rate tendered for clearing and grubbing shall cover the cost of disposal and the total haulage cost of the material off the site as directed in SDC 3.1 and the protection of erf pegs”

ADD THE FOLLOWING ITEMS IN SUBCLAUSE 8.2:

"SDC 8.2.11 Take down and re-erect existing fences Unit: m

The rate shall cover the cost of taking down the fences, coiling wire, sorting, stacking and guarding all materials, the cost of loading, transporting and off-loading such materials, the cost of re-erecting the fence in its original position using the dismantled material, the cost of temporary bracing of the fencing sections not taken down and the cost of appurtenant materials that may be required to restore the fence to its original condition before dismantling.

SDD EARTHWORKS

SDD 2 INTERPRETATIONS

SDD 2.1 SUPPORTING SPECIFICATIONS

REPLACE SUBCLAUSE 2.1.2 *WITH THE FOLLOWING:*

"SDD 2.1.2 Any of the other SABS 1200 specifications may form part of the Contract documents."

SDD 2.3 DEFINITIONS

REPLACE THE WORD AND THE DEFINITION FOR "Borrow" *WITH THE FOLLOWING:*

"**Borrow material**: Material, other than material obtained from excavations required for the works, obtained from sources such as borrow pits or the authorised widening of excavations. 'Borrow' shall have a corresponding meaning."

REPLACE THE DEFINITION FOR "Specified density" *WITH THE FOLLOWING:*

"**Specified density**: The specified dry density expressed as a percentage of modified AASHTO dry density."

REPLACE THE DEFINITION FOR "Stockpile" *WITH THE FOLLOWING:*

"**Stockpile** (verb): The process of selecting and, when necessary, loading, transporting and off-loading material in a designated area for later use for a specific purpose"

ADD THE FOLLOWING DEFINITIONS:

"**Commercial source**: A source of material provided by the Contractor, not the Employer, and including any borrow pit, provided by the Contractor

Fill: An embankment or terrace constructed of material obtained from excavations or borrow pits. In roads it includes the earthworks up to the underside of the selected subgrade level.

Fill (material): Material used for the construction of an embankment or terrace

Roadbed: The natural in situ material on which the fill or, in the absence of fill, the pavement layers are constructed"

Bulk Excavation: “Excavation to the underside of the lowest construction layer in roadways will be considered as bulk excavation "

SDD 3 MATERIALS

SDD 3.1 CLASSIFICATION FOR EXCAVATION PURPOSES

SDD 3.1.1 Method of classifying

ADD THE FOLLOWING:

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

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

SDD 3.2.3 Material suitable for backfill or fill against structures

REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

"Material used for backfill behind structures shall generally be the material excavated, subject to the following conditions:

(a) The material shall not contain an excessive number of stones retained on a 50 mm sieve;

(b) The material shall not contain large clay lumps that do not break up under the action of the compaction equipment; and

(c) The liquid limit of the material shall not exceed 40, neither shall the PI exceed 18."

SDD 3.3 SELECTION

ADD THE FOLLOWING SUBCLAUSE:

"SDD 3.3.3 Selection in borrow pits and excavations

Approval of a borrow area for a certain purpose does not necessarily mean that all the material in that area is suitable for the specified purpose. What it does mean is that the borrow area contains some suitable material. The onus shall rest on the Contractor to ensure that only material that is indeed suitable is removed and used for the specified purpose.

When the Contractor has to select excavated material for a specific purpose, the above provisions relating to borrow areas shall apply *mutatis mutandis* to excavations.

The Contractor shall not waste or contaminate material that has been selected for a specific purpose."

SDD 4 PLANT

SDD 4.4 DETECTORS

REPLACE THE CONTENTS OF SUBCLAUSE 4.4 WITH THE FOLLOWING:

"The Contractor shall, for the purposes of detecting and locating underground services in accordance with the provisions of subclause 5.4 of SABS 1200 A and subclause 5.1.2 of SABS 1200 D, at his own cost, provide and use detecting equipment which is suitable for the detection of underground cables and pipes."

SDD 5 CONSTRUCTION

SDD 5.1 PRECAUTIONS

SDD 5.1.1 Safety

SDD 5.1.1.1 Barricading and lighting

REPLACE "Machinery and Occupational Safety Act, 1983 (Act 6 of 1983)" *WITH* “Occupational Health and Safety Act, 1993 (Act 85 of 1993)".

SDD 5.1.1.2 Safeguarding of excavations

REPLACE "Machinery and Occupational Safety Act" *WITH* "Occupational Health and Safety Act, 1993 (Act 85 of 1993)".

SDD 5.1.1.3 Explosives

REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

"The use of explosives is prohibited on this project."

SDD 5.1.2 Existing services

SDD 5.1.2.2 Detection, location and exposure

REPLACE THE CONTENTS OF SUBCLAUSE 5.1.2.2 WITH THE FOLLOWING:

"The exposure by the Contractor of underground services, as required in terms of subclause 5.4 of SABS 1200 A (as amended) shall be carried out by careful hand excavation at such positions and to such dimensions as are agreed to by the Engineer.

Unless otherwise instructed or agreed by the Engineer, no service shall be left exposed after its exact position has been determined and all excavations carried out for the purposes of exposing underground services shall be promptly backfilled and compacted to the following densities:

(a) In roadways: 90% Mod AASHTO density; and

(b) In all other areas: 93% Mod AASHTO density.

Where hand excavations to expose underground services have to be carried out in roadways, the Contractor shall reinstate the road layerworks in accordance with the provisions of subclause 5.9 of SABS 1200 DB.

Payment in respect of exposing the services by means of hand excavation as described above, will be made in accordance with subclause SDD 8.3.8.1.

Payment in respect of reinstating layerworks in roadways will be made in accordance with subclause 8.3.6.1 of SABS 1200 DB (as amended)."

SDD 5.1.2.3 Protection of cables

REPLACE SUBCLAUSE 5.1.2.3 WITH THE FOLLOWING:

"5.1.2.3 Protection during construction

Further to the requirements of subclause 5.4.2 of SABS 1200 A (as amended), major excavating equipment and other plant shall not be operated dangerously close to known services. Where necessary, excavation in close proximity to known services shall be carefully carried out with suitable hand tools, excluding picks wherever their use could damage the services. No additional payment will apply to such more difficult work.

Should any service not being a known service be discovered or encountered during the course of the Contract, the Contractor shall, in addition to complying with the requirements of subclause 5.4.2 of SABS 1200 A (as amended), immediately notify the Engineer thereof and implement such measures as will prevent damage of such service or, if it was damaged in the course of discovery, will prevent and minimise the occurrence of any further damage occurring."

SDD 5.1.2.4 Negligence

DELETE SUBCLAUSE 5.1.2.4.

SDD 5.1.3 Stormwater and groundwater

ADD THE FOLLOWING:

"The Contractor shall, where applicable and at the earliest practicable opportunity, install the permanent drainage specified or shown on the Drawings and shall at his own cost provide the temporary drainage required to protect the works."

SDD 5.1.6 Road traffic control

DELETE THE SECOND SENTENCE OF SUBCLAUSE 5.1.6.

SDD 5.2 METHODS AND PROCEDURES

SDD 5.2.2 Excavation

SDD 5.2.2.1 Excavation for general earthworks and for structures

ADD THE FOLLOWING TO PARAGRAPH (b):

"When the nature of the material precludes the above procedure, additional excavations shall be carried out to provide working space for the erection of formwork. In general, payment will be made for excavating a working width of 600 mm, but the Contractor may excavate a greater working width at no additional cost to the Employer."

REPLACE THE FIRST SENTENCE OF PARAGRAPH (e) WITH THE FOLLOWING:

"Where excavations have been carried below the authorised levels, the Contractor shall backfill such excavations to the correct level with approved gravel compacted to 90% of modified AASHTO density or to the density of the surrounding material, whichever is the higher density.

Where excavations for structures have been carried out in hard material, the Engineer may direct that over-excavation be backfilled with weak concrete if there is a danger of settlement or differential settlement of the foundations.

Where the sides of excavations against which concrete is to be cast have been over-excavated or have collapsed partially, the Contractor shall retrim the excavations if necessary and, unless other remedial measures are agreed to by the Engineer, shall cast the concrete for the structure, including the additional concrete that may be required as a result of the over-excavation or partial collapse. The cost of the additional concrete or remedial measures shall be for the Contractor's account."

SDD 5.2.2.3 Disposal

REPLACE THE WORDS "in the project specification." *AT END OF THE SECOND SENTENCE WITH* "at sites to be designated by the Engineer.*"*

ADD THE FOLLOWING SUBCLAUSE IN SUBCLAUSE 5.2.2:

"SDD 5.2.2.4 Selection and stockpiling

Approval or designation of the material in a particular borrow pit or excavation for a particular purpose does not imply that all the material in the borrow pit or excavation is suitable for the particular purpose to which the said approval or designation relates, nor that all material in the borrow pit or source should be used for the particular purpose. The Contractor shall select suitable material from that borrow pit or source, discard unsuitable material and reserve material for other purposes as necessary.

The Contractor shall organise and carry out his operations in such a manner as will prevent the contamination of suitable embankment and backfill material with unsuitable materials. Any excavated material which becomes, in the Engineer's opinion, unsuitable for use in embankments or backfill as a result of contamination, shall be disposed of in a manner acceptable to the Engineer and shall be replaced by the Contractor with materials acceptable to the Engineer, all at the Contractor's cost.

When required, or when ordered by the Engineer, material shall be stockpiled for later use. The additional costs for stockpiling material shall be paid to the Contractor in accordance with the provisions of subclause SDD 8.3.14."

SDD 5.2.5 Transport for earthworks

REPLACE THE CONTENTS OF SUBCLAUSE 5.2.5 WITH THE FOLLOWING:

"The transport of all excavated materials, irrespective of the distance and source, shall be deemed to be free-haul, the cost of which is included in the Contractor's tendered rates and prices for the excavation of the materials. No separate compensation shall apply for the transportation of excavated materials."

SDD 7 TESTING

SDD 7.2 TAKING AND TESTING OF SAMPLES

REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

"The Contractor shall arrange with the approved independent laboratory engaged by the Contractor in terms of C3.4.2.5(b) of the Project Specifications to carry out sufficient tests on a regular basis as agreed between him and the Engineer to determine whether the degree of compaction, and, where applicable, the quality of materials used, comply with the Specifications and shall submit the results of these tests to the Engineer in a form approved by him.

The compaction requirements for fills shall be deemed complied with when at least 75% of the dry-density tests on any lot show values equal to or above the specified density and when no single value is more than five percentage points below the specified value."

SDD 8 MEASUREMENT AND PAYMENT

SDD 8.3 SCHEDULED ITEMS

SDD 8.3.1 Site preparation

REPLACE SUBCLAUSES 8.3.1.1 AND 8.3.1.2 WITH THE FOLLOWING:

"Where site preparation such as clearing, grubbing, the removal of large trees or the removal and stockpiling of topsoil is required, the provisions and scheduled items of SABS 1200 C shall apply."

SDD 8.3.2 Bulk excavation

REPLACE THE CONTENTS OF ITEM WITH THE FOLLOWING:

"(a) Excavate in all materials and use for embankment or backfill as ordered, from:

(1) Necessary excavations Unit: m³

(2) Designated borrow pits Unit: m³

(3) Commercial sources Unit: m³

The unit of measurement shall be the cubic metre measured in place in accordance with subclause 8.2 of SABS 1200 D.

Separate items will be scheduled for embankments and backfills for different parts of the works.

The tendered rates shall cover the cost of complying with all the precautions required in terms of subclause 5.1 of SABS 1200 D (as amended), in addition to the cost of excavating in all materials, basic selecting, loading, transporting within the applicable free-haul distance, off-loading, spreading or backfilling, watering, compacting, final grading, complying with the requirements for tolerances, providing for testing, finishing and tidying, all in accordance with the specifications.

In addition to the aforegoing, the tendered rate for subitem (b) shall further include for the costs of royalties (if applicable), whilst the tendered rate for subitem (c) shall also include for the costs of finding a source of suitable material, for making arrangements with the owner of the source, for procuring the material, for the payment of all requisite royalties, charges or damages, and for transporting the material to the site regardless of the distance involved. No payment will be made for the removal of overburden or stockpiling at the commercial source and no extra over payment shall apply for excavating in intermediate, hard or boulder material."

(b) Excavate in all materials and dispose Unit: m³

The unit of measurement shall be the cubic metre of material excavated, measured in place in accordance with subclause 8.2 of SABS 1200 D.

The tendered rates shall cover the cost of complying with all the precautions required in terms of subclause 5.1 of SABS 1200 D (as amended), in addition to the cost of excavating, basic selecting, loading, transporting within the applicable free-haul distance, off-loading at the spoil site, maintaining and finishing the spoil site, all in accordance with the specifications.

(c) Extra over subitems SDD 8.3.2(a)(1), SDD 8.3.2(a)(2) and SDD 8.3.2(b) for:

(1) Intermediate excavation Unit: m³
(2) Hard rock excavation Unit: m³
(3) Boulder excavation, Class A Unit: m³
(4) Boulder excavation, Class B Unit: m³

The rate shall cover the additional cost of the operations enumerated in subclauses 8.3.2.(a) and 8.3.2.(b) above for any portion of the excavation that is classified as intermediate, hard rock, boulder excavation class A or boulder excavation class B as applicable. (See Drawing D-2)"

SDD 8.3.3 Restricted excavation

REPLACE THE WORDS "in 1 m increments" *AT THE END OF THE FIRST SENTENCE OF SUBITEM (a) WITH* "in the increments indicated in the Schedule of Quantities".

REPLACE "in 5.2.2.1 – 5.2.2.3 (inclusive)" *AT THE END OF SUBCLAUSE (a) WITH* "in subclauses 5.2.2.1 to 5.2.2.5 (inclusive)".

SDD 8.3.4 Importing of materials

DELETE SUBITEM (a) OF 8.3.4.

SDD 8.3.6 Overhaul

DELETE SUBCLAUSE 8.3.6.

SDD 8.3.8 Existing services

SDD 8.3.8.1 Location

REPLACE ITEM 8.3.8.1 WITH THE FOLLOWING:

"8.3.8.1 Hand excavation for locating and exposing existing services:

(a) In roadways Unit: m³

(b) In all other areas Unit: m³

The unit of measurement shall be the cubic metre of material excavated, measured in place according to the authorised or actual dimensions of the excavation, whichever is the lesser.

The tendered rates shall cover the cost of excavating in all materials by means of hand tools within authorised dimensions and at locations approved by the Engineer in accordance with the requirements of subclause SDA 5.4.1 for all precautionary measures necessary to protect the services from damage during excavation and backfilling, and for subsequent backfilling and compacting. Compaction of material in all areas except in roadways shall be to 90% of the modified AASHTO density.

The tendered rate for hand excavation in roadways shall include compensation for compacting excavated or selected backfill material to 93% of modified AASHTO density. Reinstating layerworks and surfacing shall be measured and paid for in terms of SABS 1200 DB.

The tendered rates shall also include for keeping excavations safe, for dealing with surface and subsurface water, for removing surplus excavated material from the site, for transporting all material within the free-haul distance, and for supplying adequate supervision during both excavation and backfilling operations. Overhaul, if applicable, will be measured and paid for in terms of SABS 1200 DB."

SDD 8.3.12 Road traffic signs and markings

REPLACE THE WORD "Separate" IN THE FIRST SENTENCE OF ITEM 8.3.12 WITH THE FOLLOWING:

"Where the Engineer requires the provision of road traffic signs and/or road markings and/or any other measures additional to those to be provided by the Contractor in accordance with subclause 5.1.6, separate …".

ADD THE FOLLOWING ITEMS IN SUBCLAUSE 8.3:

"**SDD 8.3.14 Extra over items SDD 8.3.2.(a)(1) and SDD 8.3.3 for temporary stockpiling** Unit: m³

The unit of measurement shall be the cubic metre of material from necessary excavations, temporarily stockpiled by the Contractor on the instructions of the Engineer, before being used in embankments or backfill. Measurements shall be taken in place in compacted embankment or backfill as the case may be.

The tendered rate shall include for the costs, additional to those provided for in SDD 8.3.2(a)(1) and SDD 8.3.3, of off-loading, forming and maintaining the stockpile for as long as is required, reloading and transporting within the applicable free-haul distance from the stockpile.

Payments to the Contractor under this item will only be made in respect of that material stockpiled on the instructions of the Engineer (which instruction shall state specifically that payments for such stockpiling will be paid for under this item) and no payments will be made to the Contractor under this item in respect of materials stockpiled by the Contractor on his own volition, nor for materials necessarily stockpiled by the Contractor in consequence of the sequence of operations adopted by him in the course of executing the works, whether such stockpiling was avoidable or otherwise."

"**SDD 8.3.15 Extra over items SDD 8.3.2.(a)(1) and SDD 8.3.3 for temporary stockpiling** Unit: m³

The unit of measurement shall be the cubic metre of material from necessary excavations, temporarily stockpiled by the Contractor on the instructions of the Engineer, before being used in embankments or backfill. Measurements shall be taken in place in compacted embankment or backfill as the case may be.

The tendered rate shall include for the costs, additional to those provided for in SDD 8.3.2(a)(1) and SDD 8.3.3, of off-loading, forming and maintaining the stockpile for as long as is required, reloading and transporting within the applicable free-haul distance from the stockpile.

Payments to the Contractor under this item will only be made in respect of that material stockpiled on the instructions of the Engineer (which instruction shall state specifically that payments for such stockpiling will be paid for under this item) and no payments will be made to the Contractor under this item in respect of materials stockpiled by the Contractor on his own volition, nor for materials necessarily stockpiled by the Contractor in consequence of the sequence of operations adopted by him in the course of executing the works, whether such stockpiling was avoidable or otherwise."

SDDB EARTHWORKS (PIPE TRENCHES)

SDDB 3 MATERIALS

SDDB 3.5 BACKFILL MATERIALS

ADD THE FOLLOWING PARAGRAPHS TO SUBCLAUSE 3.5:

"(c) Cement-stabilized backfilling

Backfilling shall, where directed by the Engineer, be stabilized with 5% cement. The aggregate shall consist of approved soil or gravel containing stones not bigger than 38 mm and with a plasticity index not exceeding 10.

The soil or gravel shall be mixed with 5% cement and shall be compacted in layers of 100 mm thick to 90% of modified AASHTO density.

(d) Soilcrete backfilling

The aggregate for soilcrete shall be mixed with 5% cement and shall consist of approved soil or gravel containing stones not bigger than 38 mm and with a plasticity index not exceeding 10.

The soil or gravel shall be mixed in a concrete mixer with the cement and enough water to acquire a consistency that allows the mixture to be placed with vibrators to fill all voids between the pipe and the sides of the trench. Shuttering shall be used where necessary."

SDDB 3.7 SELECTION

REPLACE THE SECOND AND THIRD SENTENCES OF SUBCLAUSE 3.7 WITH THE FOLLOWING:

“The Contractor is required to use selective methods of excavation. The Contractor shall selectively remove and keep separate the sandy materials from unsuitable material and place it adjacent to the trench for reuse as backfill, selected fill, selected granular material or for other use as ordered by the Engineer.”

ADD THE FOLLOWING AT THE END OF SUBCLAUSE 3.7:

“Material which, in terms of Subclause 6.2 of SANS 1200 D or Subclause 6.1 of SANS 1200 LB, is too wet for immediate use in the trench (but which is otherwise suitable) will not be regarded as “unsuitable” material and, if so ordered by the Engineer, the Contractor shall spread such material in a suitable area until it has dried sufficient for later use. Should the material which is replaced in the trench become too wet again, due to the fact that the Contractor made insufficient provision for the handling and removal of groundwater in accordance with Subclause 5.5 of SANS 1200 A, the Contractor shall replace the material at his own cost with material which is, in the opinion of the Engineer, suitable.

When preparing his programme and construction methods, the Contractor shall make allowance for selective excavation and the handling and drying out of materials which is too wet for immediate use.”

SDDB 5 CONSTRUCTION

SDDB 5.1 PRECAUTIONS

SDDB 5.1.3 Accommodation of traffic and access to properties

*REPLACE THE SEMICOLON AND THE WORD "*and" *AT THE END OF SUBCLAUSE 5.1.3(a) WITH A FULL STOP AND REPLACE ITEM (b) WITH THE FOLLOWING:*

"(b) Where necessary to achieve compliance by the Contractor with his obligations to provide and maintain pedestrian and vehicular access to properties affected by the works, the Contractor shall construct and maintain to the satisfaction of the Engineer, such temporary access roads around, and/or steel or timber bridges over excavations in roads, pavements, entrances or accesses to properties.

Temporary pedestrian access bridges shall be at least 1,2 m wide and temporary access bridges for vehicles shall be at least 3,6 m wide. All temporary access bridges shall be fitted with handrails as well as protective mesh fencing on both sides.

On completion of the work, the Contractor shall dismantle and remove all such temporary constructions and reinstate these areas to their former condition.

Except only where the Engineer has included in the Schedule of Quantities, particular payment items specifically therefor, the Contractor will not be paid directly for the construction and maintenance of temporary access roads and/or the provision and maintenance of bridges as aforementioned, and the costs thereof shall be deemed included in the Contractor's tendered rates for excavation."

SDDB 5.4 EXCAVATION

ADD THE FOLLOWING:

"Except where otherwise specified, trenches shall be of such a depth that the minimum cover over the pipes shall be 700 mm except at road-crossings where the minimum cover shall be 1 000 mm."

Should the Contractor detect areas where the cover is doubtful, he shall report this immediately in writing to the Engineer, before any pipes are laid, so that remedial steps can be taken.

The Contractor shall exert maximum caution in excavating alongside or near existing services, pipelines, buildings or structures. The Contractor shall use non-explosive methods for the excavation of hard rock in these cases and where instructed by the Engineer (see SDD 5.2.2.5)."

SDDB 5.6 BACKFILL

SDDB 5.6.3 Disposal of soft excavation material

REPLACE THE WORDS "unless otherwise required in the project specification." *AT THE END OF SUBCLAUSE 5.6.3 WITH:*

"… or to spoil in accordance with the requirements of subclause SDD 5.2.2.3, as instructed by the Engineer."

ADD THE FOLLOWING NEW SUBCLAUSES IN CLAUSE 5:

"SDDB 5.11 UNSTABLE TRENCH BOTTOM

The Engineer may, upon consideration of the condition of the trench bottom, particularly with regard to the properties of the soil materials, order the use of a crushed stone layer in order to provide a stable platform for placing of the pipe bedding and laying the pipe in certain sections of the trenches. The stone layer shall consist of 19 mm single-sized crushed stone, and shall have a specified thickness of 150 mm over the specified minimum base width.

Should the material in the trench bottom or the bedding material be of such a nature that it can penetrate the stone layer, the Engineer may instruct the Contractor to enclose the stone layer completely within a geotextile filter blanket (Kaymat U14 or equal approved), which shall have overlaps of at least 200 mm.

SDDB 5.12 DEPOSITING MATERIAL EXCAVATED FROM TRENCH

Unless otherwise ordered by the Engineer, all excavated material shall be kept within 5 m of the pipeline centreline. The toe of the bank of excavated material shall be trimmed well back from the edge of the trench so as to leave a minimum 0,6 m clearance between the toe of the bank and the edge of the trench. The Contractor shall keep this strip clear of excavated material at all times.

The Contractor shall take steps to avoid burying or contaminating topsoil which shall be set aside for replacing, as far as practical, on the surface from which it was excavated.

SDDB 5.13 CLEANING UP AS WORK PROCEEDS

The Contractor shall complete all backfilling, trimming, levelling and cleaning up of the Site as work proceeds. This work shall not lag by more than 1 km behind the pipelaying team."

SDDB 8 MEASUREMENT AND PAYMENT

SDDB 8.3 SCHEDULED ITEMS

SDDB 8.3.2 Excavation

(a) Excavate in all materials, for trenches, backfill compact and dispose of surplus material

*REPLACE "*of 1,0 m" *IN THE FIRST SENTENCE OF 8.3.2(a) WITH:*

"as specified in the Schedule of Quantities."

ADD THE FOLLOWING AT THE END OF SUBCLAUSE 8.3.2(a):

"The Contractor will be allowed to claim the following percentages for interim payment purposes, as the following various activities are completed (Note that the percentage applicable is given as a cumulative figure):

Stage of Completion	**Percentage Applicable**
Material excavated	65.00%
Backfill completed and compaction successfully tested	90.00%
Surplus material removed and area finished	100.00%

(b) Extra over item (a) above for:

REPLACE SUBCLAUSE 8.3.2(b), SUBITEM (2) WITH THE FOLLOWING:

"(2) Hard rock excavation:

(a) By means of explosives Unit: m³

The rate shall be applicable to methods which use explosives (blasting) for the excavation of hard rock.

(b) Without explosives (hand methods) Unit: m³

The rate shall be applicable to hand methods (eg. hand pneumatic hammers) which do not use explosives for the excavation of hard rock.

(c) Without explosives (other methods) Unit: m³

The rate shall be applicable to non-explosive methods for the removal of hard rock not covered by subitem (2)(b) above (eg. expansive chemicals, machine mounted hydraulic hammers/breakers, or other approved method).

No payments will be made under subitems (1), and (2) in respect of any materials measured and paid for under subitem (3) below."

AND ADD THE FOLLOWING NEW SUBITEMS TO SUBCLAUSE 8.3.2(b), AFTER NEW SUBITEM 2:

"(3) Hand excavation where ordered by the Engineer in:

(a) Soft material Unit: m³

(b) Intermediate material Unit: m³

(c) Hard material Unit: m³

The unit of measurement shall be the cubic metre of material, measured in place according to the authorised dimensions, which was excavated by hand on the specific prior written instructions of the Engineer; provided always that the Engineer's said instruction shall have stated that measurement and payment for such hand excavation will be in accordance with this item.

The tendered rate shall include full compensation for the additional cost, effort and time resulting from excavating in the respective materials using hand methods only.

The Engineer shall not be obliged to authorise payment under this item in respect of any hand excavation carried out (whether ordered in writing or otherwise), which hand excavation was in any case necessary to achieve compliance by the Contractor with his obligations under the Contract to

(i) utilise construction appropriate to the nature of the specific parts of the works; and/or

(ii) protect existing structures and/or services; and/or

(iii) comply with all prevailing legislation and regulations.

(4) Backfill stabilized with 5% cement where directed by the Engineer Unit: m³

The unit of measurement shall be the cubic metre of backfill material, measured in place after compaction according to the authorised dimensions, which was stabilized on the Engineer's instructions in accordance with subclause SDDB 3.5(c).

The tendered rate shall include full compensation for supplying the cement and for selecting, mixing, backfilling and compacting the stabilized material.

In the case of Road Construction, the material should be stabilised to 90% of modified AASHTO density.

(5) Soilcrete backfill where directed by the Engineer Unit: m³

The unit of measurement shall be the cubic metre of soilcrete placed on the Engineer's instructions in accordance with subclause SDDB 3.5(d), measured in place according to the authorised dimensions.

The tendered rate shall include full compensation for supplying the cement and for selecting, mixing and placing the soilcrete as well as for the cost of shuttering if required."

ADD THE FOLLOWING SUBITEMS IN 8.3.2 AFTER SUBITEM 8.3.2(c):

"(d) Excavate in all materials for stormwater inlet and outlet structures and for manholes, catchpits, valve chambers and the like, irrespective of depth, and backfill around structures: Unit: m³

The unit of measurement shall be the cubic metre of material excavated, measured in place according to the authorised dimensions, and excluding the volume of material excavated and paid for under subitem (a).

The tendered rate shall include for the costs of excavating in all materials, backfilling, compacting, trimming and tidying the final surface around the structure, disposing of surplus and unsuitable materials within the free-haul distance and, where applicable, selecting and keeping separate, excavated material suitable for use as backfill.

(e) Excavate open drains in all materials Unit: m³

The tendered rates shall include full compensation for excavating in all materials within the dimensions specified or authorised by the Engineer and to the specified lines and profiles, for the disposal of surplus and unsuitable excavated material where applicable, and in the case of item (d), for backfilling with suitable approved material compacted to 90% of modified AASHTO density around the structures.

(f) Extra over subitems (d) and (e) for excavating in:

(1) Intermediate material Unit: m³

(2) Hard rock material Unit: m³

Measurement and payment shall be in accordance with the provisions of 8.3.2(b) of SABS 1200 D (as amended)."

ADD THE FOLLOWING SUBCLAUSE AFTER SUBCLAUSE 8.3.2(c):

SDDB 8.3.3 Excavation ancillaries

SDDB 8.3.3.3 Compaction in road reserves

REPLACE THE HEADING OF THIS SUBITEM WITH THE FOLLOWING:

"SDDB 8.3.3.3 Compaction in road crossings"

REPLACE THE SENTENCE, "The volume will be measured as specified in 8.2.2, 8.2.3 and 8.3.3.1", *WITH THE FOLLOWING:*

"To determine the volume in the case of gravel roads, the depth will be measured from the underside of the gravel wearing course to the top of the fill blanket, and in the case of bitumen roads, from the underside of the subbase to the top of the fill blanket.

The rest of the trench shall be backfilled as specified in clauses 5.9.3, 5.9.4 and 5.9.5, as applicable, and payment will be made under item 8.3.6.1."

SDDB 8.3.7 Accommodation of traffic

REPLACE THE HEADING AND CONTENTS OF ITEM 8.3.7 WITH THE FOLLOWING:

“8.3.7 Accommodation of traffic Unit: sum

The tendered sum shall, (except where particular items are scheduled to cover particular costs) include full compensation for compliance with the requirements of 5.1.3 of SANS 1200 DB (as amended), including the construction and maintenance of bypasses and the use of existing roads as bypasses during the construction period.

It shall also include full compensation for: the provision, maintenance and removal of all traffic control measures, including temporary traffic signs, road markings, lighting, barricading, flagmen and, where necessary, communications equipment to regulate traffic; for the construction of temporary drainage works; for the maintenance of drainage works; and for arrangements for moving and subsequently reinstating services for the purposes of accommodating traffic, attending to traffic problems and complying with the requirements of the Road Traffic Ordinance and the relevant local authorities.

The tendered lump sum shall not be adjusted in the event of any extension of time for completion being granted by the Engineer in accordance with Clause 5.12.1 (GCC 2010).

Payment shall be made in equal monthly instalments over the entire period allowed for completion, provided that where any extension of time for completion is granted, the amount which shall be payable under this item in any subsequent monthly payment certificate shall be the outstanding unpaid amount of the lump sum, divided by the number of months remaining until the due completion date of the Contract, as revised in accordance with the Conditions of Contract."

“SDDB 8.3.8 Crushed stone bedding layer and geotextile blanket

Where the use of a layer of crushed stone in the trench bottom has been authorized by the Engineer, it will be measured by volume calculated according to the length multiplied by the specified thickness and specified minimum base width.

The rate shall cover the cost of all additional excavation and preparation of the trench bottom to accommodate the layer of stone, the removal of unsuitable material, the supply and placing of a layer of stone at least the specified thickness over at least the specified width and all related activities in order to

produce a stable platform.

Where the Engineer has authorized the use of geotextile filter blanket, this will be measured by area as:

Area = 2 x (specified thickness + minimum base width) x net length.

The rate shall include the cost of supply, placing and losses as a result of overlaps and over-excavated trench widths.”

SDDK GABIONS AND PITCHING

SDDK 3 MATERIALS

SDDK 3.2.1 Stone

REPLACE THE CONTENTS OF TABLE 2 WITH THE FOLLOWING:

"TABLE 2 SIZE AND MASS OF INDIVIDUAL STONES FOR PITCHING

1	2	3	4
Size/mass of pitching	Thickness of pitching mm, min	Least dimension mm, min	Mass kg, min
Extra heavy	600	300	180
Heavy	400	190	50
Medium	300	150	27
Light	200	110	11

"

SDDK 5 CONSTRUCTION

SDDK 5.3 PITCHING

SDDK 5.3.3 Grouted pitching

REPLACE THE WORDS "(table 4)" *IN THE SECOND LINE OF THE FIRST PARAGRAPH WITH* "(table 2)".

SDDK 5.4 <u>GEOSYNTHETIC CLAY LINER (GCL)</u>

The finished surfaces of all works that will be in contact with the Geosynthetic Clay Liner (GCL) shall be free of all protrusions, stones, vegetation, roots, rubble, refuse and particles that could damage either type of liner. The surface shall be approved by the Engineer prior to any liner placement.

The GCL shall be a manufactured product consisting of a sodium montmorillonite clay (bentonite) layer evenly distributed between two geotextiles meeting with the specifications in the table below. The GCL should conform to the property requirements listed in Table 1 and shall be free of tears, holes, or other defects, which may affect its serviceability. Encapsulating geotextiles shall be mechanically bonded together using a needle punch process. Needle punched GCL's shall be continuously inspected for broken needles using an in-line metal detector and broken needles shall be removed.

Table 1: GCL Nominal Specifications

MATERIAL & PROPERTY			
Geotextile cover layer mass (cap)		200g/m² min.	
Geotextile carrier layer mass		110g/m² min. woven	
Minimum mass of sodium bentonite		**3 700g/m²**	
Bentonite	Montmorillonite content (*Methylene blue test*)	75% min.	
	Swell Index (*ASTM D 5890 : 2g/100ml/24h*)	24ml/g min.	
	Water Absorption (*Enslin Neff/24h*)	600% min.	
	Fluid Loss (*ASTM D 5891*)	18ml max.	
Thickness dry (*DIN 53855*)		4.5 mm min.	
Permittivity		5 x 10^{-9} l/s max.	
k - value (*DIN 18130*)		2x 10^{-11} ms^{-1} (*d = 1cm*) max.	
Index flux (*ASTM D 5887*)		6 x 10^{-9} $m^3/m^2/s$ max.	
Needle - punched connection:			
Peel strength (*ASTM-D-413*) or ASTM D 4632		**>360 N/m**	
Grab Strength Machine Direction (*ASTM D4632*)		600N min.	
Grab Strength Transverse Direction (*ASTM D4632*)		600N min.	
CBR Burst Strength (*AS 3706.4*)		1400N min.	
CBR Burst Elongation (*AS 3706.4*)		15% min.	
Hydrated Internal Shear Strength (*ASTM D 6243*)		35kPa min.	
Minimum Roll Length		30m	

The GCL on which the tenderer bases his rates, should have a well-established and successful performance record for the containment of Municipal Solid Waste. The results of successful test programmes to establish the durability of the liner material should be available. Details showing that the particular material has a proven successful capability to be used as a liner to contain Municipal Solid Waste and is resistant to the leachate generated by such waste should be provided.

The Tenderer shall submit at least the above data, as determined by an independent laboratory, and the relevant test method in a specification sheet, as well as all other pertinent details, to enable the Engineer to

evaluate the material from a technical aspect. The provision of the details below shall not necessarily be sufficient for the material to be evaluated and other testing and test results may be requested by the Engineer, at his discretion, before the material proposed by any Tenderer can be considered for this project.

GCL rolls should be packaged in an opaque, waterproof, protective covering and wrapped around a central core. Tears in the packaging shall be repaired to restore a waterproof protective barrier around the GCL. Unloading of rolls from the delivery vehicles shall be done in such a way as to prevent damage to the GCL and its packaging.

Storage

The GCL rolls shall be stored as specified by the manufacturer.

Field storage shall be in flat dry areas where water cannot accumulate and the GCL rolls can be protected from damage. Storage of the rolls on blocks or pallets will not be allowed unless the GCL rolls are fully supported as approved by the Engineer. Stacks of GCL rolls shall be no greater than three high, or as recommended by the manufacturer. Rolls shall be covered with a water proof tarpaulin or plastic sheet if stored outdoors or there is a risk of water ingress.

Handling

The GCL rolls shall be handled as specified by the manufacturer.

Generally the rolls shall not be dragged, lifted by one end, or dropped to the ground from the delivery vehicle. A pipe or solid bar of sufficient strength to support the full weight of the roll without significant bending shall be used for all unloading and handling activities. The diameter of the pipe shall be small enough to be easily inserted through the core of the GCL roll. Chains shall be used to link the ends of the core pipe to the ends of a spreader bar. The spreader bar shall be wide enough to prevent the chains from rubbing against the ends of the GCL roll. Alternatively, a stinger bar protruding from the end of a forklift or other equipment may be used. The stinger bar shall be at least three-fourths the length of the core and also must be capable of supporting the full weight of the GCL without significant bending. If recommended by the manufacturer, a sling handling method utilising appropriate loading straps may be used.

Placement

The GCL shall be installed as soon as practical after completion and approval of the base layer.

The Contractor shall plan the placement of the GCL rolls prior to deployment and such plans shall be subject to approval by the Engineer. The position of each roll shall be set in accordance with the plan prior to placement.

Rolls shall be delivered to the work area in their original packaging. Immediately prior to placement, the packaging shall be carefully removed without damaging the GCL. The GCL shall be anchored at the top and carefully deployed down the slope to eliminate wrinkles. Dragging of GCL panels over the ground surface shall be minimised and panels which are, in the opinion of the Engineer, dragged and moved excessively, shall be rejected. Deployed GCL panels shall lie flat on the subgrade surface, with no wrinkles or folds.

The GCL shall be placed in accordance with the manufacturer's specifications and generally with minimum transverse (between the long sides of each of the sheets) laps of 200mm (unless otherwise approved) and sheets shall be joined together in accordance with the manufacturer's specifications. No metal staples or wire will be allowed for stitching or joining. All material used shall be at least as resistant to degradation as the GCL materials themselves.

The GCL rolls shall not be allowed to roll down the slopes in an uncontrolled way.

All alternative aspects of the placement methods used shall meet with the approval of the Engineer.

Seams

The GCL shall be placed with seams oriented parallel to the line of maximum slope and shall be free of tension or stress upon completion of the installation. Panels shall be positioned with the overlap recommended by the manufacturer, but not less than 200 mm after shrinkage for panel sides or 600 mm after shrinkage for panel ends. Dirt or other foreign matter shall be removed from the overlap area immediately prior to seaming. If recommended by the manufacturer, bentonite of the same type as the bentonite used for the GCL shall be placed along the entire overlap width at a minimum rate of 0.37kg/linear metre or as recommended by the manufacturer. Overlaps which occur on slopes shall be constructed with the up slope GCL shingled over the down slope GCL. The transverse overlap shall not be within 2m of any low point in the lining system. The end laps of alternate sheets shall be more than 2m apart.

Alternative seaming methods may be approved if recommended by the manufacturer and approved by the Engineer.

Protection

Only those GCL panels, which can be anchored and covered in the same day, shall be unpackaged and installed. If exposed GCL cannot be permanently covered before the end of a working day, it shall be temporarily covered with plastic or other waterproof material to prevent hydration.

The GCL rolls shall be protected as specified by the manufacturer.

Repairs

Holes or tears in GCL shall be repaired by placing a patch of GCL extending a minimum of 300mm beyond the edges of the hole or tear on all sides. If recommended by the manufacturer, granular bentonite or bentonite mastic shall be applied in the overlap area.

SDDK 5.5 1.5 mm and 2mm GEOMEMBRANE LINER

The finished surfaces of all works that will be in contact with the Geomembrane liner shall be free of all protrusions, stones, vegetation, roots, rubble, refuse and particles that could damage either type of liner. The surface shall be approved by the Engineer prior to any liner placement.

The geomembrane liner shall be a manufactured product consisting of High Density Polyethylene (HDPE) meeting with the specifications in the table below as well as those published in the GRI Test Method GM13 (“Test Methods, Test Properties and Testing Frequency for High Density Polyethylene (HDPE) Smooth and Textured Geomembranes”). The geomembrane should conform to the property requirements listed in Table 2 and shall be free of tears, holes, or other defects, which may affect its serviceability.

Table 2: HDPE Geomembrane Nominal Specifications (extracted from GRI Test Method GM13 standard specifications)

	Values		
Tested Properties	**Unit**	**1.5mm**	**2.00mm**
Thickness	mm	1.5	2
Density	g/cm³	min 0.94	min 0.94
Tensile properties			
Yield stress	N/mm	min 22	min 29
Break stress	N/mm	40	53
Yield elongation	%	12	12
Break elongation	%	700	700
Tear resistance	N	187	249
Puncture resistance	N	480	640
Carbon black content	%	2-3	2-3
Oxidative induction time (OIT)	min	min 100	min 100
Stress crack resistance	hr	min 300	min 300

SDDK 5.5.1 General

The Main Contractor shall be responsible for all aspects of the geomembrane installation notwithstanding his employment of a specialist lining subcontractor.

SDDK 5.5.2 Anchor Trench

The anchor trenches shall be excavated to lines and widths shown on the design drawings prior to geomembrane placement.

Corners in the anchor trench shall be rounded with a minimum radius of 300mm (or as approved by the Engineer) where the geomembrane adjoins the trench to minimise sharp bends in the liner material.

SDDK 5.5.3 Preparation for Flexible Membrane Liner Deployment

Panel Layout

Prior to commencement of a liner deployment, layout drawings shall be produced to indicate the panel configuration and general location of field seams for the project.

Identification

Each panel used for the installation will be given a number which will be correlated with a batch or roll number. This panel identification number shall be related on the panel placement form, which will be used when required.

SDDK 5.5.4 Field Panel Placement

Weather Conditions

Geomembrane deployment will generally not be done during any precipitation, in the presence of excessive moisture, in an area of standing water, or during high winds.

Location

The Contractor will attempt to install field panels as indicated on the layout drawing. If the panels are deployed in a location other than that indicated on the layout drawings, the revised location will be noted in the field.

These notations will be maintained and submitted by the Contractor as determined on a site specific basis.

Documentation of Panel Placement

Information relating to geomembrane panel placement including date, time, panel number, and panel dimensions may be maintained on a site specific basis on the panel placement

If a portion of a roll is set aside to be used at another time, the roll number will be written on the remainder of the roll in several places.

Method of Deployment

The method and equipment used to deploy the panels must not damage the geomembrane or the supporting base material.

No personnel working on the geomembrane will wear shoes that can damage the liner or engage in actions which could result in damage to the geomembrane.

Adequate temporary loading and/or anchoring (ie sand bags, tyres) which will not damage the geomembrane, should be placed by the Contractor to prevent uplift of the liner by wind.

The geomembrane will be deployed with slack to allow for typical thermal expansion.

Any area of a panel seriously damaged (torn, twisted or crimped) will be marked and repaired in accordance with

SDDK 5.5.5 Geomembrane Field Seaming

General Requirements

Layout

In general, seams shall be oriented parallel to the slope, ie oriented along, not across the slope. Whenever possible, horizontal seams should be located on the base of the cell, not less than two metres from the toe of the slope. Each seam made in the field shall be numbered. Seaming information to include seam number, welder ID, machine number, temperature setting and weather conditions may be maintained on the Panel Seaming Form as presented in **Annexure E.**

Personnel

All personnel performing seaming operations shall be trained in the operation of the specific seaming equipment being used and will qualify by successfully welding a test seam as described in the Specifications.

Equipment

Fusion Welding

Fusion welding consists of placing a heated wedge, mounted on a self-propelled vehicular unit, between two (2) overlapped sheets such that the surface of both sheets are heated above the geomembrane material's melting point. After being heated by the wedge, the overlapped panels pass through a set of preset pressure wheels which compress the two (2) panels together to form the weld. The fusion welder is equipped with a device which continuously monitors the temperature of the wedge.

Extrusion Fillet Welding

Extrusion fillet welding consists of introducing a ribbon of molten resin along the edge of the overlap of the two (2) geomembrane sheets to be welded. A hot air preheat and the addition of molten polymer causes some of the material of each sheet to be liquefied resulting in a homogeneous bond between the molten weld bead and the surfaces of the overlapped sheets. The extrusion welder is equipped with gauges giving the temperature in the apparatus and a numerical setting for the pre-heating unit.

Weather Conditions

Factors such as the geomembrane temperature, humidity, wind, precipitation, etc, can affect the integrity of field seams and must be taken into account when deciding whether or not seaming should proceed. Test seams, are required prior to daily production seaming to determine if the weather conditions will affect the Contractor's ability to produce quality seams. Additional non-destructive and destructive testing of production seams should be done to substantiate the decision made by the Contractor to seam on any given day.

Seam Preparation

Fusion Welding

The panels of the geomembrane should be overlapped by approximately 100mm to 150mm prior to welding.

The seam area should be cleaned prior to seaming to ensure the area is clean and free of moisture, dust, dirt, or debris of any kind.

The panels should be adjusted so that seams are aligned with the fewest possible number of wrinkles and "fishmouths".

A movable protective layer may be used, at the discretion of the Contractor, directly below the overlap of geomembrane that is to be seamed to prevent build-up of dirt or moisture between the panels.

Extrusion Fillet Welding

Whenever possible, the sheet should be bevelled prior to heat tacking into place.

The panels of geomembrane should be overlapped a minimum of 75mm.

Using a hot air device, the panels of geomembrane to be welded should be temporarily tacked taking care not to damage the liner.

The seam area should be cleaned prior to seaming to assure the area is clean and free of moisture, dust, dirt, and debris of any kind.

The seam overlap should be ground prior to welding within one (1) hour of the welding operation in a manner that does not damage the geomembrane. Grind marks should be covered with extrudate whenever possible. In all cases grinding should not extend more than 5mm past the edge of the area covered by the extrudate during welding.

The extruder should be purged prior to beginning the seam to remove all heat degraded extrudate from the barrel.

The welding rod should be kept clean and dry.

Trial Welds

Trial welds shall be conducted by welding technicians prior to each seaming period, every five (5) hours, as weather conditions dictate, or as requested by personnel if welding problems are suspected, or if requested by the engineer or his representative. All trial welds will be conducted under the same conditions as will be encountered during actual seaming. Once qualified by a passing trial weld, welding technicians will not change parameters without performing another trial weld.

Trial Weld Lengths

The trial weld shall be made by joining two (2) pieces of geomembrane, each piece at least 150mm in width. Trial welds for fusion welds will be approximately 5m long and extrusion trial welds will be a minimum of 1.5m long.

Sample Procedure

The seam should be visually inspected for squeeze out, footprint, pressure and general appearance.

Three (3) 25mm wide specimens should be cut, one (1) from the middle of the seam and one each 300mm from each end of the test seam using a 25mm die cutter. The specimens shall then be tested in peel using a field tensiometer.

In order for a trial weld to be considered acceptable, all three specimens must meet the following criteria :

Exhibit Film Tearing Bond (FTB)

If any specimen is non-conforming the entire procedure shall be repeated. In the case of double track fusion welded seams, both welds must pass in order to be considered acceptable.

If repeat tests utilising reasonable sets of welding parameters also fail, the seaming apparatus shall not be accepted and shall not be used for seaming until the deficiencies are corrected and a passing test seam is achieved.

Trial Weld Documentation

The CQC co-ordinator and the Engineer or his representative will be present during peel testing and will record date, time, operator, machine number, ambient and operating temperatures, speed setting, peel values, and pass/ fail designation.

All trial weld records shall be maintained on the Trial Weld Form as exhibited in Annexure E.

The CQC co-ordinator will give final approval to proceed with welding once the Engineer or his representative has verified that he too is satisfied that all procedures have been correctly completed.

General Seaming Procedures

Seaming shall extend into the anchor trench.

While welding a seam the proper overlap should be monitored and maintained.

The seam area should be inspected to ensure that it is clean and free of moisture, dust, dirt or debris of any kind.

Welding technicians should periodically check machine operating temperatures and speed, and mark this information on the geomembrane.

Wrinkles at the seam overlap should be aligned to allow welding through the wrinkle.

"Fishmouths" or wrinkles at seam overlaps that cannot be welded through should be cut along the ridge in order to achieve a flat overlap. The cut "fishmouth" or wrinkle should be heat tacked flat and extruded or patched with an oval or round patch of the same geomembrane extending a minimum 75mm beyond the cut in all directions.

All cross/butt seams between two (2) rows of seamed panels should be welded during the coolest time of the day when practical, to allow for typical thermal expansion of the geomembrane.

Prior to welding cross/butt seams, the top and bottom overlap of intersecting fusion welded seams should be trimmed to 150mm. Intersecting extrusion fillet welded seams should be ground to flatten the extrusion bead prior to welding butt seams.

All "T" joints produced as a result of cross/butt seams should be extrusion fillet welded. Overlap on each "leg" of the "T" joint should be trimmed back 150mm. Then a distance of 75mm minimum on each of the three (3) legs of the "T" should be ground and all of the area prepared by grinding should be extrusion welded.

Whenever possible welding technicians should cut a 25mm peel specimen at the end of every seam. Prior to welding the next seam, the specimen will be tested for peel.

In the event non-complying seam test strips are encountered the welding machine will be taken out of service until a passing trial weld is obtained, and additional peel specimens will be taken to localise the flaw.

The Engineer or his representative may order the CQC co-ordinator to take destructive samples from any seam, if defects are suspected.

Seaming Documentation

Welding technicians should mark on the liner with permanent markers at the start of all seams information regarding date, time, welding technician ID, machine number and set temperature. The CQC co-ordinator should record date, time, seam number, welding technician ID, machine ID, set temperature, speed and weather conditions on the Panel Seaming Form (**Appendix F)**.

Welding technicians should periodically check operating temperature and speed and mark the information along the seam.

The CQC co-ordinator should make periodic checks on welding operations to verify overlap, cleanliness etc.

SDDK 5.5.6 Testing : Seam Testing

General

Air Pressure Testing

Equipment for Air Testing

An air pump (manual or motor driven) capable of generating and sustaining a pressure between 138 kPa to 414 kPa.

A rubber hose with fittings and connections.

A sharp hollow needle, or other approved pressure feed device with a pressure gauge capable of reading and sustaining a pressure between 0 kPa to 414 kPa.

Procedure for Air Testing

Both ends of the seam to be tested should be sealed.

A needle or other approved pressure feed device should be inserted into the sealed channel created by the fusion weld.

The test channel should be inflated to a pressure of approximately 207 kPa and the pressure maintained within the range listed in the initial pressure schedule. With the valve closed the initial pressure should be observed and recorded.

Initial Pressure Schedule *

Material (mm)	**Minimum kPa**	**Maximum kPa**
1.0	166	207
1.5	186	241
2.0	207	241
2.5	207	241

*Initial pressure settings should be recorded after an optional two (2) minute stabilisation period. The purpose of this "relaxing period" is to permit the air temperature and pressure to stabilise. The initial pressure reading may be recorded once stabilisation has taken place.

The air pressure should be observed and recorded five (5) minutes after the initial pressure setting is recorded. If loss of pressure exceeds the following or if the pressure does not stabilise, the suspect area should be located and repaired in accordance with Clause AA.SD.1.7.5.

Maximum Permissible Pressure Differential After 5 minutes - HDPE/VLDPE

Material (mm)	Pressure Differential
1.0	28 kPa
1.5	21 kPa
2.0	14 kPa
2.5	14 kPa

At the conclusion of all pressure tests, the end of the air channel opposite the pressure gauge should be cut. A decrease in gauge pressure must be observed or the air channel will be considered "blocked" and the test will have to be repeated from the point of blockage. If the point of blockage cannot be found the air channel in the middle of the seam should be cut and each half treated as a separate test.

The pressure feed needle should be removed and the resulting hole sealed by extrusion welding.

Procedure for Non-Complying Air Pressure Test

In the event of a non-complying air pressure test the following procedure should be followed :

The seam end seals should be checked and seams re-tested.

If a seam will not maintain the specified pressure the seam should be visually inspected to localise the flaw.

If the seam passes the visual inspection the overlap left by the wedge welder should be removed and the entire length of seam should be vacuum tested in accordance with this Clause.

-If a leak is located by the vacuum test, it should be repaired by extrusion fillet welding. The repair should be tested by vacuum testing.

-If no leak is discovered by vacuum testing, the seam will be considered to have passed non-destructive testing.

If one or more peel specimens are in non-compliance, additional samples should be taken as described below.

-When two (2) passing samples are located, the length of seam bounded by the two (2) passing test locations will be considered non-complying. The overlap left by the wedge welder should be heat tacked in place along the entire length of seam and the non-complying portion of seam should be extrusion fillet welded.

-The entire length of the repaired seam should be tested by vacuum testing.

General Air Testing Procedures

The opposite end of the air channel should in all cases be pierced to ensure that no blockages of the air channel have occurred.

Whenever possible, seams should be air tested prior to completing butt seams to avoid having to cut into the liner.

All cuts through the liner, as a result of testing, should be repaired by extrusion welding.

All needle holes in air channels, within the boundaries of the active cell should be repaired with an extrusion bead.

Air Pressure Testing Documentation

All information regarding air pressure testing (date, initial time and pressure, final time and pressure, pass/fail designation, and technician's number) should be written on one end of the seam, or portion of seam tested. All of the above information will also be logged on a Non-destructive Testing Form.

SDDK 5.5.7 Vacuum Testing

This test is to be used on extrusion welds, or when the geometry of a fusion weld makes air pressure testing impossible or impractical, or when attempting to locate the precise location of a defect believed to exist after air pressure testing.

Equipment for Vacuum Testing

Vacuum box assembly consisting of a rigid housing with a soft neoprene gasket attached to the open bottom, a transparent viewing window, port hole or valve assembly, and a vacuum gauge.

Vacuum pump or Venturi assembly equipped with a pressure controller and pipe connection.

A rubber pressure/vacuum hose with fittings and connections.

A bucket and means to apply a soapy solution.

A soapy solution.

Procedure for Vacuum Testing

Any excess overlap should be trimmed from the seam.

The vacuum pump/compressor should be turned on to reduce the vacuum box to approximately 34 kPa gauge pressure.

A generous amount of a strong solution of liquid detergent and water should be applied to the area to be tested.

The vacuum box should be placed over the area to be tested and sufficient downward pressure applied to "seat" the seal strip against the liner.

The bleed valve should be closed and the vacuum valve opened.

A minimum of 34 kPa vacuum should be applied to the area as indicated by the gauge on the vacuum box. It should be ensured that a leak tight seal is created.

For a period of approximately 10 seconds the geomembrane should be examined through the viewing window for the presence of soap bubbles.

After this period the vacuum valve should be closed and the bleed valve opened, and the box should be moved over the adjoining next area with a minimum 75mm overlap and the process repeated.

Procedure for Non-Complying Test

All areas where soap bubbles appear should be marked and such areas repaired in accordance with Clause AA.SD.1.4.5.

Repaired areas should be re-tested.

General Vacuum Testing Procedures

Vacuum box testing should be performed only by qualified construction personnel.

Overlap must be trimmed prior to vacuum boxing all seams.

Special attention shall be exercised when vacuum testing "T" seams or patch intersections with seams.

Vacuum Testing Documentation

Vacuum testing crew should use permanent markers to write on liner indicating tester's ID number, date, and pass/fail designation on all areas tested.

Records of vacuum testing should be maintained by the CQC co-ordinator or testing crew on the Non-Destructive Testing Form as exhibited in **Annexure E**.

SDDK 5.5.8 Destructive Testing

Concept

The purpose of destructive testing is to determine and evaluate seam strength. These tests require direct sampling and thus subsequent patching. Therefore, destructive testing should be held to a minimum to reduce the amount of repairs to the Flexible Membrane Liner.

Procedure for Destructive Testing

Destructive test samples should be marked by the engineer or his representative and cut out randomly at a minimum average frequency of one (1) test location every 150m of seam length, unless otherwise specified or agreed.

Location of destructive samples will be selected by the Engineer or his representative with samples being cut by the staff of the Contractor.

Destructive samples should be taken and tested as soon as possible after the seams are welded (the same day), in order to receive test results in a timely manner.

Qualified personnel should observe all field destructive testing and record date, time, seam number, location and test results on an agreed Destructive Testing Form.

All destructive test locations with pass/fail designation will be marked on the liner with permanent markers.

Sample Size

The sample should be 300mm wide with a seam 400mm long centred lengthwise in the sample. The sample may be increased in size to accommodate independent laboratory testing by the Engineer or by specific Project Specifications.

A 25mm specimen shall be cut from each end of the test seam for field testing.

The two (2) 25mm wide specimens should be tested on a field tensiometer for peel strength. If either field specimen does not pass, it should be assumed the sample would also not pass specified destructive testing.

The procedure outlined above should be followed to locate passing samples for specified testing.

Procedure for Non-complying Destructive Test

Additional field samples should be cut out for peel testing. In the case of a field production seam, the samples should lie a minimum of 3m in each direction from the location of the initial non-complying sample. Perform a field test for peel strength. If these field samples pass, then full samples can be cut for specified testing.

If the full samples pass, then the seam between the two (2) passing sample locations should be repaired according to procedures detailed in Clause AA.SD.1.7.5.

If either of the samples are still in non-compliance then additional samples should be taken in accordance with the above procedure until two (2) passing samples are found to establish the zone in which the seam should be reconstructed.

All passing seams must be bounded by two (2) locations from which full samples passing specified destructive tests have been taken.

In cases of repaired seams exceeding 50m, a sample must be taken and pass destructive testing from within the zone in which the seam has been reconstructed. Each destructive test must be considered a seam.

All destructive seam samples should be numbered and recorded on the Destructive Test Form as exhibited in **Annexure E**.

SDDK 5.5.9 Specified Testing of Destructive Seam Samples

Full Destructive Seam Testing

Full destructive samples should be tested by the Contractor in the event that testing is not being performed by the Engineer. Full samples should be tested under appropriate condition on Site, unless the Engineer requests laboratory testing.

Destructive samples should be tested for "Shear Strength" and "Peel Adhesion". Five (5) specimen should be tested for each test method. Four (4) out of the five (5) specimens must exhibit FTB for each round of peel and shear testing.

SDDK 5.5.10 Defects and Repairs

The CQC co-ordinator should conduct a detailed walk through and visually check all seams and non-seam areas of the geomembrane for defects, holes, blisters and signs of damage during installation.

All other installation personnel shall, at all times be on the lookout for any damaged areas. Damaged areas shall be marked and repaired.

SDDK 5.5.11 Repair Procedures

Any portions of the geomembrane, or geomembrane seam, showing a flaw, or having a destructive test in non-compliance should be repaired. Several procedures exist for repair and the decision as to the appropriate repair procedure should be made by the Contractor in conjunction with the Engineer.

Procedures available for repair are to include the following :

Patching - used to repair large holes, tears. and destructive sample locations. All patches shall extend at least 75mm beyond the edges of the defect and all corners of patches shall be rounded.

Grounding and welding - used to repair sections of extruded fillet seams.

Spot Welding or Seaming - used to repair small tears, pinholes or other minor localised flaws.

Capping - used to repair lengths of extrusion or fusion welded seams.

Extrude overlap along the length of fusion welded seams.

Removal of a seam and replacement with a strip of new material seamed into place.

SDDK 5.5.12 Verification of Repairs

Every repair should be non-destructively tested. Repairs which pass the non-destructive test shall be deemed acceptable. Repairs in excess of 50m will require a destructive test. Non-destructive testing of repair shall be logged on Repair Report Form when specified, as exhibited in **Annexure E**.

SDDK 5.5.13 Construction Quality Assurance

The Engineer, or his representative, shall have full access to all test results carried out by the Contractor. In addition, he shall be entitled to be present whenever such test are carried out.

Should it be deemed necessary, additional tests may be called for by the Engineer and the Contractor shall give full co-operation in obtaining samples for such tests.

SDDK 5.6 SINGLE CUSPATED GEODRAIN

The finished surfaces of all works that will be in contact with the cuspated geodrain shall be free of all protrusions, stones, vegetation, roots, rubble, refuse and particles that could damage either type of liner. The surface shall be approved by the Engineer prior to any geodrain placement.

The geodrain shall be a manufactured product consisting of a single cuspated sheet with minimum uncompressed cuspate height of 3.6mm. The cuspated sheet is to be handled and installed as per manufacturer’s specifications.

SDDK 8 MEASUREMENT AND PAYMENT

SDDK 8.2 SCHEDULED ITEMS

SDDK 8.2.8 Geosynthetic Clay Liner (GCL)

The unit of measurement shall be the square metre (m^2) of slope area on which the GCL has been supplied and satisfactorily installed.

The tendered rate shall include full compensation for all materials, plant, labour and other incidentals required to supply and install the GCL, complete to the Engineer's satisfaction, including for keeping stockpiled and laid material secure until such time as the works are handed over. No additional payment will be made for any cutting, waste, placing, joining, overlapping, temporary anchoring or securing of material in position. The area measured shall be the plan area covered by the GCL and also the length in the anchor trench.

SDDK 8.2.9 Geomembrane

The unit of measurement shall be the square metre (m^2) of slope area on which the geomembrane has been supplied and satisfactorily installed.

The tendered rate shall include full compensation for all materials, plant, labour and other incidentals required to supply and install the geomembrane, complete to the Engineer's satisfaction, including for keeping stockpiled and laid material secure until such time as the works are handed over. No additional payment will be made for any cutting, waste, placing, joining, overlapping, temporary anchoring or securing of material in position. The area measured shall be the plan area covered by the geomembrane and also the length in the anchor trench.

SDDK 8.2.10 Single Cuspated Geodrain

The unit of measurement shall be the square metre (m^2) of slope area on which the geodrain has been supplied and satisfactorily installed.

The tendered rate shall include full compensation for all materials, plant, labour and other incidentals required to supply and install the geodrain, complete to the Engineer's satisfaction, including for keeping stockpiled and laid material secure until such time as the works are handed over. No additional payment will be made for any cutting, waste, placing, joining, overlapping, temporary anchoring or securing of material in position. The area measured shall be the plan area covered by the geomembrane and also the length in the anchor trench.

SDDM EARTHWORKS (ROADS, SUBGRADE)

SDDM 3 MATERIALS

SDDM 3.2 CLASSIFICATION FOR PLACING PURPOSES

SDDM 3.2.3 Selected layer

REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

"The following requirements shall apply in respect of the selected layer:

(a) Maximum particle size: 60% of compacted layer thickness

(b) Unstabilized selected layer

(i) Upper selected layer

Minimum CBR at 93% of modified AASHTO density: 15
Maximum PI: 12 (the Engineer has the right to alter this requirement to 3 x the grading modulus + 10)

(ii) Lower selected layer

Minimum CBR at 90% of modified AASHTO density: 7
Maximum PI: 12 (the Engineer has the right to alter this requirement to 3 x the grading modulus + 10)

(c) Stabilized selected layer

Minimum grading modulus of natural material: 0,75
UCS of stabilized material 300 kPa - 500 kPa at 93% of modified AASHTO density
Maximum PI for stabilized material: 10"

SDDM 5 CONSTRUCTION

SDDM 5.2 METHODS AND PROCEDURES

SDDM 5.2.2 Cut and borrow

SDDM 5.2.2.3 Use of material

ADD THE FOLLOWING PARAGRAPH:

"(e) Commercial sources

The provisions of subclause SDD 5.2.2.5 of SABS 1200 D as amended shall apply."

SDDM 5.2.2.6 Catchwater mounds and channels and mitre banks and channels

ADD THE FOLLOWING SENTENCE:

"Catchwater mounds and mitre banks shall be compacted to a minimum density of 90% of modified AASHTO density."

SDDM 5.2.3 Treatment of the road-bed

SDDM 5.2.3.2 Removal of unsuitable ground

REPLACE THE SECOND SENTENCE OF PARAGRAPH (a) WITH THE FOLLOWING:

"The excavated spaces shall then be backfilled with approved imported material compacted to the required density."

ADD THE FOLLOWING SENTENCE TO PARAGRAPH (b):

"Unsuitable excavated material will be paid for as cut to spoil."

SDDM 5.2.3.3 Treatment of road-bed

ADD THE FOLLOWING PARAGRAPH:

"(c) Three-pass roller compaction

Any portion of the roadbed that is shown on the Drawings or is specified or is directed by the Engineer to be given three-pass roller compaction because of its inadequate natural density, shall be prepared by shaping where necessary and compacting with a roller, complying with the requirements specified below.

Compaction shall comprise three complete coverages by the wheels of the specified roller over every portion of the area that is being compacted. While it is not the intention that the Contractor should apply water to the roadbed for this type of compaction, and while no rigid moisture control will be exercised during compaction, the Contractor shall nevertheless satisfy the Engineer that everything is being done to take full advantage of favourable soil moisture conditions during the rainy season, and that such compaction is as far as possible carried out when the roadbed is neither excessively dry nor excessively wet.

The Engineer has the authority to decide when conditions are favourable for compaction and where such compaction is to be carried out at any particular time, and he has the right to instruct the Contractor to water the roadbed at the Contractor's expense when, in the opinion of the Engineer, the Contractor failed, neglected or refused to comply with these requirements.

The rollers to be used for roller-pass compaction shall conform to the following requirements:

Grid roller: The grid roller shall have a mass of not less than 13,5 t when ballasted, shall be loaded to this mass if required, and shall be moved at a speed of not less than 12 km/h.

Vibratory roller: The vibratory roller shall be capable of exerting a combined static and dynamic force of not less than 120 kN/m width for every metre of loose-layer thickness at an operating frequency not exceeding 25 Hz and shall move at a speed not exceeding 4 km/h."

SDDM 5.2.4 Fill

SDDM 5.2.4.3 Finishing

(e) Topsoiling

REPLACE THE SECOND SENTENCE WITH THE FOLLOWING:

"The thickness of the topsoil shall be as directed by the Engineer."

SDDM 5.2.5 Selected layer

REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

"Except with regard to density, the requirements of subclause 5.2.4 shall apply. The degree of compaction shall be:

Upper selected* : 93% of modified AASHTO density

Lower selected* : 90% of modified AASHTO density."

SDDM 5.2.6 Gravel surfacing

REPLACE THE THIRD SENTENCE OF THIS SUBCLAUSE WITH THE FOLLOWING:

"The relevant requirements in subsubclause 5.2.4.2 shall apply, except that the material shall be compacted to 93% of modified AASHTO density."

SDDM 5.2.8 Transport

REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

"The provisions of subclause SDD 5.2.5 of SABS 1200 D, as amended, shall apply."

SDDM 7 TESTING

SDDM 7.3 ROUTINE INSPECTION AND TESTING

REPLACE TABLE 2 AND THE CONTENTS OF SUBCLAUSE 7.3.2 WITH THE FOLLOWING:

"SDDM 7.3.2 The dry density requirements for a particular lot of selected layer or wearing course shall be deemed to be satisfied if the average density and the results of individual tests meet the requirements specified in table 2 below. Refer to subclause SDD 7.2 for the requirements for fill.

TABLE 2 - DENSITIES

1	2	3	4	5
Layer	Specified density (% of modified AASHTO density)	Number of tests per lot	Average density, %	Minimum density for any single test, %
Upper selected*****	93	3 and 4 5 6	93,1 93,4 93,6	89,4 89,2 89,0
Lower selected layer*****	90	3 and 4 5 6	90,1 90,4 90,6	86,4 86,2 86,0

"

SDDM 8 MEASUREMENT AND PAYMENT

SDDM 8.2 COMPUTATION OF QUANTITIES

REPLACE SUBCLAUSES 8.2.1 TO 8.2.3 (INCLUSIVE) WITH THE FOLLOWING:

"SDDM 8.2.1 The provisions of subclause 8.2.1 of SABS 1200 D shall apply.

SDDM 8.2.2 The provisions of subclause 8.2.2 of SABS 1200 D shall apply.

SDDM 8.2.3 The provisions of subclause 8.2.2 of SABS 1200 D shall apply."

SDDM 8.2.5 Verifying quantities

REPLACE THE FIRST SENTENCE WITH THE FOLLOWING:

"Before any earthworks are commenced but after completion of any site preparation, the Engineer will, upon a written request from the Contractor, provide cross-sections for the purpose of measurement of earthworks quantities."

SDDM 8.3 SCHEDULED ITEMS

SDDM 8.3.3 Treatment of roadbed

(a) Roadbed preparation and compaction of material to

ADD THE FOLLOWING:

"The unit of measurement shall be the cubic metre of material recompacted as specified and the volume shall be determined from levelled cross-sections on which are superimposed the levels to which the roadbed is to be constructed. When material is imported to make up the required volume, such material will be paid for as cut or borrow to fill as relevant."

ADD THE FOLLOWING:

"(c) Three-pass roller compaction:

(i) Grid roller Unit: m²

(ii) Vibratory roller Unit: m²

The units of measurement shall be the square metre of roadbed compacted as specified in subclause SDDM 5.2.3.3(c) for the areas designated by the Engineer.

The tendered rates shall include full compensation for shaping the areas, providing the rollers and compacting the roadbed by means of three roller passes over the entire area."

SDDM 8.3.4 Cut to fill, borrow to fill

REPLACE THE LAST SENTENCE OF THIS ITEM WITH THE FOLLOWING:

"The unit of measurement shall be the cubic metre of fill and the volume will be calculated in accordance with the authorised dimensions of the embankment and levelled cross-sections.

The tendered rates shall include full compensation for excavating the material as if in soft material, for selecting, loading, transporting for the free-haul distance, off-loading, watering, mixing and compacting the material as specified. Borrow to fill in this item relates to material from designated borrow areas (provided by the Employer).

Where it is required that material be obtained from commercial sources, payment for procuring the material will be made under item SDDM 8.3.17."

SDDM 8.3.5 Selected layer compacted to 93% of modified AASHTO maximum density

REPLACE THE HEADING AND THE CONTENTS OF THIS ITEM WITH THE FOLLOWING:

"SDDM 8.3.5 Selected layer using material from designated borrow pits or excavation:

(a) Compacted to 90% of modified AASHTO density Unit: m³

(b) Compacted to 93% of modified AASHTO density Unit: m³

The unit of measurement shall be the cubic metre and the quantity will be calculated from the authorised dimensions of the compacted layer.

The tendered rates shall include full compensation for excavating the material as if in soft material for loading, transporting for the free-haul distance, off-loading, spreading, watering, mixing, breaking down and compacting the layer."

SDDM 8.3.6 Extra over items 8.3.4 and 8.3.5 for excavating and breaking down material in

REPLACE THE HEADING OF THIS ITEM WITH THE FOLLOWING:

"SDDM 8.3.6 Extra over items 8.3.4, 8.3.5 and 8.3.16 for excavating and breaking down material in"

REPLACE THE WORDS "items 8.3.4 and 8.3.5*" WITH THE WORDS "*items 8.3.4, 8.3.5 and 8.3.16".

SDDM 8.3.7 Cut to spoil or stockpile from

REPLACE THE HEADING WITH THE FOLLOWING:

"SDDM 8.3.7 Cut to spoil from"

SDDM 8.3.12 Overhaul

REPLACE THIS ITEM WITH THE FOLLOWING:

"SDDM 8.3.12 Overhaul

Delete this item as no overhaul will be paid on material for the purposes of this Contract and all the costs for transporting material shall be included in the applicable tendered rates and amounts.

ADD THE FOLLOWING ITEMS:

SDDM 8.3.14 Borrow pits

REPLACE THE CONTENTS OF THIS ITEM AS FOLLOWS:

"(a) Opening up and closing down of borrow pit Unit: Sum

(b) Dealing with overburden Unit: m³

The provisions of subclauses 8.3.4(b) and 8.3.4(c) of SABS 1200 D shall apply respectively to items (a) and (b) above."

SDDM 8.3.16 Gravel surface layer

REPLACE THE CONTENTS OF THIS ITEM WITH THE FOLLOWING:

"The unit of measurement shall be the cubic metre of gravel surface layer and the quantity will be determined from the authorised dimensions of the compacted layer.

The tendered rate shall include full compensation for excavating the material as if in soft material, for loading and transporting the material for the free-haul distance, off-loading, spreading, breaking down, watering, mixing and compacting the material."

ADD THE FOLLOWING ITEMS:

"SDDM 8.3.17 Extra over items 8.3.4, 8.3.5 and 8.3.16 for obtaining material from commercial sources Unit: m^3

The tendered rate shall include full compensation for the additional cost of finding a suitable source of material, for procuring the material and paying all royalties or other charges to the owner of the source, for transporting the material to the point of use regardless of the distance hauled and for excavating in intermediate, hard or boulder material as required.

Items SDDM 8.3.6, SDDM 8.3.12 and SDDM 8.3.14 do not apply to material obtained from commercial sources.

SDDM 8.3.18 Final finishing and cleaning up of the site of the works Unit: sum

The tendered sum shall include full compensation for the clearing, disposal of material, finishing, tidying and all other work required to finish and clean up the Site of the works and affected areas by removing excess earth, stones, boulders, debris and other waste material, by clearing stormwater inlets and outlets and pipe barrels, by clearing the surfacing of all dirt, mud and foreign material, and by neatly finishing off all junctions, intersections and kerbing.

All material resulting from the finishing operations shall be disposed of to a spoil site furnished by the Contractor.

The tendered rate shall make provision for the reinstatement of existing driveways to their original condition where these have been affected by the works, as these items will not be measured and paid for separately.

SDDM 8.3.19 Sidewalks:

(a) Fill compacted to 90% of modified AASHTO density and obtained from:

(i) Designated borrow pits Unit: m³

(ii) Commercial sources Unit: m³

(iii) Excavations Unit: m³

(b) In-situ material scarified to a depth of 150 mm and compacted to 90% of modified AASHTO density ..... Unit: m³

(c) Excavated material removed to spoil Unit: m³

The tendered rates shall include full compensation for constructing the sidewalks to the profiles indicated either on the Drawings or by the Engineer, for working in restricted areas, for using material classified as soft material with a maximum particle size of 60 mm, and for carrying out the work in accordance with the Specifications.

SDDM 8.3.20 Variations in the number of roller passes (applicable to sub-subitem 8.3.3(c)):

(a) Vibratory rollers Unit: m²-pass

(b) Oscillatory rollers Unit: m²-pass

(c) Grid rollers Unit: m²-pass

(d) Tamping rollers Unit: m²-pass

(e) Impact rollers Unit: m²-pass

(f) Pneumatic-tyred rollers Unit: m²-pass

The unit of measurement shall be the square-metre coverage, and shall be computed by multiplying the number of square metres to which the changed pass efforts apply by the increased or decreased number of roller passes.

Where a change in the compaction effort is requested, the Contractor will be compensated at the tendered rates for the above items in respect of the increased number of square-metre roller passes of each type of roller required over and above that specified in the relevant standard effort. His compensation will be decreased simultaneously, at the applicable rates, by the number of square-metre roller passes of each type of roller which is either decreased or completely left out.

The tendered rate for each additional square metre-pass ordered by the Engineer over and above the specified number of passes, shall include full compensation for all supervision, labour, plant, equipment, fuel, materials, work and incidentals necessary for completing the work. The same rates shall be accepted by the Contractor during computation of a decrease in his compensation where the number of roller passes for each specific type of roller is decreased."

SDEMA ENVIRONMENTAL MANAGEMENT (BASIC)

SDEMA 1 SCOPE

The general principles contained within the Specification EMA shall apply to all construction activities. All construction activities shall observe any relevant environmental legislation and in so doing shall be undertaken in such a manner as to minimise impacts on the natural and social environment.

SDEMA 4 REQUIREMENTS

SDEMA 4.1 MATERIALS

SDEMA 4.1.1 Materials handling, use and storage

ADD THE FOLLOWING PARAGRAPH TO SUBCLAUSE 4.1.1:

"The Engineer shall be advised of the areas that the Contractor intends to use for the stockpiling of both natural and manufactured materials. No stockpiling shall occur prior to the Engineer's approval of the proposed stockpiling areas."

SDEMA 4.2 PLANT

SDEMA 4.2.2 Solid waste management

ADD THE FOLLOWING PARAGRAPH TO SUBCLAUSE 4.2.2:

"The Contractor shall prevent any littering on site and ensure that staff disposes of all litter (including leftover foodstuff) in the bins provided. All bins shall be weather- and scavenger-proof."

SDEMA 4.3 METHODS AND PROCEDURES

SDEMA 4.3.15 Dust

ADD THE FOLLOWING SENTENCE TO SUBCLAUSE 4.3.15:

"Vehicle speeds should not exceed 20 km/h on dirt roads or when traversing unconsolidated or non-vegetated areas."

SDEMA 5 COMPLIANCE WITH REQUIREMENTS AND PENALTIES

SDEMA 5.2 PENALTIES

REPLACE THE CONTENTS OF SUBCLAUSE 5.2 WITH THE FOLLOWING:

"Penalties will be issued for the transgressions listed below. Penalties may be issued per incident at the discretion of the Engineer. Such penalties will be issued in addition to any remedial costs incurred as a result of non-compliance with the environmental specifications. The Engineer will inform the Contractor of the contravention and the amount of the fine, and will deduct the amount from monies due under the Contract.

Fines for the activities detailed below, will be imposed by the Engineer on the Contractor.

a)	Litter on site associated with construction activities.	R 500
b)	Deliberate lighting of fires on site.	R 2 000
c)	Employees urinating or defecating anywhere on site other than the site ablution facilities.	R 500

For each subsequent similar offence the fine will be doubled in value to a maximum value of R 15 000.

The Engineer shall be the judge as to what constitutes a transgression in terms of this clause, subject to

the provisions of Clause 57.1 of the General Conditions of Contract. In the event that transgressions continue the Contractor's attention is drawn to the provisions of Subclauses 21 and 55.1.5 of the General Conditions of Contract under which the Engineer may remove an individual from site or may terminate the Contract."

SDG CONCRETE

SDG 3 MATERIALS

SDG 3.2 CEMENT

SDG 3.2.2 Alternative types of cement

REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

"Only CEM I 42,5 (Portland cement) or CEM II/A-V 42,5 (Portland fly ash cement) according to (SANS 50197-1), may be used. The cement may not consist of more than 20% siliceous fly ash blended with the OPC (Ordinary Portland Cement). Should the Contractor wish to use any other type of cement, he shall obtain the Engineer's prior written approval (see 8.1.3.2 and 8.1.3.3)."

SDG 3.2.3 Storage of cement

ADD THE FOLLOWING:

"Cement shall not be stored for longer than 12 weeks without the Engineer's permission."

SDG 3.4 AGGREGATES

SDG 3.4.3 Storage of aggregates

ADD THE FOLLOWING:

"When aggregates of different chloride content are stored on the site, their use in the various classes of concrete shall be strictly controlled."

ADD THE FOLLOWING SUB-SUBCLAUSE:

"SDG 3.4.4 Aggregate of dolomitic origin

Aggregates for structural concrete shall be of dolomitic origin. The quantity of insoluble matter in respect of concrete made with aggregates of dolomitic origin, determined according to the method described in SABS 677, Appendix B, shall not be more than 15%."

ADD THE FOLLOWING SUBCLAUSES:

"SDG 3.9 WATERSTOPS

PVC waterstops shall comply with the requirements of CKS 389.

SDG 3.10 ROOFING FELT

Three-ply roofing felt shall comply with the requirements of SABS 92 for type 40 felt.

SDG 3.11 BUTYL RUBBER OR POLYMER SEALING STRIPS

The dimensions of the sealing strip for use in the structures are shown on the drawings. The strips shall be permanently bonded to the prepared concrete surface in accordance with the manufacturer's specifications.

The strip shall have a breaking elongation of not less than 300% and a tensile strength of not less than 4 MPa as per manufacturer's specification.

The completed joint shall be guaranteed 100% watertight and resistant to the long-term effects of the retained aqueous liquid.

SDG 3.12 LAMINATED BUTYL RUBBER OR POLYMER WATERPROOFING STRIPS

3 mm thick laminated butyl rubber OR 2 mm thick polymer strips shall be permanently fixed to the concrete where shown on the drawings.

The preparation of the concrete surface, the installation of bond breakers and aluminium backing strips, the fixing of the laminated butyl rubber or polymer waterproofing strip with an approved epoxy adhesive as specified by the particular manufacturer and the forming of lapped joints shall all be done according to the manufacturer's specifications to provide a watertight joint."

SDG 5 CONSTRUCTION

SDG 5.1 REINFORCEMENT

SDG 5.1.2 Fixing

ADD THE FOLLOWING:

"The Engineer will inspect the reinforcing after it has been fixed in place, the formwork has been cleaned, cover blocks have been positioned, and before concreting commences.

Welding of reinforcing steel will not be permitted."

SDG 5.1.3 Cover

ADD THE FOLLOWING:

"The distance between the outer surface of the concrete and the reinforcing steel shall nowhere be less than 40 mm or 5 mm plus the maximum size of the coarse aggregate, whichever is the largest, unless otherwise specified on the drawings."

SDG 5.2 FORMWORK

SDG 5.2.1 Classification of finishes

(c) Special

ADD THE FOLLOWING:

"This finish is obtained by first giving the surface a smooth finish with the joints between formwork panels forming an approved regular pattern suitable for the appearance of the structure. All projections shall then be removed, irregularities repaired and the surface rubbed or otherwise treated until it is smooth with an even texture, appearance and colour.

If the finish of exposed surfaces does not comply with the requirements for uniformity of the texture and appearance, the Contractor shall, when instructed to do so by the Engineer, rub down the exposed surfaces of the entire structure or any part thereof as specified below, entirely at his own cost. All repairs must be completed before the rubbing commences.

The surface shall be saturated with water for at least one hour. The initial rubbing of the face shall be carried out with a medium coarse carborundum stone together with a small amount of mortar of the same cement/sand ratio as the concrete being repaired. Rubbing shall continue until all form marks, projections and irregularities have been removed and a uniform surface has been obtained. The paste produced by the rubbing shall be kept in place. The final rubbing shall be carried out with a fine carborundum stone and water. This rubbing shall continue until the entire surface has a smooth, even texture and is uniform in colour. The surface shall subsequently be washed with a brush to remove surplus paste and powder."

SDG 5.2.5 Removal of formwork

ADD THE FOLLOWING SUBCLAUSE:

"SDG 5.2.5.6 The Contractor shall make provision for the continued support of beams and slabs while the formwork is being removed and/or for back propping of beams and slabs."

SDG 5.3 HOLES, CHASES AND FIXING BLOCKS

ADD THE FOLLOWING:

"Cover blocks for reinforcing and fixtures may be placed into the concrete provided that neither the strength nor any other desirable characteristic (such as the appearance) of the concrete section is affected or impaired in the opinion of the Engineer.

SDG 5.5 CONCRETE

SDG 5.5.1 Quality

SDG 5.5.1.5 Durability

The exposure conditions of the concrete are classified as "severe".

SDG 5.5.3 Mixing

SDG 5.5.3.2 Ready-mixed concrete

ADD THE FOLLOWING:

"Ready-mixed concrete may be used on the Site. The Contractor shall take samples for testing from every load delivered to the Site."

SDG 5.5.7 Construction joints

ADD THE FOLLOWING:

"Horizontal construction joints are permitted in structure walls in positions indicated on the drawings or approved by the Engineer. Vertical construction joints in the walls are subject to the written approval of the Engineer and the cost of all such vertical or horizontal construction joints will be deemed to be included in the rates for cast-in-situ concrete. This also applies to the preparation of concrete to form construction joints in flume walls as specified on the drawings.

Should the Contractor's method of construction necessitate the placing of a construction or other joint in a position not shown on the drawings, such method of construction and position of the joint shall be approved by the Engineer in writing. The cost of such joint shall be included in the tendered rates and shall include scabbling of the concrete where steel reinforcement is continuous.

The walls shall be cast in lifts of a height that permits each lift to be poured without interruption in one continuous operation during normal working hours.

SDG 5.5.8 Curing and protection

"The curing methods of retaining the formwork in place or covering with a waterproof membrane are strongly recommended. Concrete will not be paid for unless properly cured and proof of curing is continuously visible on site."

SDG 5.5.10 Concrete surfaces

ADD THE FOLLOWING:

"5.5.10.4 Where the surfaces of the concrete are to be additionally hardened or protected, the positions of such surfaces and the method to be used will be shown on the drawings and will be scheduled. Materials or products with a ferrous content will not be allowed.

(a) Surface of floor slab below screed

The top surface of the floor slab is to have a finish which is rough enough for bonding of the screed. This finish and the preparation thereof is to be discussed with the Engineer before the floor slab is cast.

All laitance on the surface of the slab must be removed completely to expose the course aggregate by means of scrabblers, abrasive blasters, hard brooms or a high pressure water jet, immediately after concrete has set.

All joints shall be sealed in the manner shown on the drawings. All dust, debris, etc. must be removed immediately prior to the application of the bonding agent and screed.

(b) Materials

Only ordinary Portland cement shall be used.

Coarse aggregate maximum size: 19 mm
28-day cube strength: 30 MPa.

A plasticizer approved by the Engineer shall be used to reduce the water content of the mix to an absolute workable minimum.

The mix design shall be submitted to the Engineer for approval.

(c) Placing of screed

All surface water shall be removed after which Fosroc Nitobond EP slowset bonding agent or similar approved shall be applied strictly according to the manufacturer's specifications. The screed shall be placed according to the recommendations and/or specifications of the manufacturer of the bonding agent.

The screed shall be placed, spread and compacted in one layer and care shall be taken to obtain maximum compaction. After the screed has been compacted and before the surface is power floated, angle irons fixed to the mechanical equipment shall be used to finish off the screed to the correct levels.

Power floating shall not commence until such time as the screed surface has lost its sheen and barely shows footprints. All laitance on the surface of the screed resulting from compaction shall be struck off prior to power floating. Too much floating causing excessive cement-water paste to surface, shall be avoided.

Curing shall commence as soon as finishing operations have been completed and shall be continued for at least 7 days. The method of curing shall be by means of a peripheral pipe directly next to the inside face of the wall with water running down the slope of the floor to the centre cone. This shall be discussed with the Engineer. Any alternative curing method must be submitted to the Engineer for approval.

(d) Joints

The joints in screeds shall be constructed according to the details shown on the drawings and must in all cases be aligned with the joints in the floor slab below.

(e) Surface finish of screeds

The finishing-off of the screed shall be done in conjunction with the mechanical contractor to ensure that the surface fits the mechanical equipment. The maximum allowable deviation of the floor from the design

level is ± 3 mm."

SDG 5.5.16 Brickwork

Brickwork shall be carried out as specified for manholes in subclause 5.6.4 of 1200 LD using bricks conforming to the requirements for bricks in subclause 3.5.1 of 1200 LD.

SDG 5.5.17 Plasterwork

Plasterwork shall consist of a single coat, comprising one application of a 1:6 cement:sand mixture with a woodfloat finish. The thickness of the plaster shall be between 13 and 25 mm. All plaster shall be finished smooth, shall be plumb and corners shall be rounded and square.

SDG 6 TOLERANCES

SDG 6.2 PERMISSIBLE DEVIATIONS

SDG 6.2.3 Specified permissible deviations

ADD THE FOLLOWING:

"Degree-of-accuracy II is applicable.

Every specified permissible deviation is binding in itself. The cumulative effect of permissible deviations will not be considered. The maximum permissible vertical deviation is subject to the other permissible deviations."

REPLACE SUBCLAUSE 6.2.3(d)(5) WITH THE FOLLOWING:

	Permissible deviation		
	Degree of accuracy		
	III	II	I
	mm	mm	mm
"Vertically, per metre of height	5	3	2
subject to a maximum of	50	30	10

SDG 7 TESTS

SDG 7.1 FACILITIES AND FREQUENCY OF SAMPLING

SDG 7.1.1 Facilities

ADD THE FOLLOWING:

"The Contractor shall provide sufficient storage capacity for the concrete cubes and shall arrange to have them tested by an approved laboratory.

The cost of all testing, including the cost of sampling, storage and transport of samples shall be included in the rates tendered for."

SDG 7.3 ACCEPTANCE CRITERIA FOR STRENGTH CONCRETE

ADD THE FOLLOWING:

"Test results obtained from the supplier of ready-mixed concrete will not be accepted for evaluation in terms of subclause 7.3, but samples for testing shall be taken of such concrete at the point of placing."

SDG 8 MEASUREMENT AND PAYMENT

SDG 8 MEASUREMENT AND PAYMENT

SDG 8.1 MEASUREMENT AND RATES

SDG 8.1.1 Formwork

DELETE "or splays over 20 mm x 20 mm" *FROM THE FIRST LINE OF PARAGRAPH 8.1.1.2.*

ADD THE FOLLOWING TO PARAGRAPH 8.1.1.2:

"Splays up to and including 25 mm x 25 mm will not be measured separately and will be deemed to be included in the formwork costs."

ADD THE FOLLOWING PARAGRAPHS:

"8.1.1.7 For construction joints at kickers, all additional costs for formwork to edges up to 300 mm high will be deemed to be included in the rates tendered for vertical formwork to sides of walls and will not be measured separately in narrow widths.

8.1.1.8 No formwork will be measured to edges of blinding layers under structures, and the cost thereof (if needed) will be deemed to be included in the rates tendered for concrete in blinding layers.

8.1.1.9 Back-shuttering or formwork to top revealed surfaces of sloping or conical formwork will only be measured to surfaces of over 40° and up to 85° to the horizontal.

8.1.1.10 Formwork to horizontal surfaces in pump stations, valve chambers, manholes or sumps can either be removed through the manhole cover opening or the Contractor may use permanent formwork at his own cost as no claims in this regard will be considered."

SDG 8.1.2 Reinforcement

REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

"The unit of measurement for steel bars shall be the ton of reinforcement in place, in accordance with the drawings or as authorised by the Engineer.

The unit of measurement for welded steel fabric shall be the kilogram of fabric reinforcement in place, and the quantity shall be calculated from the net area covered by the mesh, excluding overlaps.

Clips, ties, separators, stools and other steel used for positioning reinforcement will not be measured, unless these are shown on the bending schedules.

The tendered rate shall include full compensation for the supply, delivery, cutting, bending, welding, placing and fixing of the steel reinforcement, including all tying wire, stools, supports and waste."

SDG 8.1.3 Concrete

Delete ", or the plan size of the excavation where additional excavation is provided to facilitate erection of forms" from the second line of paragraph 8.1.3.1(c).

SDG 8.4 SCHEDULED CONCRETE ITEMS

SDG 8.4.3 Strength concrete

ADD THE FOLLOWING AFTER THE LAST SENTENCE:

"In the case of structural floor screeds, the unit of measurement shall be the square metre and the average thickness and proportions will be stated."

REPLACE "Unit: m^3" *WITH* "Unit: m^3, m^2"

SDG 8.4.4 Unformed surface finishes

(b) Steel-floated finishes

ADD THE FOLLOWING SUBITEM:

"(i) Extra over subitem (b) for special finishing tolerances to top of outside ring walls as specified Unit: m^2

The quoted rate shall include full compensation for the additional cost of finishing the ringwalls to closer tolerances as specified on the drawings and in clause SDG 6.2.3 (i)."

REPLACE ITEM 8.4.5 WITH THE FOLLOWING:

"SDG 8.4.5 Extra over subitems 8.4.2 and 8.4.3 for aggregate of dolomitic origin in concrete mixes

(a) Coarse aggregate in:

(i) (Class of concrete stated) Unit: m^3

(ii) Etc for other classes of concrete

(b) Fine aggregate in:

(i) (Class of concrete stated) Unit: m^3

(ii) Etc for other classes of concrete

The unit of measurement shall be the cubic metre of concrete containing the dolomitic aggregate.

The tendered rates shall include full compensation for any additional expense for using aggregate of dolomitic origin."

SDG 8.5 JOINTS

REPLACE "Unit: m" *with* "Unit: m or m^2".

ADD THE FOLLOWING:

SDG 8.9 BRICKWORK (state class) Unit: m^2

Separate items will be scheduled for brickwork of different thicknesses.

The unit of measurement shall be the net area (on elevations) of brickwork constructed to the specified thickness, measured in square metres.

The tendered rate shall include full compensation for constructing the brickwork as specified including the provision of all materials and cleaning up on completion of the work.

SDG 8.10 PLASTERWORK

(a) Plaster (state thickness) Unit: m² Unit: m²

(b) Fillets, skirtings, etc (state dimensions) Unit: m

The unit of measurement for subitem (a) shall be the net area of plasterwork constructed to the specified thickness, measured in square metres, or for subitem (b) the net length of corner fillets, skirtings, etc constructed to the specified dimensions, measured in linear metres.

The tendered rate shall include full compensation for constructing the plasterwork including rounded corners, the supply of all materials, mixing, applying, finishing and all else that may be required to complete the work as specified.

SDG 8.11 SCREEDS

(a) Floor screeds (1:3) with falls including V-joints to form panels and a smooth steel-trowelled finish/power float finish to top:

(i) Description of application and thickness Unit m²

(ii) Etc for other applications and thicknesses

The unit of measurement shall be the square metre of screeds constructed.

The tendered rate shall include full compensation for constructing the screeds as specified including supplying of all materials, preparing the concrete surface to receive the screeds and for all else that may be necessary to complete the work.

SDG 8.12 EPOXY-BASED BONDING AGENT AND PRIMER TO PREPARED CONCRETE FLOORS TO RECEIVE SCREEDING (FOSROC NITOBOND EP SLOWSET OR EQUIVALENT, APPROVED) Unit: m²

The unit of measurement shall be the square metre bonding agent applied.

The tendered rate shall include full compensation for preparing the concrete floor and for applying the agent both in strict accordance with the manufacturer's specification.

SDGA CONCRETE (SMALL WORKS)

SDGA 3 MATERIALS

SDGA 3.2 CEMENT

SDGA 3.2.1 Applicable Specifications

REPLACE THE CONTENTS OF SUBCLAUSE 3.2.1 WITH THE FOLLOWING:

“All cement used in the works shall be Portland cement CEM I of strength Class 42,5 complying with SANS 50197-1."

SDGA 3.2.2 Storage of Cement

ADD THE FOLLOWING TO SUBCLAUSE 3.2.2:

“Cement shall be used in the order in which it is received. Unless approved by the Engineer, cement kept in storage for longer than 8 weeks shall not be used in the Works. All cement that contains lumps that cannot easily be crumbled to powder between the fingers shall not be used."

Subtle

SDGA 3.4 AGGREGATE

SDGA 3.4.1 Applicable Specifications

ADD THE FOLLOWING TO SUBCLAUSE 3.4.1:

“The nominal stone size specified in the concrete grade (e.g. 30 MPa/40 mm) shall mean stone conforming to the grading specified in SANS 1083 for the nearest equivalent size, e.g. 40 mm means stone that complies with SANS 1083 for 37,5 mm size."

SDGA 6 TOLERANCES

SDGA 6.4 PERMISSIBLE DEVIATIONS

IN SUBCLAUSE 6.4, REPLACE THE WORD “5” IN THE COLUMN LABELLED “Degree of Accuracy II” FOR SUB-POINT (6)(ii) WITH “3”

ADD THE FOLLOWING TO SUBCLAUSE 6.4:

“The allowable tolerances shall be in accordance with Degree of Accuracy II.”

SDGA 8 MEASUREMENT AND PAYMENT

SDGA 8.1 MEASUREMENT AND RATES

SDGA 8.1.1 Formwork

REPLACE THE CONTENTS OF SUBCLAUSE 8.1.1 WITH THE FOLLOWING:

“The rates for items which require formwork shall cover the cost of the formwork, including all necessary materials, supports, labour and plant necessary to erect and strike such formwork."

SDGA 8.1.2 Reinforcement

REPLACE THE CONTENTS OF SUBCLAUSE 8.1.2 WITH THE FOLLOWING:

“The rates for items which require reinforcing shall cover the cost of the reinforcing, including all necessary materials, bending, cutting, placing, binding, waste, spacing, supporting, labour and plant necessary to erect such reinforcing."

SDGA 8.1.3 Concrete

REPLACE THE CONTENTS OF SUBCLAUSE 8.1.3 WITH THE FOLLOWING:

“The rates for items which require concrete shall cover the cost of the concrete, including all necessary materials, labour and plant necessary to cast such concrete."

SDGA 8.2 SCHEDULED FORMWORK ITEMS

SDGA 8.2.4 Box Out Holes/Form Voids

REPLACE THE CONTENTS OF SUBCLAUSE 8.2.4 WITH THE FOLLOWING:

“No payment will be made for "Box out holes/form voids" where such operations are preferred for the building in of pipes or specials by the Contractor. The rates for items which include box-outs shall cover the cost of boxing out the holes."

SDGA 8.4 SCHEDULED CONCRETE ITEMS

SDGA 8.4.1 Prescribed Mix Concrete

REPLACE THE TABLE IN SUBCLAUSE 8.4.1 WITH THE FOLLOWING TABLE:

“Table: Prescribed mix concrete proportions:

Grade	By mass			By volume		
	Cement	Sand	Stone	Cement	Sand+	Stone
25	1	2,5	3,2	1 bag$	0,09 m^3	0,11 m^3
20	1	2,9	3,6	1 bag$	0,11 m^3	0,13 m^3
15	1	3,6	4,2	1 bag$	0,14 m^3	0,15 m^3
10	1	4,5	5,0	1 bag$	0,17 m^3	0,17 m^3

+ Assuming 5% moisture in sand
$ bag = 50 kg”

SDL MEDIUM-PRESSURE PIPELINES

SDL 3 MATERIAL

SDL 3.1 GENERAL

ADD THE FOLLOWING PARAGRAPHS TO SUBCLAUSE 3.1:

"Each type of pipe delivered to the Site shall be of a standard length corresponding to the standard lengths offered by the pipe manufacturer in his catalogue, with a maximum permissible variation in length of ± 2%.

A pipe that is shorter or longer than the defined standard will be rejected by the Engineer, except when such non-standard lengths are required in terms of the Contract and have been specifically manufactured or cut as such by the pipe manufacturer or supplier.

SDL 3.1.1 Storage of couplings and fittings and stacking

The Contractor shall provide adequate storage facilities for pipes, couplings and specials to conform with the following:

(a) Couplings and specials

Until required for use, the rubber rings shall be stored in a cool, dark place, away from grease, oil or harmful chemicals. If rubber rings have been tied, they shall be separated a few days before they are required for use in order to eliminate minor impressions which the ties may have caused.

(b) Stacking of pipes and specials

Pipes and specials may be strung out alongside the position installed. The pipes shall be stored off the ground to prevent damage to them. When stacking is necessary, the Contractor shall make the necessary arrangements for stacking areas and shall stack as recommended by the manufacturer.

(c) Valves

All valves shall be stored under cover and shall be stacked off the ground in a manner which will prevent the ingress of dirt and ensure that the valves faces are not damaged.”

SDL 3.4 STEEL PIPES, FITTINGS AND SPECIALS

SDL 3.4.3 Pipes of nominal bore up to 150 mm

ADD THE FOLLOWING TO SUBCLAUSE 3.4.3:

Where flanges are required they shall comply with SANS 1123 table 1000 unless otherwise indicated on the Drawings."

SDL 3.4.4 Fittings and Specials

ADD THE FOLLOWING TO SUBCLAUSE 3.4.4:

"The dimensions of the steel specials and fittings shall comply strictly with the details shown on the drawings. All specials shall be suitable for a minimum working pressure of 1,0 MPa.

Standard specials such as tees, flange adaptors, reducers, etc. for PVC-u pipelines shall be fabricated from cast iron (CI). Unless shown on the drawings, all bends shall be PVC-u."

SDL 3.7 OTHER TYPES OF PIPES

SDL 3.7.1 PVC-u pipes

ADD THE FOLLOWING:

"Pipes for watermains shall be PVC-u Class 9 pipes complying with the requirements of SANS 966 Part 1."

SDL 3.8.2 FLEXIBLE COUPLINGS

ADD THE FOLLOWING AT THE BEGINNING OF SUBCLAUSE 3.8.2:

"Where flexibility is required on pipelines as shown on the drawings, “Klamflex” couplings and “Klamflex” flange adaptor couplings have been specified. Corrosion protection shall be in accordance with the requirements of subclause 3.9.2.2 (b) (1).

In certain instances “slip-on” couplings may be required. These couplings shall only be used when instructed by the Engineer in writing or where the use of such couplings is shown on the drawings. Where the Contractor elects to use “slip-on” couplings for convenience, he shall allow for the cost of such couplings in the rates tendered for pipework.

ADD THE FOLLOWING NEW SUBCLAUSE AFTER SUBCLAUSE 3.11:

"SDL 3.12 MARKING OF ITEMS

All items delivered on Site shall be clearly marked showing the following:

(a) Nominal diameter,

(b) Class of pipe,

(c) Date of manufacture, and

(d) Reference number as shown in the Schedule of Quantities.”

SDL 5 CONSTRUCTION

SDL 5.1 LAYING

SDL 5.1.3 KEEPING PIPELINES CLEAN

ADD THE FOLLOWING AT THE END OF SUBCLAUSE 5.1.3:

“All pipes and specials strung out above ground along the line of the trench shall have both ends closed by means of an adequately fixed plastic cap or other approved material, supplied by the Contractor, in order to prevent the ingress of foreign material.

Unless otherwise directed by the Engineer, the Contractor shall, when filling the pipeline with water for the first time, use suitable pipe pigs driven by a flush of water to aid the cleaning of all sections of the pipeline. If necessary, the pig shall be passed through a section more than once. If necessary, the Contractor shall install special temporary fittings in the pipeline for the insertion and recovery of the pigs. Such temporary fittings shall be removed after the pipeline has been cleaned to the satisfaction of the Engineer. The Contractor shall satisfy the Engineer that every pig inserted into the pipeline is recovered after use.”

SDL 5.1.4 Depth and Cover

ADD THE FOLLOWING:

"Water mains shall be laid so that the minimum cover to the top of the pipe barrel from finished surface level is 1,0 m under roads and 800mm elsewhere."

ADD THE FOLLOWING NEW SUBCLAUSES TO SUBCLAUSE 5.1:

"SDL 5.1.5 Alignment

Horizontal and vertical angular deviations at flexible couplings shall be limited to a maximum of 3° for pipelines up to and including 300 mm diameter.

SDL 5.1.6 Minimum clearance between pipelines

The minimum clearances at crossings between the barrels of proposed pipelines or between existing and proposed pipelines shall be 250 mm. The Contractor shall inform the Engineer should he find that this minimum clearance cannot be achieved."

SDL 5.2 JOINTING METHODS

ADD THE FOLLOWING SUBCLAUSE AFTER SUBCLAUSE 5.2.4:

"SDL 5.2.5 Protection of Buried Joints

The Contractor shall protect all buried joints with nuts and bolts against corrosion by wrapping them with a petrolatum mastic and "Denso" tape or equal approved, in accordance with the manufacturer's instructions.

After application, the petrolatum mastic shall be free from voids and not less than 10mm thick. The wrapped joint shall then be enclosed in a non-degradable polyethylene sheeting of not less than 250 micron thickness securely held in place with plastic cable ties."

SDL 5.6 Valve and Hydrant Chambers

SDL 5.6.1 General

REPLACE THE WORDS "drawing L-1" *IN THE SECOND LINE WITH* "the Drawings".

ADD THE FOLLOWING PARAGRAPH AT THE END OF SUBCLAUSE 5.6.1:

"The concrete in the valve chambers shall be Grade 25 MPa. The minimum cover to all steel shall be 40 mm.

Where no reinforcement is shown, allow 120 kg/m³ of concrete."

SDL 5.6.2 Construction of chambers

REPLACE THE WORDS "drawing L-1, L-2 and L-3" *IN THE FOURTH LINE WITH* "the Drawings".

ADD THE FOLLOWING SUBCLAUSES AFTER SUBCLAUSE 5.10:

"Notwithstanding the requirements of Subclause 5.10, the Contractor shall disinfect the pipelines before testing and before connecting into the reticulation."

ADD THE FOLLOWING SUBCLAUSES AFTER SUBCLAUSE 5.10:

"SDL 5.11 CONNECTION INTO EXISTING MAIN

Before commencing the excavation of pipe trenches in the vicinity of a proposed connection, the contractor shall excavate for, expose, survey and record the position and level of the connection point on the existing water main and shall determine all specials required.

The Contractor shall be responsible, through the Engineer, for liaison with the Municipality to arrange for turning off the water in order to carry out the connection.

The Contractor may cut into the existing water main (where applicable) only after he has received a written instruction from the Engineer to do so. No connection will be allowed on a Friday or after 12:00 on any day.

Before the connection is made, the new pipes must be laid to within 2 m of the connecting point, and must be temporarily blanked off, anchored, sterilized and tested. All specials required must be available on site.

The connection to existing pipes shall include the breaking out of anchor blocks (if necessary), and removal of existing pipe fittings and couplings.

SDL 5.12 REPLACEMENT OF EXISTING VALVE AND PIPE

Before commencing the excavation of pipe trenches in the vicinity of the proposed replacement, the contractor shall excavate for, expose, survey and record the position and level of the existing watermain and shall confirm all specials required.

The Contractor shall be responsible, through the Engineer, for liaison with the Municipality to arrange for turning off the water in order to carry out the connection.

The Contractor may cut into the existing watermain (where applicable) only after he has received a written instruction from the Engineer to do so. No connection will be allowed on a Friday or after 12h00 on any day.

All specials required must be available on site.

The replacement of the existing valve and pipe shall include the breaking out of anchor blocks (if necessary), and removal of existing pipe fittings and couplings.

SDL 5.13 PROTECTION OF BURIED JOINTS

The Contractor shall protect all joints with nuts and bolts against corrosion by wrapping them with “Denso” tape or equal approved, in accordance with the manufacturer’s instructions.

SDL 5.14 PIPELINE ROUTE MARKERS

Route markers for the various water pipelines shall be erected in the positions and shall be manufactured according to the details shown on the Drawings.".

SDL 7 TESTING

REPLACE THE CONTENTS OF SUBCLAUSE 7.3.1.3 WITH THE FOLLOWING:

“**SDL 7.3.1.3** Over and above other tests specified, all pipelines shall be hydraulically tested. The pipelines shall be fitted with all valves, fittings and couplings required to complete the section before testing will be permitted. The Contractor shall construct temporary thrust blocks or provide plugs and blank flanges where required for testing at no extra cost to the Employer. The field test pressure shall be 1,5 times the working pressure measured at the lowest point on the section to be tested but not less than 30 m or 1,25 times the working pressure, whichever is the most, at any other point on the section tested. Before any tests are carried out the test pressures and test points shall be confirmed with the Engineer. The Contractor shall provide all equipment and fittings or specials required for the pressure testing of the pipeline.”

SDL 8 MEASUREMENT AND PAYMENT

SDL 8.2 SCHEDULED ITEMS

SDL 8.2.1 Supply, Lay, and Bed Pipes Complete with Couplings

ADD THE FOLLOWING TO SUBCLAUSE 8.2.1:

“The Contractor will be allowed to claim the following percentages for interim payment purposes as the various activities are completed:

Stage of Completion	Percentage Applicable
Pipes laid and bedded in trench	85.00%
Pipes tested successfully, cleaned and disinfected.	100.00%

Note that the percentage applicable is given in the above table as a cumulative figure.

SDL 8.2.2 Extra-over 8.2.1 for the Supplying, Laying, and Bedding of Specials Complete with Couplings

ADD THE FOLLOWING TO SUBCLAUSE 8.2.2:

"Specials will be measured by number. The tendered rate for supply and delivery to Site shall cover the manufacture, transport, handling and fixing into position of the specials (including jointing materials as appropriate) and all alterations required to formwork and grouting in where applicable."

The cost of marking (see SDL 3.12) will also be held to be included in the price for supplying of the item"

SDL 8.2.3 Extra-over 8.2.1 for the Supplying, Fixing, and Bedding of Valves

REPLACE SUBCLAUSE 8.2.3 WITH THE FOLLOWING:

"Refer to Specification LK Clause 8 for the measurement and payment of valves."

SDL 8.2.11 Anchor/Thrust blocks and pedestals

ADD THE FOLLOWING TO SUBCLAUSE 8.2.11(a):

"The rates for the thrust blocks shall cover the cost of excavation and backfill, concrete, formwork, and steel reinforcement (including 120 kg high tensile steel per cubic metre of concrete where the amount of steel is not indicated on the drawings) as well as labour, etc., to complete the thrust block as shown on the drawings in addition to the operations and materials specified in this subclause."

SDL 8.2.13 Valve and Hydrant Chambers, etc.

ADD THE FOLLOWING TO SUBCLAUSE 8.2.13:

" The rates for valve chambers, meter chambers and other pipeline structures shall cover the cost specified for thrust blocks, excavation and backfill, concrete, formwork and for all other necessary materials, such as air vents, access covers and access ladders to complete the chamber as detailed on the drawings (including 120 kg high tensile steel per cubic metre of concrete where the amount of steel is not indicated on the drawings).

The rates shall cover the costs of providing padlocks to all the valve and meter chambers and must be locked with a set of padlocks with the same master key and the number of keys supplied must be equal to the number of padlocks. The padlocks must have a security rating of at least grade 6, be pick and drill resistant with a protective shutter to prevent dust contamination. The padlocks must also be key retaining [the key can only be removed in the locked position]. The body of the padlock must be hardened steel with a hardened boron alloy steel shackle”.

ADD THE FOLLOWING NEW SUBCLAUSES AFTER SUBCLAUSE 8.2.15:

"**SDL 8.2.16 Extra-over 8.2.13 for depths exceeding standard depth of chamber** (chamber type and drawing reference) Unit: 0.25m

Additional depth of chambers in excess of the standard depth indicated on the drawings will be measured in increments of 0.25m depth for each chamber type. The rate shall cover the cost of complete construction of each extra 0.25m additional depth.

SDL 8.2.17 Marker posts Unit: Number

Marker posts shall be measured as complete units. The rates for marker posts shall cover the complete cost of supply and installation of the marker post as well as all material and labour to complete marker posts.

SDL 8.2.18 Replacement of existing valve and pipe/Connection into existing pipeline

Unit: number

The tendered rate shall include full compensation for the cost of connection to existing 200/150/75 mm diameter main supply pipe, removal of surplus material, all labour and equipment necessary to make the connection and all liaison with the local authorities.

ADD THE FOLLOWING TO SUBCLAUSE 8:

SDL 8.3 Sundries Unit: Prov. Sum

The tendered rate shall include full compensation for the cost of excavation for all the items listed.

SDLB BEDDING (PIPES)

SDLB 3 MATERIALS

SDLB 3.1 SELECTED GRANULAR MATERIAL

REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

"Selected granular material shall have a PI not exceeding 6 and shall be free from sharp-edged particles exceeding 19 mm."

SDLB 3.3 BEDDING

ADD THE FOLLOWING:

"uPVC and HDPE pipes are deemed to be flexible pipes for the purposes of this subclause."

"Where structures are to be built over pipework, where shown on the drawings, or where ordered by the Engineer, the bedding cradle specified shall be stabilized with 5% cement as specified under subclause SDDB 3.5(c)."

SDLB 3.4 SELECTION

SDLB 3.4.1 Suitable material available from trench excavation

REPLACE THE WORDS "(but is not required)" *IN THE FIFTH LINE WITH THE WORDS* "(at his own cost)".

SDLB 8 MEASUREMENT AND PAYMENT

SDLB 8.1 PRINCIPLES

SDLB 8.1.3 Volume of bedding materials

ADD THE FOLLOWING SENTENCE TO SUBCLAUSE 8.1.3:

"Note that the outside diameters of the pipe shall be taken as “D” on all drawings where not specifically shown. Overbreak shall not be applicable for the measurement of the bedding material and selected fill material. The volume of bedding material will be measured net, excluding the volume occupied by the pipe."

SDLB 8.1.5 Disposal of displaced material

REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

"Material displaced by the pipeline and by imported material from sources other than trench excavation, shall be disposed of at an approved site furnished by the Engineer. No haulage is payable for such material."

SDLB 8.1.6 Free-haul

DELETE THE WORDS "of 0,5 km" *IN THE FIRST LINE OF THIS SUBCLAUSE.*

SDLB 8.2 SCHEDULED ITEMS

SDLB 8.2.2 Supply only of bedding by importation

SDLB 8.2.2.2 From borrow pits

DELETE THE WORDS "within a freehaul distance of 0,5 km" *IN THE LAST SENTENCE OF SUBCLAUSE 8.2.2.2.*

REFER TO SDD 5.2.5 Transport for earthworks.

***OR** IN THE CASE OF **ROAD CONSTRUCTION**, DELETE THE WORDS IN BRACKETS IN THE FIRST FOUR LINES.*

ADD THE FOLLOWING:

"The opening up of borrow pits and the removal of overburden are paid for under item 8.3.4 of SABS 1200 D."

ADD THE FOLLOWING SUBCLAUSE TO CLAUSE 8:

"SDLB 8.2.6 Extra over items 8.2.1 and 8.2.2 for bedding stabilized with 5% cement

Unit: m^3

The tendered rate shall include full compensation for selecting, mixing, backfilling and compacting the stabilized material to 90% of modified AASHTO dry density."

SDLD SEWERS

SDLD 3 MATERIALS

SDLD 3.5 MANHOLES, CHAMBERS, ETC

SDLD 3.5.2 Precast concrete sections

ADD THE FOLLOWING:

"Sectional spun-concrete cylinders shall be manufactured from dolomitic aggregate."

SDLD 3.6 MARKER POSTS

REPLACE THE WORDS "Project Specification" *WITH* "Drawings".

SDLD 5 CONSTRUCTION

SDLD 5.9 CONNECTING SEWERS

SDLD 5.9.1 Location and details

DELETE THE FOLLOWING FROM THE FIRST PARAGRAPH:

"or required in terms of the Project Specifications."

DELETE THE SECOND PARAGRAPH.

Add the following clause:

"SDLD 5.11 Backfilling around manholes

Material used to backfill around manholes that fall within the road reserve must comply with SABS 1200 LB subclause 3.1. Material used to backfill around other manholes must comply with SABS 1200 DB subclause 3.5.

Material adjacent to the walls of the manholes must be watered and mixed to its optimum moisture content, and compacted in layers not exceeding 150 mm in the compacted state. Compaction must be minimum 100% MOD AASHTO for non-cohesive material, and minimum 93% of MOD AASHTO density for cohesive materials.

Backfilling around the structure must be carried out in even layers to avoid uneven side forces."

SDLD 7 TESTING

SDLD 7.2 TESTS AND ACCEPTANCE/REJECTION CRITERIA

SDLD 7.2.6 Watertightness of Manholes

Add the following:

"Manholes will be inspected at the end of the first winter after completion. No ingress of groundwater into the manhole will be allowed.

Should any manhole fail to pass the inspection to the satisfaction of the Engineer, the fault or faults shall be made good by the Contractor at his own expense according to methods approved by the Engineer and the work shall be inspected again. The cost of all extra work and inspection shall be borne by the Contractor."

SDLD 8 MEASUREMENT AND PAYMENT

SDLD 8.2 SCHEDULED ITEMS

SDLD 8.2.5 Inspection chambers etc.:

Replace the contents of this subclause with the following:

"Separate items will be scheduled for manholes, backdrops, and inspection chambers, etc of each type and of each depth in increments of 0,5 m. The rate shall cover the cost of dealing with any excavation (in all materials including disposal of surplus) and backfilling with suitable material in accordance with SDLD 5.11 (including import of material if required) additional to what is measured under SABS 1200 DB Subclauses 8.2.2 and 8.2.3. The rate shall cover the cost of construction of manholes complete with channels, benching, short pipes (1 m long) and all flexible connections in accordance with the detail shown on the drawings.

The depth category of manholes shall be measured as the difference between the cover level and the deepest invert level of the manhole."

SDLE STORMWATER DRAINAGE

SDLE 3 MATERIALS

SDLE 3.1 CULVERT UNITS AND PIPES

(d) Skewed ends

ADD THE FOLLOWING:

*"*Skewed ends for pipe culverts may be cut on Site."

SDLE 3.4 MANHOLES, CATCHPITS, AND ACCESSORIES

SDLE 3.4.1 Bricks

ADD THE FOLLOWING:

"Bricks shall be engineering bricks complying with the requirements of SABS 227."

ADD THE FOLLOWING SUBCLAUSE:

"SDLE 3.6 MATERIALS FOR SUBSURFACE DRAINS

(a) Pipes and fittings

Pipes for subsurface drains shall be normal duty, perforated or slotted uPVC pipes complying with SABS 791. Fittings shall be heavy duty and shall also comply with SABS 791.

The size of the perforations in perforated pipes shall in all cases be 8 mm in diameter ± 1,5 mm, and the number of perforations per metre shall not be less than 26 for 100 mm pipes and 52 for 150 mm pipes. Perforations shall be spaced in two rows for 100 mm pipes and in four rows for 150 mm pipes, as shown on the Drawings.

Slotted pipes shall have a slot width of 8 mm with a tolerance of 1,5 mm in width. The arrangement of the slots is subject to the Engineer's approval, but the total slot area shall not be smaller than that specified for perforations.

(b) Crushed stone

Crushed stone shall be 19 mm single-sized and shall comply with the requirements of SABS 1083.

(c) Geotextiles

Geotextiles shall be a non-woven, spun or thermic-bonded continuous filament fabric consisting of at least 85% by mass of polypropylene, polyester or other approved material and manufactured for civil-engineering applications by a recognised manufacturer."

SDLE 5 CONSTRUCTION

SDLE 5.2 BEDDING AND LAYING

SDLE 5.2.2 Pipe culverts

ADD THE FOLLOWING:

"The class of bedding required for the various pipe culverts is shown on the Drawings."

ADD THE FOLLOWING SUBCLAUSE:
"SDLE 5.8 CONSTRUCTION OF SUBSURFACE DRAINS

After the completion of the excavations, the bottom portion of the trench shall be lined with geotextile sheeting as shown on the Drawings. The top edges of the vertical portions of the geotextile sheeting shall be tacked to the sides of the excavations with nails or by another suitable approved means. An overlap of at least 200 mm shall be provided at each joint. Geotextile sheeting damaged during the installation or construction shall be replaced at the Contractor's cost.

A layer of crushed stone of the thickness shown on the Drawings shall be placed on the geotextile sheeting and lightly tamped and finished to the required gradient.

Pipes of the required size shall be firmly bedded on the permeable material, true to level and grade, and coupled where required. The trench shall then be backfilled with crushed stone to the height above the pipes shown on the Drawings or as directed by the Engineer.

Crushed stone shall be placed in layers of not more than 300 mm at a time and shall be lightly compacted. Care shall be taken to prevent the contamination of crushed stone during construction of the subsurface drains and all material contaminated by soil or silt shall be removed and replaced by the Contractor at his own expense.

Perforated and slotted pipes shall be joined by couplers. Perforated pipes shall be laid with the perforations at the top or at the bottom, as directed. The higher end of subsurface drain pipes shall be sealed off with a loose concrete cap of class 20/19 concrete, as shown on the Drawings and at the lower end of the pipe shall be built into a concrete head wall providing a positive outlet, or it shall be connected to the stormwater pipes or culverts.

After all the crushed stone filter material and the protruding vertical filter material have been placed, the protruding vertical sections of the geotextile sheeting shall be folded back across the filter material so that the filter material will be completely enwrapped in the geotextile. An overlap of at least 200 mm shall be provided between the portions folded back.

The remainder of the trench shall be immediately backfilled with approved impermeable material preferably obtained from the excavations, in layers not exceeding 150 mm and compacted to 90% of modified AASHTO density, unless otherwise ordered by the Engineer. The trench shall be specially protected against the ingress of water, soil and silt until the backfilling with impermeable material has been completed.

Permeable material in subsoil drains shall not be taken to the surface but shall be discontinued at such heights as will be determined by the Engineer.

Any section of a subsurface drain constructed with pipes without perforations or slots shall be backfilled with impermeable backfill material as described above. Suitable excavated material may be used for backfilling. Payment for excavations as well as for backfilling with impermeable material will be made under SABS 1200 DB."

SDLE 8 MEASUREMENT AND PAYMENT

SDLE 8.2 SCHEDULED ITEMS

SDLE 8.2.1 Supply and lay concrete pipe culverts

REPLACE THE HEADING OF THIS ITEM WITH THE FOLLOWING:

"SDLE 8.2.1 Supply and lay pipe culverts''

ADD THE FOLLOWING ITEMS:

"SDLE 8.2.14 Pipes in subsurface drains:

(a) Normal duty uPVC pipes complete with couplings:

(i) (Diameter and whether perforated or not, indicated) Unit: m

(ii) Etc for other diameters

(b) Heavy-duty fittings:

(i) (Type and diameter indicated) Unit: number

(ii) Etc for other types and diameters

The tendered rates per metre of pipe measured in place along its centre line including the length of fittings shall include full compensation for procuring, furnishing, laying and jointing the pipes as specified.

The tendered rates for fittings shall include full compensation for procuring, furnishing, laying and jointing the fittings as specified, irrespective of the type of fitting.

SDLE 8.2.15 Geofabric (description of type, grade, etc) Unit: m^2

The filter fabric will be measured in place after installation.

The tendered rate shall include full compensation for procuring, supplying, cutting, overlapping, jointing, placing and protecting the filter fabric as specified, as well as for wastage.

SDLE 8.2.16 Crushed stone in subsurface drains: Unit: m^3

The tendered rate shall include full compensation for procuring, supplying, transporting and placing the material as specified. The quantity shall be calculated from the authorised dimensions.

Impermeable material will be paid under SABS 1200 DB.

SDLE 8.2.17 Grade 20 MPa/19 mm concrete outlet structures for subsurface drains (including framework) Unit: m^3

The tendered rate shall include full compensation for procuring and supplying of all materials, providing and erecting formwork, reinforcing and mixing, transporting and placing concrete.

SDLE 8.2.18 Concrete caps for subsurface drain pipes Unit: number

The tendered rate shall include full compensation for supplying and installing the concrete caps.

SDLE 8.2.19 Drainage sand in subsurface drains Unit: m^3

The tendered rate shall include full compensation procuring, supplying, transporting and placing the material as specified. The quantity shall be calculated from the authorised dimensions.

SDLK VALVE INSTALLATIONS (SPEC LK)

SDLK 3 MATERIALS – THE VALVES

SDLK 3.1 Gate valve or resilient seal valve

SDLK 3.1.1 General

ADD THE FOLLOWING TO SUBCLAUSE 3.1.1:

“The resilient seal valve gates shall be completely rubber or neoprene sheathed (not with rubber stirrups only) to provide a resilient seal. The sheath shall be pinhole free.

The gate valve spindle shall be either EN56B grade or other approved stainless steel and shall operate in a spindle nut of appropriate non-corrodible material. The design of the stuffing box shall be such that the "O-rings” can be replaced while the valve is in service without having to remove the valve dome.

Should there be any danger of the main valve shaft shearing due to the high gearing of the valves, fail safe shear pins shall be fitted to the gearbox.”

SDLK 3.3 Butterfly valve

SDLK 3.3.1 General

ADD THE FOLLOWING TO SUBCLAUSE 3.3.1:

“Normally the valves will be in either the fully open or fully closed positions.

Butterfly valves shall be fitted with shaft bushes of an approved non-corrodible material and stainless steel shafts. The 316 stainless steel valve seats shall be of a design that permits removal and replacement at the site of installation. Seats shall be secured mechanically and not by means of adhesives. The valve seats shall be of a design that permits removal and replacement at the site of installation. The resilient seal shall be fitted to the valve disc (and not the body) and shall be mechanically held in place by means of a 316 stainless steel ring and Allen screws or set screws with hexagon heads.

The butterfly valve shall close clockwise and be supplied complete with a gearbox extension spindle with handwheel. The gearboxes on butterfly valves shall be fitted to the right hand side of the body when looking in the direction of flow, unless specified otherwise.

The full quarter turn of the valve disc on hand operated valves shall be obtained by at least 40 complete turns of the handwheel on all valves in excess of DN350 mm.

Each valve shall be fitted with two steel lifting eye bolts.”

SDLK 3.5 Air valve for a water main

SDLK 3.5.1 General

SDLK 3.5.1.1 Water main

ADD THE FOLLOWING TO SUBCLAUSE 3.5.1.1:

“Multiple orifice air valves shall be of the kinetic type ("Vent-O-Mat RBX" or equal, approved).

Where valves of a smaller diameter than specified are offered in terms of Conditions of Tender, such valves shall be capable of releasing the same volume of air as the specified valve.

All air valves shall be suitable for the design pressure as specified in the Bill of Quantities. Valves shall

close drop tight under a minimum operating pressure of 20 kPa.

Each air valve shall be manufactured with a 1/4" BSP female test cock connection to enable pressure measurements on the pipeline. The connection shall be fitted with a threaded stainless steel male plug with hexagonal bolt head."

SDLK 3.14 Protection against corrosion

ADD THE FOLLOWING NEW SUBCLAUSE TO SUBCLAUSE 3.14:

"**SDLK 3.14.4 Repair of corrosion protection**

All damage to the coating (if any) caused by the transport and handling of the valves shall be repaired by the Contractor in accordance with the above specification, prior to the installation of the valves. Any damage to the coating caused by the installation of the valves shall be repaired in accordance with the paint manufacturer's specifications. The grinding down of the damaged area to Sa2½ and the feathering of the edges are an acceptable alternative to re-blast cleaning."

SDLK 7 TESTING

SDLK 7.2 Test requirements

SDLK 7.2.1 At manufacturer's works

ADD THE FOLLOWING TO SUBCLAUSE 7.2.1:

"Facilities shall be made available for the Engineer to witness these tests and 14 days' notice in writing shall be given to the Engineer of the date and place at which the tests will be carried out."

SDLK 8 MEASUREMENT AND PAYMENT

SDLK 8.2 SCHEDULED ITEMS

SDLK 8.2.1 Supply and deliver valve

ADD THE FOLLOWING TO SUBCLAUSE 8.2.1:

"The rates tendered for all valves shall cover the cost of the supply and delivery to Site of the valves, complete with handwheels or extension spindle and support bracket (as billed), corrosion protection as specified in Subclause 3.14 and the necessary testing and commissioning specified in Clause 7, together with packaging and marking."

SDLK 8.2.2 Install, bed and field-test small valve (of nominal bore of up to 300 mm)

ADD THE FOLLOWING TO SUBCLAUSE 8.2.2:

"No separate payment will be made for the repairs to paintwork in the event of damage to the valves."

SDME SUBBASE

SDME 3 MATERIALS

SDME 3.2 PHYSICAL PROPERTIES

SDME 3.2.1 Subbase material

REPLACE THE CONTENTS OF PARAGRAPH (a) WITH THE FOLLOWING:

"(a) The maximum particle dimension of the gravel shall not exceed 63 mm."

REPLACE THE CONTENTS OF PARAGRAPH (d) WITH THE FOLLOWING:

"(b) The CBR at specified density shall be 45 for unstabilized material as well as for stabilized material prior to stabilization."

DELETE PARAGRAPH (e).

SDME 3.2.2 Gravel shoulder and gravel wearing course material

REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

"The material used for gravel shoulders and gravel wearing course shall comply with the following:

(a) The PI shall not be less than 6 and not more than (3 x GM) + 10.

(b) The maximum particle dimension of the gravel shall not exceed 40 mm.

(c) The CBR shall be greater than 15 at 93% of modified AASHTO density."

SDME 5 CONSTRUCTION

SDME 5.2 EXCAVATION

SDME 5.2.2 Borrow pits

INSERT THE WORDS "designated by the Engineer and" BETWEEN THE WORDS "pits" AND "established" IN THE FIRST LINE.

ADD THE FOLLOWING SUBCLAUSES:

"SDME 5.8 WEED-KILLER

The subbase layer shall be treated before compaction by applying and mixing in granular HYVAR X or TENOC X weed-killer in accordance with the manufacturer's instructions. An approved equivalent may be used.

SDME 5.9 INSECTICIDE

An insecticide approved by the Engineer shall be applied strictly in accordance with the manufacturer's instructions over the total area of the subbase. The instructions indicate whether the poison is to be applied before or after compaction of the layer."

SDME 8 MEASUREMENT AND PAYMENT

SDME 8.1 BASIC PRINCIPLES

INSERT A SEMICOLON IN THE FIRST LINE OF PARAGRAPH (b) AFTER THE WORDS "will be paid for once only" AND DELETE THE REST OF THE PARAGRAPH.

AMEND PARAGRAPH (d) AS FOLLOWS:

"(d) that, in the case of material from a commercial source or from borrow pits selected by the Contractor, no additional payment will be made for the class of excavation, method of processing (except stabilizing), or overhaul."

SDME 8.3 SCHEDULED ITEMS

SDME 8.3.2 Construct the subbase course/shoulders/gravel wearing course with material from designated excavations

REPLACE THE CONTENTS OF SUBITEM (a) WITH THE FOLLOWING:

"The rate for (a) shall include full compensation for excavating and selecting subbase material, for loading and transporting the material within the free-haul distance, and for either placing the material on the road or stockpiling the material for later use. When material is stockpiled, the rate shall include compensation for shaping and grading the stockpile so that it is free-draining."

SDME 8.3.3 Construct the subbase course/shoulders/gravel wearing course with material from commercial sources or designated borrow areas

REPLACE THE HEADING OF THIS ITEM WITH THE FOLLOWING:

"SDME 8.3.3 Construct the subbase course/shoulders/gravel wearing course with material from commercial sources"

ADD THE FOLLOWING PARAGRAPH:

"This item shall also apply to the construction of subbase course/shoulders/gravel wearing course with material from borrow pits selected by the Contractor."

"SDME 8.3.11 Treatment of subbase with:

(a) Weed-killer Unit: m²

(b) Insecticide Unit: m²

The tendered rates shall include full compensation for supplying, spreading and mixing-in or applying the poison.

Only areas that were treated on the written instructions of the Engineer will be measured for payment."

SDMF BASE

SDMF 3 MATERIALS

SDMF 3.3 PHYSICAL AND CHEMICAL PROPERTIES

SDMF 3.3.1 Natural gravel (stabilized or unstabilized)

REPLACE THE CONTENTS OF PARAGRAPH (a) WITH THE FOLLOWING:

"(a) The maximum particle dimension of the gravel shall not exceed 63 mm."

SDMF 5 CONSTRUCTION

SDMF 5.3 PROCESSING

REPLACE THIS SUBCLAUSE WITH THE FOLLOWING:

"SDMF 5.3 CHEMICAL MODIFICATION

The base material shall be prepared, broken down and spread. Road lime complying with the requirements of SABS 824 shall then be spread over the prepared base material at a rate of 3,0%. The materials shall then be mixed dry using road graders, ploughs and other suitable equipment until the lime is mixed thoroughly and uniformly with the base material. The mixed material shall then be watered, mixed and lightly compacted.

After 24 hours have elapsed the material shall be ripped, worked in the normal manner and compacted to 98% of modified AASHTO density."

SDMF 5.4 PLACEMENT AND COMPACTION OF A BASE OTHER THAN A WATER-BOUND MACADAM BASE

SDMF 5.4.4 Compaction

REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

"The base material shall be compacted to 86% of apparent density which is determined as follows:

(a) Apparatus

- Balance to measure 5 kg accurately to within 0,5 g
- Pycnometer (eg a preservative jar with a flat ground rim)
- Temperature-controlled bath with thermostat capable of maintaining the temperature at 25 °C ± 1 °C
- Thermometer (0 °C - 100 °C)
- Drying oven capable of maintaining temperatures between 105 °C and 110 °C
- Towels
- 10% Teepol solution

(b) Method

Take 3 000 g to 4 000 g of the material from a density hole in the road. All the material obtained from the hole should preferably be used. If there is too much for one pycnometer, the material may be divided between two pycnometers.

Dry the material to a constant mass in an oven at 105 °C to 110 °C.

Ensure that the pycnometer is clean, and determine its mass together with that of a marked sheet of glass.

Place the dried sample in the pycnometer and determine the combined mass of the pycnometer, glass sheet and sample. (The sample should not be more than half the pycnometer's volume.)

Add clean water at a temperature of 25 °C to the pycnometer until it is approximately three quarters full. Add three drops of the 10% Teepol solution to the water, close the pycnometer and shake thoroughly for 1 to 2 minutes.

Fill the pycnometer to near the brim with water at a temperature of 25 °C and place it in a thermostatically controlled bath at 25 °C. Leave for 30 minutes without disturbing.

Remove the pycnometer without shaking or jarring it and place it on a spread towel. Fill with water at a temperature of 25 °C and slide the glass sheet carefully over the brim from one side. Make sure that no air bubbles are trapped beneath the glass sheet. Dry the pycnometer and the glass sheet carefully all over and determine the mass of the filled pycnometer plus the glass sheet.

Remove the contents of the pycnometer and clean and fill it in the same manner with wat
er at a temperature of 25 °C. Dry the pycnometer and determine the mass of the pycnometer filled with water together with the glass sheet.

(c) Calculation

The apparent density of the material is calculated as follows:

Mass of pycnometer + glass sheet	= a
Mass of pycnometer + glass sheet + material	= b
Mass of material only	= (b - a)
Mass of pycnometer + material + water + glass sheet	= c
Mass of pycnometer + water + glass sheet	= d
Apparent density of material	= (b - a)/{(d - a) - (c - b)}

NOTES:

(1) Do not add any chemicals other than the Teepol solution to the water.

(2) No suction should be applied to the water to remove air.

(3) The temperature of the water should be 25 °C ± 1 °C and no other temperature should be used.

(4) When two pycnometers are used, the apparent density is calculated from the weighted average of the two results."

SDMF 5.9 TRANSPORT

REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

"All movement of material will be considered as free-haul. No haulage cost will be paid."

SDMF 7 TESTING

SDMF 7.3 ROUTINE INSPECTION AND TESTING

REPLACE TABLE 4 WITH THE FOLLOWING:

"TABLE 4 - APPARENT DENSITY OF BASE

Specified apparent density, %	Number of tests per lot	Minimum average density, %	Minimum value for any single test, %
86	4 5 6 7 8 9	86,1 86,4 86,5 86,7 86,8 86,9	82,7 82,6 82,4 82,3 82,2 82,1

"

SDMF 8 MEASUREMENT AND PAYMENT

SDMF 8.3 SCHEDULED ITEMS

SDMF 8.3.3 Construct base with material from commercial sources or designated borrow areas

REPLACE THE TITLE OF ITEM 8.3.3 WITH THE FOLLOWING:

"SDMF 8.3.3 Construct base course with material from commercial sources and compact to 86% of apparent density"

SDMF 8.3.5 Process base material by the following processes, as relevant, and use in base (applicable to 8.3.1 or 8.3.2 or both):

ADD THE FOLLOWING SUBITEM:

"(e) Process base material by chemical modification (applicable to item 8.3.1) Unit: m^3

The tendered rate shall include full compensation for the chemical modification as specified, including all labour, transport, etc. The modifying agent will be paid for under item SDMF 8.3.8."

SDMF 8.3.8 Stabilizing agent

REPLACE THE HEADING OF THIS ITEM WITH THE FOLLOWING:

"SDMF 8.3.8 Road lime for modification Unit:t"

SDMF 8.3.9 Overhaul:

REPLACE THE CONTENTS WITH THE FOLLOWING:

"(a) Limited overhaul Unit: m^3

(b) Long overhaul Unit: m^3-km

Overhaul will be paid in accordance with item 8.3.6 of SABS 1200 D."

SDMK KERBING AND CHANNELLING

SDMK 3 MATERIALS

SDMK 3.1 CONCRETE

ADD THE FOLLOWING:

"The Contractor shall timeously submit the concrete mix design for cast-in-situ kerbing to the Engineer for approval and no kerbing shall be placed before the mix design has been approved."

SDMK 5 CONSTRUCTION

SDMK 5.11 TRANSITION SECTIONS AND INLET AND OUTLET STRUCTURES

DELETE THE WORDS "and with the requirements of the Project Specification" IN THE SECOND PARAGRAPH.

SDMK 7 TESTING

SDMK 7.2 CAST-IN-SITU AND EXTRUDED KERBING AND CHANNELLING

SDMK 7.2.1 General tests

DELETE THIS SUBCLAUSE.

SDMK 7.2.2 Alternative tests

REPLACE THE HEADING AND CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

"SDMK 7.2.2 Tests

The Contractor shall carry out a minimum of three cube crushing tests per 1 000 m of kerbing placed. The cost of such tests shall be deemed included in the rates tendered for kerbing.

One cube crushing test shall consist of a set of six cubes made with concrete taken from the mixer, the kerbing machine or from any part of the work as ordered.

If, after 28 days in an approved laboratory, after three cubes of any set of six cubes have been tested, the average crushing strength is found to be more than 3 MPa below the specified strength, the kerbing represented by the cubes will be rejected.

The Contractor may apply for resubmission of the rejected section on the basis of cores drilled from this section and tested for the estimated actual crushing strength in accordance with SABS method 865 (excluding Appendix A). The cost of drilling and testing the cores is for the Contractor's account, regardless of the outcome of the tests on the cores. The number of cores required will be determined by the Engineer and the criterion for rejection or acceptance of the section represented by the cores shall be as specified above for cubes."

SDMK 7.3 RESPONSIBILITY FOR THE COST OF TESTING

DELETE THIS SUBCLAUSE.

SDMK 8 MEASUREMENT AND PAYMENT

SDMK 8.2 SCHEDULED ITEMS

SDMK 8.2.1 Concrete kerbing

REPLACE "5.8.2" IN THE THIRD LINE OF PARAGRAPH (e) WITH "5.8.3".

PARTICULAR SPECIFICATION

PA FENCING

CONTENTS

PA 01 SCOPE

This is a Particular Specification and covers the erection of new fences.

PA 02 TYPE OF FENCE

The fence shall be Clear-Vu security fence and shall be erected in accordance with the dimensions shown on the drawing

PA 03 MATERIALS

PA 03.1 POSTS, STAYS AND STANDARDS

Posts, stays and standards shall be of the type and size indicated on the Drawings and as per manufacture's specification. Posts shall include gate posts, straining posts and corner posts.

PA 03.2 BOLTS FOR STAYS

Bolts shall be as per the Manufacturer's specification

PA 03.5 GATES

Gates shall be complete in every respect, and shall include hinges, washers, bolts and the locking mechanism shown on the drawings.

PA 03.6 CONCRETE

Concrete used for fencing shall comply with the requirements of SANS 1200 G.

PA 04 CLEARING FENCE LINE

Strip clearing for the fence shall be carried out in accordance with SANS 1200 C and will be measured and paid for under Section 1200 C of the Schedule of Quantities.

PA 09 CLOSING OPENINGS UNDER FENCES

At ditches, streams, drainage channels or other hollows where the fence cannot follow the general ground contour, the Contractor shall close the opening under the fence by means of horizontal barbed wires 150 mm apart and stretched between additional straining posts as shown on the Drawings. The opening shall be covered with strips of diamond mesh, 1 000 mm wide, fixed to the barbed wires.

In the case of larger streams, the opening below the lower fencing wire shall be closed by means of loose-hanging wire nets as shown on the Drawings. These nets shall be erected at streams only on the instructions of the Engineer.

PA 10 INSTALLING GATES

Gates shall be installed at the positions indicated on the drawings or pointed out on Site.

PA 11 GENERAL REQUIREMENTS AND TOLERANCES

The completed fences shall be plumb, taut, true to line and to the ground contour, and with all posts, standards and stays firmly set.

The height of the lower fencing wire above the ground at posts and standards shall not vary by more than 25 mm from that shown on the Drawings. Other fencing wires shall not vary by more than 10 mm from their prescribed relative vertical positions.

Anchoring of a fence to structures shall be done as shown on the Drawings.

The Contractor shall, on completion of each section of fence, remove all cut-offs and other loose wire or mesh so as to leave the fence with a neat and finished appearance.

PA 12 MEASUREMENT AND PAYMENT

PA.01 Supply and erection of new fencing material including:

(a) Clear-Vu ..... Unit: m

PA.02 New gates:

(a) Single leaf (size and type indicated) ..... Unit: No.

(b) Pedestrian (size and type indicated) ..... Unit: No.

The unit of measurement shall be the number of new gates erected. A pair of gates shall be measured as one.

The tendered rate shall include full compensation for gate posts, hinges, bolts, concrete, locking mechanism and straining wire, and for the erection of the gates complete as specified and as shown on the Drawings. It shall not include compensation for any fencing wire or mesh used on the gate.

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C3.6 DRAWINGS

LIST OF DRAWINGS PREPARED BY THE EMPLOYER

The following is the list of drawings prepared by the Employer and applicable to this Contract:

DRAWING NO.	**DESCRIPTION**
Bound to Document	
1012-CIV-DRG-101	LAYOUT: LOCALITY PLAN AND LIST OF DRAWINGS
1012-CIV-DRG-203a	PLAN LAYOUT: LANDFILL SITE
1012-CIV-DRG-203b	LANDFILL SECTIONS
1012-CIV-DRG-203c	LANDFILL SITE FILLING CONCEPT
1012-CIV-DRG-203d	LANDFILL TYPICAL DETAILS (1 OF 2)
1012-CIV-DRG-203e	LANDFILL TYPICAL DETAILS (2 OF 2)
1012-CIV-DRG-204	RECYCLABLE STORAGE AREA
1012-CIV-DRG-205	ACCESS CONTROL BUILDING AND SURFACE BED LAYOUT
1012-CIV-DRG-206	WVF FENCE DETAILS
1012-CIV-DRG-207	SINGLE LEAF SLIDING GATE DETAILS
1012-CIV-DRG-208	TYPICAL MANHOLE DETAILS

Note: Although, elsewhere in the Contract Document, drawings are referred to by their generic numbers only, the alphabetic suffix (if any) to a drawing number as given in this List of Drawings denotes the revision of the drawing that is applicable to this document.

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PART C4 SITE INFORMATION

SITE INFORMATION

1 NATURE OF GROUND AND SUBSOIL CONDITIONS

Enclosed herewith is the geotechnical report for the ground conditions of the proposed site.

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FOR

TROMPSBURG: PERMITTING AND CLOSURE OF EXISTING DISPOSAL SITE AND CONSTRUCTION OF A NEW DISPOSAL SITE

PART C5 APPENDICES

Appendix A : Occupational Health and Safety Specification and Baseline Risk Assessment

Appendix B : Geotechnical Investigation Report

APPENDIX A:
Occupational Health and Safety Specification and Baseline Risk Assessment

OCCUPATIONAL HEALTH AND SAFETY SPECIFICATIONS AND BASELINE RISK ASSESSMENT – CR 5(1)(A-B)
ATTACHMENTS: MANDATORY AGREEMENT AND CONTRACTOR APPOINTMENT

CLIENT:

KOPANONG LOCAL MUNICIPALITY

PROJECT:

TROMPSBURG:

PERMITTING AND CLOSURE OF EXISTING DISPOSAL SITE AND

CONSTRUCTION OF A NEW DISPOSAL SITE.

INTRODUCTION

This "Health and Safety Specifications" document is governed by the Occupational Health and Safety Act (Act No 85 of 1993), hereinafter referred to as the Act, with specific reference to Construction Regulations 2014 Section 5

Included in these specifications is a set rules to assist the principal contractor, contractors (sub-contractors) and THE CLIENT in controlling and managing health and safety issues on the construction site, as stipulated in the Occupational Health and Safety Act (Act No 85 of 1993).

This specifications and rules does not relief the principal contractor, contractors (sub-contractors) or their employees from any legal obligation under the requirements of the "Basic Conditions of Employment Act", the "Occupational Health and Safety Act" or the "Compensation for Occupational Injuries and Disease Act".

The specifications and rules will apply for the duration of the project. Should the principal contractor or contractors (sub-contractors) not comply, it will be deemed as a breach of contract.

The principal contractor will carry full responsibility and accountability regarding the adherence to any health and safety issues when contractors (sub-contractors) are utilized to carry out any construction work on the project.

It must be noted that the CLIENT Safety Agent, may stop any contractor from executing construction work, which is not in accordance with the CLIENT health and safety specifications or rules for the project or which poses a threat to the health and safety of any person.

CONTENTS

ABBREVIATIONS

OHS – Occupational Health and Safety

CR - Construction Regulations 2014

SACPCMP – The South African Council for the Project and Construction Management Professions.

REFERENCES

CR 8(5) – Construction Health and Safety Officer

CR 8(1) – Construction Manager

CR 8(7) – Construction Work Supervisor

1. SITE SAFETY FILE

The safety plan and file must be approved by the Client Agent prior to and be implemented on site from commencement of the works and must be kept up to date until the completion of the project.

After the project a consolidated copy of the file must be handed to the client.

The contents of the file should include, but not be limited to, the following:

- Notification of Construction Work to Department of Labour
- Letter of Good Standing from Contractor's Workmen's Compensation Insurer
- Contractor Liability Insurance
- Copy of this specification document
- Health and Safety Plan
- Occupational Health and Safety, Environmental and other Policies
- Risk Assessments
- Safe Work Procedures / Method Statements
- Legal Appointments
- Inspection Checklists
- Emergency Preparedness
- Incident Reporting and Investigations
- Hazardous Chemicals
- Traffic and Pedestrian Management
- Sub-contractor Management
- Toolbox talks - weekly
- Proof of Safety Induction
- Copies of Worker ID's
- Worker Medicals
- Copies of the Occupational Health and Safety Act and Construction Regulations.
- Safety Meeting Minutes

2. HEALTH AND SAFETY PLAN

The plan must be suitable, sufficiently documented, coherent and site specific, and after approval by the Client OHS Agent, it must be applied on site from date of commencement of and for the duration of the construction work.

It is also required that the plan be reviewed and updated as work progresses.

Take note that the risk assessment forms part of the health and safety plan to be implemented on site.

The plan must answer the questions what, how, why, when, where and who.

3. APPOINTMENTS

The appointments should include but not be limited to:

- Appointment of Manager - Sect 16(2)
- Construction Manager – CR 8(1)
- Construction Work Supervisor – CR 8(7)
- Assistant Construction Work Supervisor – CR 8(8)
- Part-time Safety Officer – CR 8(5)
- Risk Assessor – CR 9(1)
- First Aider - GSR 3(4)
- Incident Investigator - GAR 9(2)
- Health and Safety Representative - Sect. 17(1)
- Electrical Machinery Operator/Inspector – CR 24*(e)*
- Fire Equipment Inspector – CR 27(h)
- Construction Vehicle Operator / Inspector – CR 23(1)*(d),(k)*
- Stacking Supervisor – CR 28(a)
- Excavation Supervisor – CR 13(1)

The Contractor must appoint a part-time Construction Health and Safety Officer, registered and in good standing with the SACPCMP, for the project.

This person must at least visit site twice a month to perform inductions, inspections, audits, risk reviews and give general inhouse training.

The Construction Health and Safety Officer must compile a summary Occupational Health and Safety report to be tabled monthly during the Site Meetings and which will reflect Occupational Health and Safety up to the end of the previous month.

Proof of competency (knowledge, training, experience and qualification where required) in respect of the work or task being appointed for, must be attached to each appointment.

4. SITE SAFETY MEETINGS

The Contractor must have monthly safety meetings on site, of which minutes must be kept in the safety file.

The Contractor's CEO, Construction Health and Safety Officer, Construction Manager, Construction Work Supervisor and representatives of the workers (Safety Representative and or CLO) must attend the meetings.

Minutes must be signed off by the CEO and decisions must be implemented as decided by the committee.

5. MONTHLY SAFETY AUDITS

The Contractor's Construction Health and Safety Officer must perform monthly internal audits which must include all contractors on site, of which the reports must be available on the day of the site meeting.

The Client's Occupational Health and Safety Agent will perform required monthly audits and give feedback during monthly site meetings.

The Contractor will receive the OHS report within 7 days of the audit and must give written feedback on all outstanding items, to the Client's Occupational Health and Safety Agent with 7 days of receipt.

6. SUB-CONTRACTOR MANAGEMENT

All sub-contractors must comply with Occupational Health and Safety requirements and must submit an Occupational Health and Safety file to the main contractor, for approval by the Construction Health and Safety Officer, before commencement of work on site and which must be kept up to date until completion of their work.

Sub-contractors must be registered for Workmen's Compensation before they will be allowed to commence work on site.

Mandatory Agreements Sec 37.2 and CR 7(1)(c)(v) appointments must be in place for every sub-contractor on site.

7. CONTINUOUS OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT

The Construction Manager is responsible to see that Occupational Health and Safety is implemented on site on a daily base and he will be assisted by the Construction Health and Safety Officer and Construction Work Supervisor.

These responsibilities will include, but not be limited to, the following:

- Daily Site Task Instructions (DSTI's)
- PPE compliance
- Tool and other inspections
- Safe working procedures
- Ensuring all safety signs and barricading are in good condition

If workers are less than 20 the contractor may and if workers are more than 20 the contractor must appoint a Safety Representative to represent the workers on site.

The Safety Representative must be elected by the workers and must undergo training or already be in possession of a valid certificate issued by a legal training institution.

Occupational Health and Safety Act Sections 17-19 will apply as guideline for above.

8. INCIDENT REPORTING AND INVESTIGATION

Incident reporting and investigations must be in accordance with Occupational Health and Safety Act Sec 24 and General Admin Regulations 8 and 9.

The Client's Occupational Health and Safety Agent must be notified immediately in the case of Sec 24, and within 24 hours in the case of Annexure 1 incidents.

All investigation documents must be completed in full, submitted to the client and kept for a duration of at least 3 years.

9. EMERGENCY PREPAREDNESS

First Aid:

NO work will be allowed on site without the presence of a qualified First Aider, appointed in writing. (One First Aider for each site or workplace.)

A fully equipped First Aid box, with Annexure 3 contents, must be kept in the site office and a dressing record must be used to indicate details of all first aid treatment.

If working more than 1km away from the site office another fully equipped First Aid box must be on site close to work activities.

Fire:

At least 2 x 9kg fire extinguishers must be on site. One kept in the site office and one close to the storage area.

Workers must receive inhouse training on the use of firefighting equipment.

Hazardous Chemicals:

Chemicals be stored in a well-ventilated area and storage and handling must comply with the Hazardous Chemical Substance Regulations.

MSDS sheets must be available for all chemicals used on site.

Site specific emergency contact numbers and evacuation procedures must be available, communicated and posted on the site office wall or notice board.

10. WORKER'S WELLBEING

All workers of the main contractor and sub-contractors must undergo medical screenings, done by an Occupational Medical Practitioner in the form of CR Annexure 3.

Copies of Medical Fitness Certificates must be kept in the safety file.

Recommendations regarding medical treatment must be adhered to.

Working with and in the vicinity of various types of biological waist and contaminated water may cause serious health effects and injections as prescribed by the Occupational Medical Practitioner might be required

Toilets and eating facilities must be provided as per Occupational Health and Safety Act requirements. Facilities must be maintained.

Rubbish bins for bags, tins, cans etc must be provided on site and cleaned as per municipal requirements.

11. COSTING OF OCCUPATIONAL HEALTH AND SAFETY

It is the responsibility of the Principle Contractor to make sufficient provision for OHS requirements and the following should be taken into consideration:

- Training:
  - First Aider
  - Safety Representative
  - All Construction Vehicle Operator Certificates

- Equipment and PPE
  - Clothing
  - Safety Shoes
  - Hardhats
  - Gloves
  - Respiratory masks
  - Goggles/safety glasses
  - Symbolic Safety Signs
  - First Aid equipment, kit and box.
  - Fire extinguishing equipment

- Part-Time Health and Safety Officer
  - Compiling of safety file
  - Site visits, inspections and internal audits

- Medical fitness certificates for all employees – CR 7(8) - before commencement of work

12. GENERAL

For all other activities on site the requirements of the Occupational Health and Safety Act and Regulations, as well as all applicable Standards, will apply.

At the completion of the contract the Contractor must submit a consolidated Health and Safety file to the Client as per CR 7 (1)(e).

BASELINE RISK ASSESSMENT

Ref.	ACTIVITY	HAZARD	RISK	MEASURES REQUIRED
1.	Site establishment	Heavy lifting	Injuries and strains	Procedures Equipment Training PPE
		Traffic and moving vehicles	Injuries crushing, strains, death.	Traffic Management Training
		Dust	Inhalation	Procedures PPE
		Snakes and spiders	Poisonous bites can cause death	Procedures Emergency plan
		Temporary electrical installations	Electrocution	COC certificate
2.	Offloading equipment and materials	Heavy lifting	Injuries strains	Procedures Equipment Training PPE
		Collapsing loads	Injuries crushing, strains, death.	Procedures Training PPE
		Traffic and moving vehicles	Injuries crushing, strains, death.	Traffic Management Training
3.	Excavation work	Traffic and moving vehicles	Injuries crushing, strains, death.	Traffic Management Training
		Existing services – water pipes and electrical cables	Property damage, injuries, death	Pilot holes Wayleaves Procedures
		Dust	Inhalation	Procedures PPE
		Noise	Hearing impairment	Procedures PPE
		Moving Plant	Injuries crushing, strains, death.	Traffic Management Procedures Training
		Compressor and jackhammer	Injuries, noise, vibration sickness, WRULD	Training PPE Inspections
4.	Back Filling and Layer work	Traffic and moving vehicles	Injuries crushing, strains, death.	Traffic Management Training
		Dust	Inhalation	Procedures PPE
		Noise	Hearing impairment	Procedures

				PPE
		Moving Plant	Injuries crushing, strains, death.	Traffic Management Procedures Training
		Pedestrians and children	Injuries crushing, strains, death.	Traffic Management Procedures Training
5.	Compacting	Vibration of equipment	Injuries and WRULD's	Traffic Management Training
		Dust	Inhalation	Procedures PPE
		Noise	Hearing impairment	Procedures PPE
		Moving Plant	Injuries crushing, strains, death.	Traffic Management Procedures Training
		Traffic and moving vehicles	Injuries crushing, strains, death.	Traffic Management Training
6.	Manual handling	Heavy lifting	Injuries and strains	Procedures Training PPE
		Ergonomics and posture	Strains and injuries	Procedures Training PPE
7.	Pond lining	Heavy and large rolls of material	Strains and injuries	Procedures Training PPE
		Pulling and pushing of rolls	Strains and injuries	Procedures Training PPE
8.	Fencing	Concrete work	Dust inhalation	PPE
		Sharp metal	Cuts	PPE
		Use of ladders	Fall and injuries	Training Supervision
9.	Paving	Handling of bricks	Injuries	PPE Supervision
		Ergonomics and posture	Strains and injuries	Procedures Training PPE
		Brick stacks collapse	Injuries	Safe stacking
10.	Presence of visitors and members of the public	Moving plant and equipment	Injuries crushing, strains, death	Procedures Traffic Management Training

		Dust	Inhalation	Procedures PPE
		Noise	Hearing impairment	Procedures PPE
10	Leachate draining system	Water filled trenches	Injuries, death	Protection Barricading Procedures for removal Communication
		Falling into trenches	Injuries	Protection Barricading Warning signs Communication
11.	Building work-Guardhouse and ablution facility	Excavation for foundation	Injuries	Protection Barricading Warning signs Communication
		Concrete work	Dust inhalation	PPE
		Sharp metal	Cuts	PPE
		Use of ladders	Fall and injuries	Training Supervision
		Use of scaffolds – collapse or fall off	Serious injuries	Training Inspections Supervision
12.	Sub-contractors	Same hazards as main contractor	Same risks as main contractor	Main contractor to ensure sub-contractor adhere to all OHS requirements.

AGREEMENT WITH MANDATORY

In terms of Section 37 (1) and (2)

WRITTEN AGREEMENT ENTERED INTO AND BETWEEN

_____

(Herein after referred to as the "CLIENT")

AND

_____

(Herein after referred to as the Contractor)

Each page as well as each change made to be initialled.

DEFINITION OF MANDATORY:

Includes an agent, a Contractor or Sub-Contractor for work, but without derogating from his status in his own right as an Employer or User.

SECTION 37 (1)

Whenever an employee does or omits to do any act which it would be an offence in terms of this Act for the employer or such employee or a user to do or omit to do, then, unless it is provided that:-

(a) in doing or omitting to do that act the employee was acting without the connivance of permission of the employer or any such user;

(b) it was not under any condition or in any circumstances within the scope of the authority of the employee to do or omit to do an act, whether lawful or unlawful, of the character of the act or omissions charged, and

(c) all reasonable steps were taken by the Employer or any such user to prevent any act or omission of the kind in question.

The employer or any such user himself shall be presumed to have done or omitted to do that Act, and shall be liable to be convicted and sentenced in respect thereof; and the fact that he issued instructions forbidding any act or omissions of the kind in question shall not, in itself, be accepted as sufficient proof that he took all reasonable steps to prevent the act or omission.

SECTION 37 (2)

The provision of subsection (1) shall *mutates mutandis* apply in the case of a mandatory of employer or user, except if the parties have agreed in writing to the arrangements and procedures between them to ensure compliance by the mandatory with the provisions of this Act.

ACCEPTANCE BY MANDATORY

In terms of Section 37 (2) of the OHS Act 85 of 1993, I _____

representing _____responsible for carrying out

(Contractor Company Name)

_____ at _____

(describe activity) (contract/site name)

undertake to ensure that the requirements and provisions of the OHS Act and Construction Regulations are complied with.

SIGNATURES:

_____ _____

Contractor Representative Date

_____ _____

Client Representative Date

APPOINTMENT
CONSTRUCTION REGULATION 5 (1)(k)

In terms of the above-mentioned regulation:
The Contractor must submit the following for approval before commencement of any construction work and shall commence with activities only after approval:

1. Letter of Good Standing with Compensation Insurer.CR. 5(1)(j)
2. Health and Safety File with Health and Safety Plan.CR 5(l)
3. Required appointment letters of relevant responsible persons with proof of competency.CR 8
4. Risk assessment of anticipated activities to be performed on this project. CR 9

I,_____(full names) representing

_____(Client), appoint:

_____ (Contractor

company name) to carry out the following work:_____

_____

on project:_____

SIGNATURE:_____ DATE: _____
Client representative

ACCEPTANCE

I,_____ representing_____
(Contractor company name)

accept this appointment. I am familiar with Occupational Health and Safety Act and Construction Regulations as well as the associated duties and responsibilities of this appointment.

SIGNATURE:_____ DATE: _____
Contractor representative

APPENDIX B:
Geotechnical Investigation Report

GEOTECHNICAL
ENGINEERING LABORATORY (PTY) LTD

Head Office (Maseru):
Off Kofi Annan Road, Ha Tsolo
Private Bag Z041
Maseru-West 0105, Lesotho

Bloemfontein office:
14 Kenneth Kaunda
Navalsig
Bloemfontein, 9301

Tel: +266 28325279
Cell: +266 5885 5899
Cell: +266 62855899

Cell: +27 60 341 0052

E-mail: tsoeujm@hotmail.com

GEOTECHNICAL SITE INVESTIGATION REPORT

FOR

TROMPSBURG LANDFILL SITE, KOPANONG MUNICIPALITY, FREE STATE PROVINCE

DRAFT REPORT

14th November, 2017

Table of Contents

Abbreviations

AASHTO	American Association of Highway and Transport Officials
BP	Borrow Pit
CBR	California Bearing Ratio
GM	Grading Modulus
LL	Liquid Limit
LS	Linear Shrinkage
MDD	Maximum Dry Density
NP	Non Plastic
OMC	Optimum Moisture Content
PL	Plastic Limit
PI	Plasticity Index
SP	Soil Profile
TP	Test Pit

1. Introduction and Terms of Reference

On the 19th September, 2017 Engineering Aces (Pty) Ltd appointed Geotechnical Engineering Laboratory (Pty) Ltd to carry out the geotechnical site investigation for the proposed Trompsburg Landfill Site in Kopanong Municipality, Free State Province. The scope of work of work is detailed in the request for quotation issued.

2. Site Description

The proposed landfill site is located approximately 1 km west of Trompsburg town within Kopanong Local Municipality, Free State Province and is easily accessible. Kopanong Municipality is approximately 120 km south of Bloemfontein. The site location and test pit layout is as shown in ***Appendix A*** of this report. Photos taken during site investigation are attached to this report as ***Appendix B***.

3. Method of Site Investigation

The site investigation was carried out on the 19th October, 2017 and involved excavation of five (5) test pitsby TLB to an approximate depth of 1.0 m or refusal, whichever came first. The test pits were profiled using "Revised Guide to Soil Profiling for Civil Engineering Purposes in Southern Africa by Jennings JEB, Brink ABA and Williams AAB (1973)". Representative soil samples were taken and the following tests were carried out.

- Sieve Analysis
- Atterberg Limits
- Mod AASHTO
- CBR
- Specific Gravity
- Double Hydrometer Analysis
- Shear Box test
- Consolidation test

The main objectives of carrying out the testing were as follows:

- To classify the in-situ soils and assess their suitability for use in constructional activities,
- To classify the site,
- To determine the potential heave and the bearing capacity, and
- To determine a suitable founding depth and the foundation type

4. Site Geology and Groundwater Conditions

4.1. General

General geology of Trompsburg is shown on the Geological Map series of the Republic of South Africa. According to this map dolerite intrusions (J-d) of Karoo Supergroup are dominant. Mudrocks (Pa) of Beaufort Group of Karoo Supergroup are also available. These mudrocks were formed during Permian to Triassic period. During site investigation at Trompsurg, it was observed that the proposed landfill site is located on the doleritic intrusion and this was previously used as the borrow pit. The mudrock was found in TP 46 at 300 mm to 600 mm depth.

4.2. Soil Profile

The soil layers found on the project site are attached as ***Appendix C*** of this report and show the following soils

TP 43

0 – 500 mm	Moist yellow silt
700 – 800 mm	Moist grey basaltic gravel

TP 44

0 – 800 mm	Moist red silty clay
800 – 1100 mm	Dry grey basaltic gravel

TP 45

0 – 300 mm	Moist red silty clay
300 – 800 mm	Moist brown sugary basalt

TP 46

0 – 300 mm	Moist red silty clay
300 – 600 mm	Moist grey mudrock

TP 47

0 – 300 mm	Moist red silty clay
300 – 700 mm	Moist yellowish brown basaltic gravel

The soil profiles from the project site indicate that

- Yellow to red silty clay of thickness varying between 300 mm and 800 mm is underlain by basaltic gravel with the exception of TP 46 whereby it is underlain by mudrock.
- No refusal was encountered on the test pit.

4.3. Groundwater

No groundwater encountered during site investigation.

5. Geotechnical Evaluation

The relevant engineering characteristics were evaluated visually during site investigation and soil profiling. This evaluation was also done from laboratory testing as discussed below. Summary of test results is attached as ***Appendix D*** to this report.

5.1. Indicator Test Results

Indicator test results i.e. Sieve Analysis and Atterberg Limits test results are summarized in Table 5.1 below. The specific gravity test results are also shown in the table below. The in-situ moisture content was also determined as shown below.

Table 5.1 Foundation Indicator Test Results

TP #	Depth (mm)	Sieve Analysis				Atterberg Limits					Specific Gravity	W_n, %
		% < 2.00 mm	% < 0.425 mm	% < 75 µm	GM	LL (%)	PL (%)	PI (%)	LS (%)	AASHTO Class		
TP 43a	300-400	61.7	40.8	18.6	1.8	28	20	8	4	***A-2-4***		
TP 43b	600-700	26.5	12.4	5.1	2.6	28	24	4	2	***A-1-a***	***2.846***	***3.2***
TP 44a	600-700	97.1	84.2	34.5	0.8	21	15	6	3	***A-2-4***		
TP 44b	900-1000	11.1	4.5	1.9	2.8	23	17	6	3	***A-1-a***	***2.863***	***1.9***
TP 45a	100-200	98.6	93.0	56.1	0.5	26	20	6	3	***A-4***		
TP 45b	600-700	21.5	11.2	4.4	2.6	26	22	4	2	***A-1-a***	***2.569***	***4.5***
TP 46a	100-200	96.5	90.6	53.6	0.6	29	19	10	5	***A-4***		
TP 46b	400-500	44.9	38.4	21.4	2.0	32	19	13	6	***A-2-6***	***1.664***	***8.8***
TP 47a	100-200	74.7	48.1	22.6	1.5	21	16	5	2	***A-1-b***		
TP 47b	400-600	42.1	25.7	12.3	2.6	24	19	5	2	***A-1-a***	***2.046***	***3.4***

Note: W_n Natural In-situ moisture content

The results in Table 5.1 indicate that

- Soils from this project site are classified as A-2-4 (silts of low compressibility), A-2-6 (clays of low compressibility), A-4 (silts of low compressibility), A-1-a and A-1-b (stone fragments - gravel) according to AASHTO classification system.
- Specific gravities vary between 1.664 and 2.863.
- Grey mudrock in TP 46b has the lowest specific gravity and the highest natural moisture content.

5.2. Shear Strength Parameters

Shear box test is still in progress and as such the shear strength parameters will be determined once it is complete.

Table 5.3 Shear Strength Parameters

TP #	Depth, mm	ϕ'	c'	ρ	γ	ρ_{dry}	γ_{dry}
TP 43b	600-700						
TP 43b	600-700						
TP 45b	400-500						

5.3. Heave

Potential heave will be calculated once the hydrometer test is complete.

5.4. Bearing Capacity

Bearing capacity determination will be done once the shear strength parameters are calculated.

5.5. Seepage

Seepage properties of the soils on this landfill site will be determined once the permeability test is complete.

5.6. Impact of geotechnical character on the site

The proposed Trompsburg landfill site is located on a doleritic intrusion. The material coming from this intrusion is porous and this property makes it easy for the water/leachate to flow. During construction of the landfill the gravel from this area will have to be compacted to at least 95 % of Mod AASHTO in order to reduce its porosity.

All materials from this project were excavated using a TLB and as such the excavation can be classified as intermediate excavation as per SABS 1200 D-1988 (as amended 1990).

6. Conclusions and Recommendations

Conclusions and recommendations will be made on completion of all testing.

7. References

Jennings JEB, Brink ABA and Williams AAB (1973). *Revised Guide to Soil Profiling for Civil Engineering Purposes in Southern Africa*

Brink ABA and Bruin RMH (2002). *Guidelines for Soil and Rock Logging in South Africa*

Joint Structural Division of the South African Institution of Civil Engineers and the Institution of Structural Engineers (1995). *Code of Practice for Foundations and Superstructures for Single Storey Residential Buildings of Masonry Construction*

National Home Builders Registration Council (2014). *Home Building Manual*. NHBRC

Geological Map of the Republic of South Africa and the Kingdoms of Lesotho and Swaziland

8. Appendices

Appendix A Site Location and Layout

TROMPSBURG LANDFILL SITE - SITE LOCATION AND LAYOUT

Appendix B Photos

Figure 1: Test pit 43

Figure 2: Test pit 44

Figure 3: Test pit 45

Figure 4: Test pit 46

Figure 5: Test pit 47

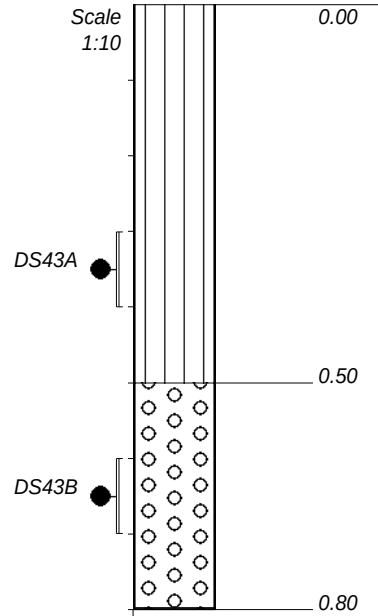
Appendix C Soil Profile

dotPLOT

Engineering Aces
Trompsberg Landfill Site

HOLE No: TP 43
Sheet 1 of 1

JOB NUMBER: 171019



0.00 Moist yellow soft intact SILT.

0.50 Moist grey very dense intact BASALTIC GRAVEL.

0.80

NOTES

1) No Refusal.
2) No ground water encountered.
3) Disturbed sample DS43A at 0,3--0,4 m.
4) Disturbed sample DS43B at 0,6--0,7 m.

CONTRACTOR :
MACHINE : TLB
DRILLED BY :
PROFILED BY : Tsoeu J Mokaloba/Khoathela Kou
TYPE SET BY : T. J. Mokaloba
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 19/10/2017
DATE : 01/11/2017
DATE : 01/11/2017 09:25
TEXT : ..\Examples\TROMPSBERG.txt

ELEVATION :
X-COORD :
Y-COORD :

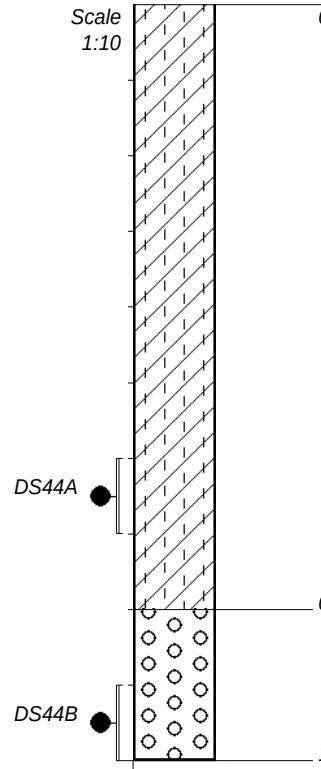
HOLE No: TP 43

dotPLOT

Engineering Aces
Trompsberg Landfill Site

HOLE No: TP 44
Sheet 1 of 1

JOB NUMBER: 171019



0.00 Moist red stiff intact silty CLAY.

0.80 Dry grey very dense intact BASALTIC GRAVEL.

1.00

NOTES

1) No refusal.
2) No water table encountered.
3) Disturbed sample DS44A at 0,6--0,7 m.
4) Disturbed sample DS44B at 0,9--1,0 m.

CONTRACTOR :
MACHINE : TLB
DRILLED BY :
PROFILED BY : Tsoeu J Mokaloba/Khoathela Kou
TYPE SET BY : T. J. Mokaloba
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 19/10/2017
DATE : 01/11/2017
DATE : 01/11/2017 09:25
TEXT : ..\Examples\TROMPSBERG.txt

ELEVATION :
X-COORD :
Y-COORD :

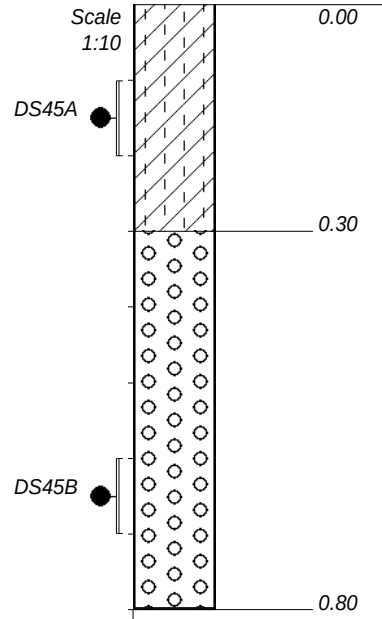
HOLE No: TP 44

dotPLOT

Engineering Aces
Trompsberg Landfill Site

HOLE No: TP 45
Sheet 1 of 1

JOB NUMBER: 171019



0.00 Moist red stiff intact silty CLAY.

0.30 Moist brown dense intact sugary GRAVEL.

0.80

NOTES

1) Centre of the landfill site.
2) No refusal.
3) No ground water encountered.
4) Disturbed sample DS45A at 0,1--0,2 m.
5) Disturbed sample DS45B at 0,6--0,7 m.

CONTRACTOR :
MACHINE : TLB
DRILLED BY :
PROFILED BY : Tsoeu J Mokaloba/Khoathela Kou
TYPE SET BY : T. J. Mokaloba
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 19/10/2017
DATE : 01/11/2017
DATE : 01/11/2017 09:25
TEXT : ..\Examples\TROMPSBERG.txt

ELEVATION :
X-COORD :
Y-COORD :

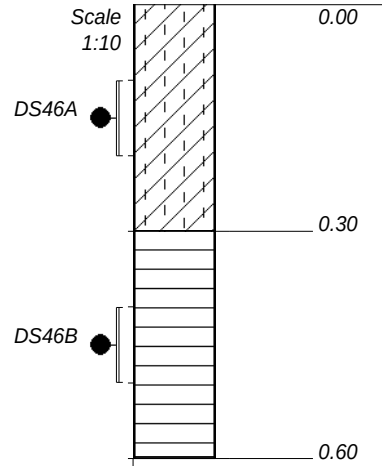
HOLE No: TP 45

dot PLOT

Engineering Aces
Trompsberg Landfill Site

HOLE No: TP 46
Sheet 1 of 1

JOB NUMBER: 171019



0.00 Moist red stiff intact silty CLAY.

0.30 Moist grey dense intact MUDROCK.

0.60

NOTES

1) No refusal.
2) No ground water encountered.
3) Disturbed sample DS46A at 0,1--0,2 m.
4) Disturbed sample DS46B at 0,4--0,5 m.

CONTRACTOR :
MACHINE : TLB
DRILLED BY :
PROFILED BY : Tsoeu J Mokaloba/Khoathela Kou
TYPE SET BY : T. J. Mokaloba
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 19/10/2017
DATE : 01/11/2017
DATE : 01/11/2017 09:25
TEXT : ..\Examples\TROMPSBERG.txt

ELEVATION :
X-COORD :
Y-COORD :

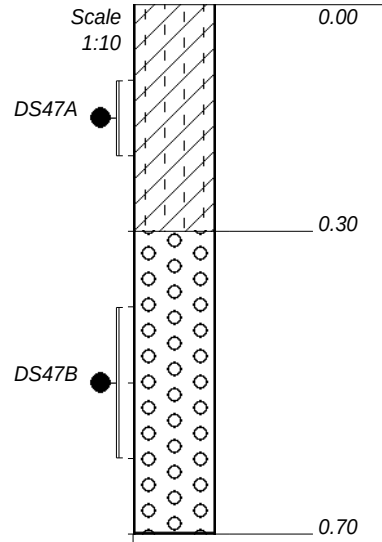
HOLE No: TP 46

dotPLOT

Engineering Aces
Trompsberg Landfill Site

HOLE No: TP 47
Sheet 1 of 1

JOB NUMBER: 171019



0.00 Moist red stiff intact silty clay.

0.30 Moist yellowish brown dense intact basaltic GRAVEL.

0.70

NOTES

1) No refusal.
2) No ground water encountered.
3) Disturbed sample DS47A at 0,1--0,2 m.
4) Disturbed sample DS47B at 0,4--0,6 m.

CONTRACTOR :
MACHINE : TLB
DRILLED BY :
PROFILED BY : Tsoeu J Mokaloba/Khoathela Kou

INCLINATION :
DIAM :
DATE : 19/10/2017
DATE : 01/11/2017

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP 47

TYPE SET BY : T. J. Mokaloba
SETUP FILE : STANDARD.SET

DATE : 01/11/2017 09:25
TEXT : ..\Examples\TROMPSBERG.txt

dotPLOT

Engineering Aces
Trompsberg Landfill Site

LEGEND
Sheet 1 of 1

JOB NUMBER: 171019

	GRAVEL	{SA02}
	SILT	{SA06}
	SILTY	{SA07}
	CLAY	{SA08}
	MUDROCK	{SA12}
Name	DISTURBED SAMPLE	{SA38}

CONTRACTOR :
MACHINE :
DRILLED BY :
PROFILED BY :

INCLINATION :
DIAM :
DATE :
DATE :

ELEVATION :
X-COORD :
Y-COORD :

TYPE SET BY : T. J. Mokaloba
SETUP FILE : STANDARD.SET

DATE : 01/11/2017 09:25
TEXT : ..\Examples\TROMPSBERG.txt

LEGEND
SUMMARY OF SYMBOLS

Appendix D Summary of Test Results

GEOTECHNICAL
ENGINEERING LABORATORY (PTY) LTD

Head Office (Maseru):
Off Kofi Annan Road, Ha Tsolo
Private Bag Z041
Maseru-West 0105, Lesotho

Tel: +266 28325279
Cell: +266 5885 5899
Cell: +266 62855899

Bloemfontein office:
14 Kenneth Kaunda
Navalsig
Bloemfontein, 9301

Cell: +27 60 341 0052

E-mail: tsoeujm@hotmail.com

Engineering Aces
27024 Vista Park
Bloemfontein
9301

Attention: Mr Stephen Mothobi
Project: Trompsburg Landfill Site

SUMMARY OF TEST RESULTS

Test Pit No.	Depth (m)	Simplified Description	Simplified Sieve analysis					Atterberg Limits			G.M	CBR at Modified AASHTO density				% Swell at 100 % of Mod.	TRH 14 classificati
			63.0 mm	19.0 mm	2.0 mm	0.425 mm	0.075 mm	LL %	PI %	LS %		98 %	95 %	93 %	90 %		
TP 43a	0.3-0.4	Yellow silt		100	61.7	40.8	18.6	28	8	4	1.8						
TP 43b	0.6-0.7	Grey basaltic gravel	100	53.0	26.5	12.4	5.1	28	4	2	2.6	28.1	**22.0**	**17.5**	11.3	**0.2**	**G7**
TP 44a	0.6-0.7	Red silty clay		100	97.1	84.2	34.5	21	6	3	0.8						
TP 44b	0.9-1.0	Rey basaltic gravel		100	11.1	4.5	1.9	28	6	3	2.8	18.6	**16.4**	**15.7**	14.2	**0.3**	**Nil**
TP 45a	0.1-0.2	Red silty clay		100	98.6	93.0	56.1	26	6	3	0.5						
TP 45b	0.6-0.7	Brown sugary basalt	100	52.4	21.5	11.2	4.4	26	4	2	2.6	30.6	**24.0**	**19.5**	12.6	**0.6**	**G7**
TP 46a	0.1-0.2	Red silty clay		100	96.5	90.6	53.6	29	10	5	0.6						
TP 46b	0.4-0.5	Grey mudrock	100	70.1	44.9	38.4	21.4	32	13	6	2.0	8.7	**7.2**	**6.2**	4.7	**2.1**	**Nil**
TP 47a	0.1-0.2	Red silty clay		100	74.7	48.1	22.6	21	5	2	1.5						
TP 47b	0.4-0.6	Yellowish brown basaltic gravel	100	69.1	42.1	25.7	12.3	24	5	2	2.6	31.8	**25.0**	**20.4**	13.8	**0.4**	**G6**