LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
AGRICULTURE AND RURAL DEVELOPMENT

TENDER NO. ACDP 24/01
TENDER DOCUMENT
FOR

A 3-YEAR FRAMEWORK AGREEMENT FOR DRILLING, TESTING AND EQUIPPING OF BOREHOLES, FOR THE LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

NAME OF TENDERER	
TOTAL TENDERED AMOUNT	
TOTAL TENDERED AMOUNT IN WORDS	
VAT NUMBER (if registered for VAT)	
SUPPLIER CSD REGISTRATION NUMBER	
TAX COMPLIANCE STATUS PIN (to verify bidder's tax compliance status)	
TEL NUMBER	
CELL NUMBER	

PREPARED FOR:

LIMPOPO PROVINCIAL GOVERNMENT
DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

HEAD OF DEPARTMENT
LIMPOPO DEPT OF AGRICULTURE & RURAL DEVELOPMENT
PRIVATE BAG X 9487
POLOKWANE
0700

PREPARED BY

LIMPOPO PROVINCIAL GOVERNMENT
DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

ENGINEERING SERVICES HEAD OFFICE
LIMPOPO DEPT OF AGRICULTURE & RURAL DEVELOPMENT
TEMO TOWERS
69 BICCARD STREET
PIOLKWANE
0700

CLOSING DATE: 11 JULY 2024 TIME: 11:00

BRIEFING MEETING: 20 JUNE 2024 TIME: 10:00

A 3-YEAR FRAMEWORK AGREEMENT FOR DRILLING, TESTING AND EQUIPPING OF BOREHOLES, FOR THE LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

TENDERER'S DETAILS

NAME OF TENDERER ……..

……..

……..

PHYSICAL ADDRESS ……..

……....

……..

POSTAL ADDRESS ……..

……..

CONTACT PERSON (NAME) ……

(SURNAME) ……

(PHONE No) ……

(CELL No) ……...

(FAX No) ……....

(E-MAIL) ……

LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

A 3-YEAR FRAMEWORK AGREEMENT FOR DRILLING, TESTING AND EQUIPPING OF BOREHOLES, FOR THE LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

Contents

Drawings

SCHEDULE OF TENDER DRAWINGS

Drawings will be issued during the stage with the request to give quotations for a specific project in terms of Clause 1(i) (j) of the General Conditions of Contract.

DRAWING NO:	DESCRIPTION:
1701321-TY-04	Borehole Information Plate Detail
1701321-TY-05	Lockable Fabricated Steel Manhole for Submersible Pump
1701321-TY-06	Lockable Manhole and Submersible Pump Details
1701321-TY-07	Pump Control Panel Typical Layout Diagram

The Tenderer shall satisfy himself that the sets of drawings are complete in accordance with the schedule, and if any are found to be missing or duplicated, or the writing or figures indistinct, he shall apply to the Engineer immediately and have the discrepancy rectified. No liability whatsoever will be admitted by the Employer in respect of errors in Bids attributed to any such discrepancy.

PART T1: TENDERING PROCEDURES

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T1.1: TENDER NOTICE AND INVITATION TO TENDER

T1.1: TENDER NOTICE AND INVITATION TO TENDER

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
AGRICULTURE AND RURAL DEVELOPMENT

BID NO ACDP 24/01

A 3-YEAR FRAMEWORK AGREEMENT FOR DRILLING, TESTING AND EQUIPPING OF BOREHOLES, FOR THE LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

T1.1 TENDER NOTICE AND INVITATION TO TENDER

Tenderers are hereby invited to tender for the DRILLING, TESTING AND EQUIPPING OF BOREHOLES for the Limpopo Department of Agriculture and Rural Development. **Tenderers should have a CIDB contractor grading of 3CE or 3ME and higher.**

Tender documents will be obtainable from the Departmental Website, on the following link: www.ldard.gov.za No payment is required to down-load the document from the Website.

Duly completed submissions enclosed in a sealed envelope marked **"A 3-YEAR FRAMEWORK AGREEMENT FOR DRILLING, TESTING AND EQUIPPING OF BOREHOLES: NO ACDP 24/01, CLOSING DATE: 11 JULY 2024"** with the name of the Contractor, shall be deposited in the clearly marked tender box provided at Limpopo Department of Agriculture, 67/69 Biccard Street, Polokwane before **11:00** on the closing date. The tenders will be opened in public.

A Compulsory briefing session will be conducted on **20 JUNE 2024** and prospective Contractors are requested to meet the Engineer at **10:00** at the Offices (Parking area) of the Department of Agriculture and Rural Development at 67/69 Biccard Street, Polokwane, Limpopo. Contract documentation will not be available at the meeting.

The technical ability of each Company to render the service will be evaluated. All the companies that meet the minimum requirements will be registered onto the database into the applicable category. Framework agreements will be entered into with all the qualifying companies to shorten the procurement process during the evaluation of quotations.

Contractors must have the necessary qualifications, experience and capacity to perform the required work.

BIDDING PROCEDURE:	**TECHNICAL INFORMATION:**
Mr Ndlozi VS Limpopo Department of Agriculture and Rural Development Private Bag X9487 Polokwane 0700 Tel: 015- 294 3564 Email: ndloziv@agric.limpopo.gov.za	Mr MJ Gouws Limpopo Department of Agriculture and Rural Development Private Bag X9487 Polokwane 0700 Tel: 015- 294 3539 Cell: 060 967 4127 Email: gouwsmj@agric.limpopo.gov.za

T1.2. TENDER DATA

The Conditions of Tender in the Standard Conditions of Tender as contained in Annex F of CIDB Standard Uniformity in Construction Procurement. (See www.cidb.org.za) which are reproduced without amendment or alteration for the convenience of Tenderers in this Tender in the section T1.3 of the Tender Data.

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 Tender Data given below is cross-referenced to the relevant clause in the standard Conditions of Tender.

F.1.1 The Employer for this Contract is: **Limpopo Department of Agriculture and Rural Development**

F.1.2 Tender Documents

The Tender Document consists of the following:

TENDER

T1: Tendering Procedures
- T1.1: Tender Notice and Invitation to Tender
- T1.2 : Tender Data
- T1.3 : Standard Conditions of Tender

T2 : Returnable Documents
- T2.1: List of Returnable Documents
- T2.2: Returnable schedules

CONTRACT

Part 1: Agreements and Contract Data
- C1.1: Form of Offer and Acceptance
- C1.2: Contract Data
- C1.3: Form of Guarantee
- C1.4: Agreement with Adjudicator
- C1.5: Agreement in terms of Section 37(2) of the Occupational Health and Safety Act (No 85, 1993)

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

Part 3: Scope of Work
- C3.1: Standard Specifications
- C3.2: Project Specifications
- C3.3: Particular Specifications

Part 4: Site Information
- C4.1: Locality Plan
- C4.2: Construction Notice Board

DRAWINGS

Drawings are bound in this document.

The Tender Document and the drawings shall be obtained from the Employer or his authorized representative from the Departmental Website, on the following link: www.ldard.gov.za No payment is required to off-load the document from the Website.

F.1.4 The Employer's agent is:

Name	:	District Engineer (Capricorn; Mopani; Sekhukhune; Vhembe; Waterberg)
Name	:	Limpopo Department of Agriculture & Rural Development
Address	:	District Office (Capricorn; Mopani; Sekhukhune; Vhembe; Waterberg)

Telephone

E-Mail Address :

F.1.5 The Employer's right to accept or reject any Tender Offer

The Employer may accept or reject any variation, deviation, 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. The Employer will reserve the right to appoint more than one (1) tenderer.

F.2.1 Eligibility

A Tenderer will not be eligible to submit a Tender if:

(a) The Contractor submitting the Tender is under restrictions or has principals who are under restriction to participate in the Employer's procurement due to corrupt of fraudulent practices;
(b) The Tenderer does not have the legal capacity to enter into the Contract;
(c) The Contractor submitting the Tender is insolvent, in receivership, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his business activities, or is subject to legal proceedings in respect of the foregoing;
(d) The Tenderer does not comply with the legal requirements stated in the Employer's procurement policy;
(e) The Tenderer cannot demonstrate that he possesses the necessary professional and technical qualifications and competent, financial resources, equipment and other physical facilities, managerial capability, personnel, experience and reputation to perform the Contract;
(f) The Tenderer cannot provide proof that he is in good standing with respect to duties, taxes, levies and contributions required in terms of legislation applicable to the work in the Contract.
(g) Only those Tenderers who have in their employ management and supervisory staff satisfying the requirements of the Scope of Work for Labour Intensive Competencies for supervisory and management staff are eligible to submit Tenders.
(h) Only those Tenderers who are registered with the CIDB as defined in the Regulations 09 June 2004 and 22 July 2005), in terms of the CIDB Act No 38 of 2000 or are capable of being so 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 for a 3CE or 3ME or higher class of construction work, are eligible to submit Tenders.
(i) The Contractor submitting the Tender is not registered on the Employer's Supplier Database

Joint Ventures are eligible to submit Tenders provided that:

1. At least one (1) member of the Joint Venture is registered with the CIDB and the partner with the CIDB grading has a Contractor grading designation in the 3CE or 3ME or higher class of construction work.
2. Should this bid be submitted by a joint venture, the joint venture agreement must accompany the bid document before the closing date and time of bid. The joint venture agreement must clearly specify the percentage of the contract to be undertaken by each company participating therein.
3. The joint venture or consortium must submit a formal agreement that outlines the roles and responsibilities of each member of the joint venture or consortium, nomination of an authorised person to represent the joint venture or consortium in all matters relating to this bid and the details of the bank account for payments to be affected.
4. The joint venture or consortium must comply with Central Suppliers Database (CSD) registration requirements as per National Treasury directive.

F.2.7 Site visit and clarification meeting

The arrangements for the compulsory tender briefing meeting are as follows:

Location: AgriVillage, Parking area, 67/69 Biccard Street, Polokwane

Date: 20 JUNE 2024 Starting time: 10H00

Enquiries at least one full working day in advance regarding the meeting may be directed to:

Name	:	MJ Gouws
Name	:	Limpopo Department of Agriculture & Rural Development
Address	:	67/69 Biccard Street Polokwane, 0699
Telephone	:	015 294 3539
Cell No.	:	060 967 4127
E-Mail	:	gouwsmj@agric.limpopo.gov.za

Tenderers must sign the attendance list and name of the Tendering entity. Addenda will be issued and Tenders will be received only from those Tendering entities appearing on the attendance list.

F.2.10 Pricing the Tender Offer

(a) Value Added Tax

- The Valued Added Tax (VAT) rate shall be 15% or as otherwise provided for by Legislation.
- The successful Tenderer shall be required to produce a VAT invoice that shall only be prepared once measurements and valuations for work done in Terms of Contract Offer have been agreed with the Employers agent and a Certificate of Payment issued.
- Payment of VAT to non-VAT vendors shall be processed from the month in which the Tenderer's liability with the South African Revenue Services is effective.

F.2.11 Alterations to document

A Tender Offer shall not be considered if alterations have been made to the Forms of Tender data or Contract data (unless such alterations have been duly authenticated by the Tenderer) or if any particulars required therein have not been completed in all respects.

F.2.12 Alternative Tender Offers

No alternative Offers will be considered.

F2.13 Submitting a Tender Offer

F.2.13.3 Tender Offers shall be submitted as an original only.

Under no circumstances whatsoever may the Tender forms be retyped or redrafted.

Photocopies of the original Tender documentation may be used, but an original signature must appear on such photocopies.

F.2.13.5 The Employer's address for delivery of Tender Offers and identification details to be shown on such Tender Offer package are:

Location of Tender box:	Limpopo Department of Agriculture and Rural Development
Physical address:	67/69 Biccard Street Polokwane, 0700

Identification details: **A 3-YEAR FRAMEWORK AGREEMENT FOR DRILLING, TESTING AND EQUIPPING OF BOREHOLES**

Tender No: **ACDP 24/01**

Closing Date**:** **11 JULY 2024 at 11:00**

F.2.15 Closing Time

The closing time for submission of Tender Offers is: **11h00** on 11 JULY 2024 as stated in the Tender Notice and Invitation to Tender.

Telephonic, telegraphic, telex, facsimile, electronic or e-mailed Tenders will not be accepted.

F.2.16 Tender Offer validity

The Tender Offer validity period is 240 days from the closing time for submission of Tenders.

F.2.17 Clarification of tender offer after submission

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

Note: Sub-clause F.2.17 does not preclude the negotiation of the final terms of the contract with a preferred tenderer following a competitive selection process, should the Employer elect to do so, this may include negotiations for fair market related prices.

F.2.18 Provide other material

The Tenderer shall, when requested by the Employer to do so, submit the names of all management and supervisory staff that will be employed to supervise the labour-intensive portion of the works together with satisfactory evidence that such staff members satisfy the eligibility requirements.

F.2.19 Access

Access shall be provided for inspections and testing by personnel acting on behalf of the Employer.

F.2.20 TENDER EVALUATION CRITERIA

F.2.20.1 <u>Qualifying Criteria</u>

Pre-Compliance Evaluation

Criteria	**Requirements**
Pre-compliance criteria.	The Service Provider must submit all documents as outlined below.
Preferential points for specific goals.	Bidders will be allocated preferential points for specific goals as per table 7.2.2 c. in SBD 6.1.

The evaluation process entails the following:
Phase 1: Pre-Compliance evaluation

i. During this phase, tender responses are registered to ascertain the number of tenders responses received before the closing date and time.
ii. REQUIRED DOCUMENTS
Misrepresentation of facts will render your tender non-responsive.

Documents that must be submitted	Non-submission will result in disqualification	Requirements
Invitation to Bid – SBD 1	YES	Fully complete and sign the supplied pro forma document.
Pricing Schedule – SBD 3.2	YES	Fully complete and sign the supplied pro forma document.
Bidders Disclosure – SBD 4	YES	Complete and sign the supplied pro forma document. (**Must declare if they have interests in other Companies. Refer to Paragraph 2.3). In case of J/V's bidders should complete separate SBD 4's.**
Preference Point Claim Form – SBD 6.1	YES	Non-Returnable of the supplied pro forma document will lead to Disqualification. **Non-claiming of points on this form will lead to zero (0) even if supporting documentation is attached.**
Joint Ventures (J/V)	YES	Attach a valid JV agreement. Non-submission will lead to disqualification. In the case of an award, the company need to register on CSD as a JV. The process is that the service providers must register the JV at SARS and then open a JV bank account. With those documents they can then register the JV on the CSD. **The department will only make payment to a JV account.**
Form of intent by a bank or insurance company to provide a 10% performance guarantee and insurance of the works.	YES	Must be submitted with the tender by the closing date and time of the bid. In case of JV, both partners must submit / be represented on the submission.
Workmen's Compensation Registration Certificate	NO	Must submit valid copy of COIDA certificate or proof of payment thereof. In case of JV, both partners must submit.
Completeness of the tender document.	YES	Bidders are required to complete the entire bid document without omission of pages and in the provided sequence. Supporting documents must be attached with list of indexes/ Annexures and in order of the indicated index sequence. The tender document to be fully completed in **Black ink (not typed)**
Specification	YES	Must comply with the specification
Current works load declaration.	YES	Wrong declaration on current works and / or if the bidder is in default, will lead to disqualification.
Bank Rating	YES	Bank rating letter from a financial institution with track record of at least 6 months. Bidders must have a minimum rating of C. In case of JV, both partners must submit.
Bill of Quantities	YES	All items of the BOQs must be fully completed (rates, amounts and sums), responsive and submitted with the bid by the closing date and time.
CIDB grading certificate	YES	Bidder must submit CIDB grading certificate of 3CE or 3ME and higher. In case of JV, Calculated CIDB grading must be submitted.
Compulsory Enterprise Questionnaire	YES	Must be fully completed, signed by the authorized person/s and submitted with the bid by the closing date and time. **In case of J/V's bidders should complete separate forms or be represented.**
Attendance Register for the Compulsory site briefing	YES	Must attend the compulsory site briefing as per scheduled date and time and ensure to sign the attendance register.

iii. The Service Provider must ensure that they meet the following requirements before the bid can be awarded:

CRITERIA	REQUIREMENT
Tax compliance status	Tenderer must be tax compliant before the bid is awarded, i.e. *Where the recommended tenderer is not tax compliant, the tenderer will be notified of their non-compliant status and must be requested to submit written proof from SARS of their tax compliance status or proof that they have made an arrangement to meet their outstanding tax obligations within 7 working days. The tenderer should thereafter provide the accounting officer or accounting authority with proof of their tax compliance status which should be verified via the Central Supplier Database or e-Filing"*
Business registration	The Company must be in business
Company registration with central supplier database (CSD)	Company must be registered on central supplier database (CSD). If not registered must proceed to complete the registration prior to submitting your proposal. Visit https://secure.csd.gov.za/ to obtain your vendor number.
In the service of the State status	The bid will not be considered if Shareholders or directors are employed by state/ government departments, municipalities, municipal entities, or public entities unless **the approval from executive authority to do business with the state is submitted with the proposal**
Tender defaulting and restriction status	Entity and directors must not be restricted

F.2.20.2 Functionality Evaluation Criteria = 100 points

The minimum score required for functionality is 70 points in order to qualify to be registered into the Departmental Data base for the Drilling, Testing and equipping of Boreholes. A tenderer who scores less than 70 points on functionality will be disqualified.
Misrepresentation of facts will render a bid non-responsive.

CRITERIA	EVIDENCE	VALUE	WEIGHTING
1. Borehole Drilling and Testing Staff: Experience of Staff **Evidence** Attach brief CV with certified copies of experience and Identity document for each Key member of the Drilling, Testing and Installation Staff for evaluation.	No information.	0	20
	Have at least 1 staff member of each of the 2 groups of Drilling and Testing Staff with less/more than 5 years applicable experience: 1) Site Agent, Drilling Foreman, Testing Foremen, Plumber 2) Drilling Artisan, Testing Artisan, Electrician	1	
	Have at least 2 staff members of each of the 2 groups of Drilling and Testing Staff with more than 5 years applicable experience: 1) Site Agent, Drilling Foreman, Testing Foremen, Plumber 2) Drilling Artisan, Testing Artisan, Electrician	3	
	Have all the staff of the 2 groups for Drilling and Testing with more than 5 years applicable experience: 1) Site Agent, Drilling Foreman, Testing Foremen, Plumber 2) Drilling Artisan, Testing Artisan, Electrician	5	
2. Construction Vehicles, Plant & Equipment. **Evidence:** Bidders must attach copies of Ownership documents or copies of Hire contracts or Letter of intention to Hire from the Hire Company with their submission. (Hire Company proof of ownership documents) Copies must be certified.	No information or None.	0	30
	Only comply with 1 or 2 of the 3 groups. Have the following number of Drilling and Testing Plant and Equipment available for this contract: 1) **One** of: Complete Drilling Rig, Compressor and relevant tools and equipment (Owned or Hire contract or Letter of intent) 2) **One** of: Complete Borehole Testing Rig with all relevant tools and equipment (Owned or Hire contract or Letter of intent) 3) **One** of: Applicable support vehicles for the Drilling and Testing operations. (Owned or Hire contract or Letter of intent)	1	
	Comply with all 3 groups. Have the following number of Drilling and Testing Plant and Equipment available for this contract: 1) **One** of: Complete Drilling Rig, Compressor and relevant tools and equipment (Owned or Hire contract or Letter of intent)	3	

	2) **One** of: Complete Borehole Testing Rig with all relevant tools and equipment (Owned or Hire contract or Letter of intent) 3) **One** of: Applicable support vehicles for the Drilling and Testing operations. (Owned)		
	Have the following number of Drilling and Testing Plant and Equipment available for this contract: 1) **One** of: Complete Drilling Rig, Compressor and relevant tools and equipment (Owned) 2) **One** of: Complete Borehole Testing Rig with all relevant tools and equipment (Owned) 3) **Two** of: Applicable support vehicles for the Drilling and Testing operations. (Owned)	5	
3. Experience of Borehole Drilling, Testing and Installation. **Evidence** Attach a list of projects successfully completed in a table format stating: Project name and Client name with contact information and Date of site handover and Project completion date. (**Also attach proof and supporting documents of the above as follows: copies of appointment letters and documents that state the contract period and completion certificates and contact information of the clients for verification).** .	No information or not sufficient information to enable a proper evaluation.	0	35
	1 to 10 Drilling and 1 to 10 Testing of Borehole projects successfully completed that include all the operations; Execution of the work; Recording of drilling and testing information; Closing and marking of borehole; Collection of water samples for chemical analysis, since January 2014. Table and means of verification attached.	1	
	11 to 20 Drilling and 11 to 20 Testing of Borehole projects successfully completed that include all the operations; Execution of the work; Recording of drilling and testing information; Closing and marking of borehole; Collection of water samples for chemical analysis, since January 2014. Table and means of verification attached.	3	
	More than 20 Drilling and 20 Testing of Borehole projects successfully completed that include all the operations; Execution of the work; Recording of drilling and testing information; Closing and marking of borehole; Collection of water samples for chemical analysis, since January 2014. Table and means of verification attached.	5	
4. Current Obligation Works. NB!! Completion of this provided Table is mandatory for points to be allocated. Do not refer to any attachment. If no projects at the moment, the tenderer must indicate on the table (Not applicable will be deemed as non-responsive).	The current obligation value is equal to or greater than twice the maximum value of the required CIDB grade.	0	5
	The current obligation value is greater than the maximum value of the required CIDB grade but less than twice the maximum value of the required CIDB grade.	1	
	Current obligation value is within the required CIDB threshold.	3	
	Current obligation value is less than the minimum value of the required CIDB grade.	5	
5. Proof of physical address Evidence Bidders must submit proof of residence from Local Municipality (Utility bill) or Confirmation of pre-paid utility from ESKOM (not older than 3 months) **and** Title Deed or Lease agreement or PTO **and** any other proof of address.	Office of bidder outside borders of Limpopo Province	0	10
	Office of bidder within borders of Limpopo Province	5	

Total			**100**

F.3.11 Evaluation of Offers
Evaluation in terms of 90/10 preference point system.

a) The preferential points will be allocated for specific goals as prescribed in Section 2 of the Preferential Procurement Policy Framework Act (5 of 2000), Paragraph 3.2.1 and 7.7 of the Reconstruction and Development Programme White Paper of 1994 and the Broad-Based Economic Empowerment Act, 2003.

b) When calculating prices:
   i. Unconditional discounts must be taken into account for evaluation purposes; and
   ii. Conditional discounts must not be taken into account for evaluation purposes but should be implemented when payment is affected.

c) The following formula must be used to calculate the points for price of tenders/procurement (quotations) including "tenders for income generating contracts" with Rand Value **above R50 Million** to be calculated as per the below table inclusive of all applicable taxes:

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

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

d) A maximum of 10 points will be awarded in accordance with the table below:

NO	PREFERANTIAL GOALS	10 POINTS	MEANS OF VERIFICATION
1	Black People ownership > 51%	7	CSD report and copy of company registration document
2	Women Ownership > 51%	1	Identity document
3	Persons with Disability Ownership >51%	1	Latest three months valid Medical Report from the registered Medical Practitioner and CSD report
4	Youth Ownership >51%	1	Identity document
TOTAL POINTS		10	

e) The points scored by a tenderer in respect of the specific goals above must be added to the points scored for price and the total must be rounded off to the nearest two decimal places.
f) Only the tender with the highest number of points scored may be selected for an award.

Special Conditions

- All costs incurred in the preparation and presentation of the proposal shall be wholly absorbed by the bidder. Supporting documentation submitted with the proposal will become the property of the Limpopo Provincial Government unless otherwise requested by the bidder at the time of submission.
- General Conditions of Contract 2010 2nd edition (GCC2010) shall be used to manage the contract. Service provider must acquire their own copy.
- All works under this contract are re-measurable.
- The documentation required before commencement with Works execution is:
  - Health and Safety Plan (Refer to GCC Clause 4.3)
  - Initial programme (Refer to GCC Clause 5.6)

- Security (Refer to GCC Clause 6.2 – Performance Guarantee)
- Insurance (Refer to GCC Clause 8.6)

- The penalty for failing to complete the works is **0.05%** of the Total Tender Sum per Calendar Day.
- The limit of retention money is 10% of the Tender offer, excluding VAT and limited to 5% of the Contract amount, excluding Contract Price Adjustment, Contingencies and VAT. A Retention Money Guarantee will not be permitted.
- **It is compulsory for a person to register for VAT if the value of taxable supplies made or to be made, is in excess of R1 million**
- The defects liability period is **12 months.**
- The latent defect period is **5 years**
- Bidders who intend to cede their rights to payment to an institution as prescribed in 9.1 should attach cession agreement with their bid proposal.
- Payment will only be made in accordance with the delivery of service that will be agreed upon by both parties and upon receipt of an original invoice.
- The service provider is required to provide a quote for all items, failure to quote according to the specification will invalidate your bid.
- The Department will not make any upfront payment to a successful service provider.
- The department reserves the right to conduct a risk assessment for the recommended service provider to verify the provided information and authenticate the supporting documentation and may disqualify the service provider if the risk analysis feedback is negative.

Inspection of Bidders

The premises of all the Tenders that achieved the minimum score of 70% will be inspected. The inspection will be done on the following:

a) Physical structure or business where business activities take place.
b) Main business activities
c) Track record will be verified.
d) Relatedness of the main business activities to the tender under review.
e) Office furniture and space.
f) Office Equipment, IT facilities and computer software used to produce the required service.
g) Registration documents and accredited certificates.
h) Audited Financial annual statements to verify financial position.
i) Verification of Drilling and Testing Equipment, including 3rd party premises if required.

Joint Ventures

1. Should this bid be submitted by a joint venture, the joint venture agreement must accompany the bid document before the closing date and time of bid. The joint venture agreement must clearly specify the percentage of the contract to be undertaken by each company participating therein.
2. Each party to a Joint Venture/ Consortium must submit an original valid Tax Clearance Certificate together with the bid before the closing date and time of bid.
3. The joint venture or consortium must submit a formal agreement that outlines the roles and responsibilities of each member of the joint venture or consortium, nomination of an authorised person to represent the joint venture or consortium in all matters relating to this bid and the details of the bank account for payments to be effected.
4. The joint venture or consortium must comply with Central Suppliers Database (CSD) registration requirements as per National Treasury directive.
5. Both companies to a J/V should complete separate forms or be represented for Compulsory Enterprise Questionnaire.
6. Both companies to a J/V should submit Bank Rating
7. Both companies to a J/V should submit should complete separate SBD 4 for each company
8. In case of JV, Calculated CIDB grading must be submitted.

Cession

1. Cession of payments will only be permissible to a registered financial institution in terms of the Financial Advisory and Intermediary Services Act 37 of 2002 or an approved credit provider in terms of the National Credit Act of 2005
2. Bidders who intend to cede their rights to payment to an institution as prescribed in 8.1 attach cession agreement with their bid proposal.

Unsatisfactory Performance

Unsatisfactory performance occurs when performance is not in accordance with the contract conditions.

(i) The departmental official shall warn the contractor in writing that action will be taken in accordance with the contract conditions unless the contractor complies with the contract conditions and delivers satisfactory supplies or services within a specified reasonable time (7 days minimum). If the contractor does not perform satisfactorily despite the warning, the official will:
   (a) Take action in terms of its delegated powers; and
   (b) Make a recommendation to the Accounting Officer for cancellation of the contract concerned.

(ii) When correspondence is addressed to the contractor, reference will be made to the contract number/item number/s and an explanation of the complaint.

Validity Period of Bid and Extension thereof

1. The validity (binding) period for the bid will be 240 days from close of bid. However, circumstances may arise whereby the department may request bidders to extend the validity (binding) period. Should this occur, the department will request bidders to extend the validity (binding) period under the same terms and conditions as originally offered for by bidders. This request will be done before the expiry of the original validity (binding) period.
2. VAT vendors must calculate VAT at 15% VAT.

Site Inspection

1. As part of the evaluation process of this bid, the Department will conduct site inspections of premises of all service bidders who have submitted bids and
2. The purpose of the site inspections is to confirm validity and accuracy of the information submitted in the bidder's bid document. Where the validity and accuracy of the information submitted in the bidder's bid document cannot be confirmed during the site visit, the bidder will be disqualified.

Completion of Bid Document

The following are minimum requirements for completion of the bid document: -

1. Bidders are required to complete the entire bid document in terms of the requirements contained herein.
2. Where the space provided in the bid document is insufficient, separate schedules may be drawn up in accordance with the given formats. These schedules shall then be bound together with suitable contents page and submitted with the bid documents.
3. All bid documents, certificates, schedules (including additional schedules as mentioned above) and all forms required by this bid must be completed in black ink and signed by the authorized signatory.
4. Bid document should be returned in the provided sequence. Attachments must be inline with the index sequence of the bidder.
5. Bidders must ensure that there are no missing or duplicated pages. LDARD shall not accept liability regarding claims by bidders that pages are missing or duplicated.
6. Correction fluid is not allowed and any cancellation, alteration or amendment on the bid document must be signed for by the authorized signatory.
7. Completed bid document with supporting documents shall be packaged, bound, sealed, marked, and submitted strictly as stipulated in this bid document.

F.3.13 Acceptance of Tender Offer

F.3.13.1 Tender Offers will only be accepted on condition that:

a) the Submission is signed by a person authorised to sign on behalf of the Tenderer.
b) a Tenderer who submitted as a Joint Venture has included an acceptable Joint Venture Agreement with his Submission.
c) the Tenderer or a competent authorised representative of the Company who submitted the Submission has attended the compulsory clarification meeting.
d) the Tenderer or any of its principals is <u>not</u> listed on the register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the Public Sector.
e) the Tenderer has <u>not</u> abused the Employer's Supply Chain Management System or has failed to perform on any previous Contract and has been given a written notice to this effect.

f) the Tenderer or any of its Principals, Directors or Managers is not employed in the service of the State or any Municipality. In the event that such Principals are involved, official approval from the Executing Authority regarding carrying out remunerative work outside of the Public Service must be included in the Submission.
g) the Employer is satisfied that the Tenderer or any of his Principals have not influenced the Call for Expression of Interest Submission and acceptance by the following criteria:
   a. having Offered, promised or given a bribe or other gift or remuneration to any person in connection with the obtaining or execution of this Contract.
   b. having acted in a fraudulent or corrupt manner in obtaining or executing this Contract.
   c. having approached an Officer or employee of the Employer or the Employer's Agent with the objective of influencing the award of a Contract in the Tenderer's favour.
   d. having entered into any agreement or arrangement, whether legally binding or not, with any other Person, Firm or Company to refrain from Tendering for this Contract or as to the amount of the Tender to be submitted by either party.
   e. having disclosed to any other Person, Firm or Company other than the Employer, the exact or approximate amount of his proposed Tender.
   f. the Employer may, in addition to using any other legal remedies, repudiate the Tender Offer and acceptance and declare the Contract invalid should it have been concluded already.

F.2.22 Return of Bid Documents

Not applicable.

F.2.23 Certificates

The Bidder is required to submit with his Bid the following:
- Joint Venture Agreement and Power of Attorney in case of Joint Ventures;
- VAT Registration Certificate from South African Revenue Services (SARS);
- Workmen's Compensation Registration Certificate (or proof of payment of contributions in terms of the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993);
- Form of intent by a bank or insurance company to provide a performance guarantee; (for open Bids)
- Company / CC / Trust / Partnership registration certificates;
- Certified Copies of Identity Document of all members of the entity (certification should not be more than 3 months old).

F.3.4 Opening of Bid Submissions

Bid will be opened immediately after the closing time for Bids. The time and location for opening of the Bid Offers are:
Time: **11:00**
Date: 11 JULY_2024
Venue: Limpopo Department of Agriculture and Rural Development, at the Tender Box

F.3.5 The two-envelope system will **not** apply to this Tender.

F.3.18 Copies of Contract
The number of paper copies of the signed Contract to be provided by the Employer is ONE.

T1.3: Annex F: Standard Conditions of Tender

(As contained in Annexure F of South African National Standard: Construction procurement processes, Methods and procedures: SANS 294: 2004 Edition)

F.1 General

F.1.1 Actions

The employer and each tenderer submitting a tender offer shall comply with these conditions of tender. In their dealings with each other, they shall discharge their duties and obligations as set out in F.2 and F.3, timeously and with integrity, and behave equitably, honestly and transparently.

F.1.2 Tender Documents

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

F.1.3 Interpretation

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

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

F.1.3.3 For the purposes of these conditions for the calling for expressions of interest, the following definitions apply:

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

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

c) **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

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

F.1.4 Communication and employer's agent

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

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

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

F.1.5.2 After the cancellation of a tender process or the rejection of all tender offers the employer may abandon the proposed procurement and re-issue a similar tender notice and invitation to tender not less than three months after the closing dated for tender offers or have it performed in another manner at any time.

F.2 Bidder's obligations

The Bidder shall comply with the following obligations:

F.2.1 Eligibility

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

F.2.2 Cost of tendering

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

F.2.3 Check documents

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

F.2.4 Confidentiality and copyright of documents

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

F.2.5 Reference documents

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

F.2.6 Acknowledge addenda

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

F.2.7 Clarification meeting

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

F.2.8 Seek clarification

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

F.2.9 Insurance

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

F.2.10 Pricing the tender offer

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

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

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

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

F.2.11 Alterations to documents

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

F.2.12 Alternative tender offers

F.2.12.1 Submit alternative tender offers only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted. The alternative tender offer is to be submitted with the main tender offer together with a schedule that compares the requirements of the tender documents with the alternative requirements the tenderer proposes.

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

F.2.13 Submitting a tender offer

F.2.13.1 Submit a tender offer to provide the whole of the works, services or supply identified in the contract data and described in the scope of works, unless stated otherwise in the tender data.

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

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

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

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

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

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

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

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

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

F.2.15 Closing time

F.2.15.1 Ensure that the employer receives the tender offer at the address specified in the tender data not later than the closing time stated in the tender data. Proof of posting shall not be accepted as proof of delivery. The employer shall not accept tender offers submitted by telegraph, telex, facsimile or e-mail, unless stated otherwise in the tender data.

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

F.2.16 Tender offer validity

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

F.2.16.2 If requested by the employer, consider extending the validity period stated in the tender data for an agreed additional period.

F.2.17 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 total of the prices or substance of the tender offer is sought, offered, or permitted. The total of the prices stated by the tenderer shall be binding upon the tenderer.

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

F.2.18 Provide other material

F.2.18.1 Provide, on request by the employer, any other material that has a bearing on the tender offer, the tenderer’s

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

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

F.2.19 Inspections, tests and analysis

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

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

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

F.2.21 Check final draft

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

F.2.22 Return of other tender documents

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

F.2.23 Certificates

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

NOTE: Failure to submit any of the above documents will result in disqualification

F.3 The employer's undertakings

The employer undertakes to:

F.3.1 Respond to clarification

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

F.3.2 Issue Addenda

If necessary, issue addenda that may amend or amplify the tender documents to each tenderer during the period from the date of the Tender Notice until seven days before the tender closing time stated in the Tender Data. If, as a result a tenderer applies for an extension to the closing time stated in the Tender Data, the Employer may grant such extension and, will then notify it to all tenderers who drew documents.

F.3.3 Return late tender offers

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

F.3.4 Opening of tender submissions

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

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

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

F.3.5 Two-envelope system

F.3.5.1 Where stated in the tender data that a two-envelope system is to be followed, open only the technical proposal of valid tenders in the presence of tenderers' agents who choose to attend at the time and place stated in the tender data and announce

the name of each tenderer whose technical proposal is opened.

F.3.5.2 Evaluate the quality of the technical proposals offered by tenderers, then advise tenderers who remain in contention for the award of the contract of the time and place when the financial proposals will be opened. Open only the financial proposals of tenderers, who score in the quality evaluation above the minimum number of points for quality stated in the tender data, and announce the score obtained for the technical proposals and the total price and any preferences claimed. Return unopened financial proposals to tenderers whose technical proposals failed to achieve the minimum number of points for quality.

F.3.6 Non-disclosure

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

F.3.7 Grounds for rejection and disqualification

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

F.3.8 Test for responsiveness

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

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

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

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

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

F.3.9 Arithmetical errors

Check responsive tender offers for arithmetical errors, correcting them in the following manner:

- Where there is a discrepancy between the amounts in figures and in words, the amount in words shall govern.

- If a bill of quantities (or schedule of quantities or schedule of rates) applies and there is an error in the line item resulting from the product of the unit rate and the quantity, the rate shall be binding and the error of extension as entered in the bid offer will be corrected by the Employer in determining the Contract Price.

- Where there is an error in addition, either as a result of other corrections required by this checking process or in the Bidder’s addition of prices, such error will be corrected by the Employer in determining the Contract Price.

- The Contract Price for the completed Contract shall be computed from the actual quantities of authorized work done and compliant with the Contract Data, valued at rates contracted against the respective items in the Bill of Quantities, Schedule of Quantities or Schedule of Rates and shall include such authorized Provincial Sums and items of extra work as have become payable in terms of the Contract Data.

F.3.10 Clarification of a tender offer

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

F.3.11 Evaluation of tender offers

F.3.11.1 General

Appoint an evaluation panel of not less than three persons. Reduce each responsive tender offer to a comparative offer and evaluate it using the tender evaluation method that is indicated in the Tender Data and described below:

Method 1: Financial offer	1) Rank tender offers from the most favorable to the least favorable comparative offer. 2) Recommend highest ranked tenderer for the award of the contract, unless there are compelling and justifiable reasons not to do so.
Method 2: Financial offer and preferences	1) Score tender evaluation points for financial offer. 2) Confirm that tenderers are eligible for the preferences claimed and if so, score tender evaluation points for preferencing. 3) Calculate total tender evaluation points. 4) Rank tender offers from the highest number of tender evaluation points to the lowest. 5) Recommend tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.
Method 3: Financial offer and quality	1) Score quality, rejecting all tender offers that fail to score the minimum number of points for quality stated in the Tender data. 2) Score tender evaluation points for financial offer. 3) Calculate total tender evaluation points. 4) Rank tender offers from the highest number of tender evaluation points to the lowest. 5) Recommend tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.
Method 4: Financial offer, quality and preferences	1) Score quality, rejecting all tender offers that fail to score the minimum number of points for quality stated in the Tender data. 2) Score tender evaluation points for financial offer. 3) Confirm that tenderers are eligible for the preferences claimed, and if so, score tender evaluation points for preferencing. 4) Calculate total tender evaluation points. 5) Rank tender offers from the highest number of tender evaluation points to the lowest. 6) Recommend tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.

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

F.3.11.2 Scoring Financial Offers

Score the financial offers of remaining responsive tender offers using the following formula:
N_{FO} = W_1 x A where:
N_{FO} = the number of tender evaluation points awarded for the financial offer.
W_1 = the maximum possible number of tender evaluation points awarded for the financial offer as stated in the Tender Data.
A = a number calculated using either formulas 1 or 2 below as stated in the Tender Data.

Formula	Comparison aimed at achieving	Option 1	Option 2
1	Highest price or discount	$A = (1+ \frac{(P - Pm)}{Pm})$	A = P / Pm
2	Lowest price or percentage commission / fee	$A = (1 - \frac{(P - Pm)}{Pm})$	A = Pm / P

Where:
Pm = the comparative offer of the most favorable tender offer.
P = the comparative offer of tender offer under consideration.

F.3.11.3 Scoring quality (functionality)

Score quality in each of the categories stated in the Tender Data and calculate total score for quality.

F.3.12 Insurance provided by the employer

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

F.3.13 Acceptance of tender offer

F.3.13.1 Accept tender offer only if the tenderer satisfies the legal requirements stated in Clause F.2.1 of the Tender Data.

F.3.13.2 Notify the successful tenderer of the employer's acceptance of his tender offer by completing and returning one copy of the form of offer and acceptance before the expiry of the validity period stated in the tender data, or agreed additional period. Providing the form of offer and acceptance does not contain any qualifying statements, it will constitute the formation of a contract between the employer and the successful tenderer as described in the form of offer and acceptance.

F.3.14 Notice to unsuccessful tenderers

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

F.3.15. Prepare contract documents

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

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

F.3.16 Issue final contract

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

F.3.17 Complete adjudicator's contract

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

F.3.18 Provide copies of the contracts

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

PART T2: RETURNABLE SCHEDULES

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T2.1 List of Returnable Documents

The Tenderer must complete the following Returnable Documents:

1 Returnable Schedules required only for Tender Evaluation purposes

A: Tenderer's Central Supplier Database (CSD) Summary Report
B: Record of Addenda to Tender Documents
C: Certificate of Authority for Joint Ventures / Close Corporation/ Partnership/ Company/ Sole Proprietor (Certified copies of Identity Documents for all members of Joint Ventures / Close Corporation / Partnership / Company / Sole Proprietor)
D: Registration Certificates of entities – Joint Ventures / Close Corporation/ Partnership/ Company/ Sole Proprietor
E: Compulsory Enterprise Questionnaire
F: Schedule of the Tenderer's Experience
G: Schedule of Key Personnel
H: Format of Curriculum Vitae
I: Proposed Amendments, Qualifications and Alternatives
J: Schedule of Subcontractors
K: Schedule of Plant and Equipment available for this contract
L: Copy of the Workmen's Compensation Registration Certificate (or proof of payment of contributions in terms of the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993)
M: Company profile, including track record
N: Construction Industries Development Board (CIBD) Registration – 3CE or 3ME or higher.

2 Other Documents required only for Tender Evaluation purposes.

O: Tax Compliance Status
P: Financial Standing – Attach Letter of Intent
Q: SBD Forms Required to be Completed

3 Returnable Schedules that will be incorporated into the Contract.

R: Execution Programme / Program of Works
S: Detailed Method Statement
T: Contractor's Health and Safety Declaration
U: Contractor's Safety Plan
V: Proforma Notification form in terms of the Occupational Health and Safety Act 1993, Construction Regulations, 2003

4 Other Documents that will be incorporated into the Contract.

W: Monthly Labour Report
X: Bidder's Detailed Experience – Reference Sheet

5 The Offer portion

Part C1 Agreement and Contract Data
Part C2 Pricing Data
Part C3 Scope of Work
Part C4 Site Information

T2.2 Returnable Schedules to be completed by Tenderer.

A. CENTRAL DATABASE (CSD) SUMMARY REPORT

[Tenderer's CENTRAL SUPPLIER DATABASE (CSD) SUMMARY REPORT to be attached here

B. RECORD OF ADDENDA TO TENDER DOCUMENTS

We confirm that the following communications received from the Employer before the submission of this Tender Offer, amending the Tender Documents, have been taken into account in this Tender Offer:		
1.		
1.		
2.		
3.		
4.		
5.		

Attach additional pages if more space is required.

Signed..... Date.....

Name..... Position.....

Tenderer.....

C. CERTIFICATE OF AUTHORITY OF AN ENTITY

Indicate the status of the Tenderer by ticking the appropriate box hereunder. The Tenderer must complete the Certificate set out below for the relevant category.

(I) Company	(II) Close Corporation	(III) Partnership	(IV) Joint Venture	(V) Sole Proprietor

(I) CERTIFICATE FOR COMPANY

I ....., chairperson of the Board of Directors of ....., hereby confirm that by resolution of the Board (copy attached) taken on ..... 20....., Mr/Ms ....., acting in the capacity of ....., was authorised to sign all Documents in connection with this Tender and any Contract resulting from it on behalf of the Company.

Signature of Chairman: .....

Signature of Signatory: .....

As Witnesses:

1..... Name in Block Letters.....

2..... Name in Block Letters.....

Date: .....

(II) CERTIFICATE FOR CLOSE CORPORATION

We, the undersigned, being the key Members in the business trading as.....
..... hereby authorise Mr/Ms .....,
acting in the capacity of ....., to sign all Documents
in connection with the Tender for Contract No and any Contract resulting from it on our behalf.

Signature of Signatory: .....

As Witnesses:

1..... Name in Block Letters.....

2..... Name in Block Letters.....

Date: .....

NAME	ADDRESS	SIGNATURE	DATE

Note: This Certificate is to be completed and signed by all of the key Members upon whom rests the Direction of the Affairs of the Close Corporation as a whole.

(III) CERTIFICATE FOR PARTNERSHIP

We, the undersigned, being the key Partners in the business trading as,

.....hereby authorise Mr/Ms…..

acting in the capacity of ..... , to sign all Documents in connection

with the Tender for Contract No and any Contract resulting from it on our behalf.

Signature of Signatory: .....

As Witnesses:

1..... Name in Block Letters.....

2..... Name in Block Letters.....

Date: .....

NAME	ADDRESS	SIGNATURE	DATE

Note: This Certificate is to be completed and signed by all of the key Partners upon who rests the Direction of the Affairs of the Partnership as a whole.

(IV) CERTIFICATE FOR JOINT VENTURE

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

....., authorized signatory of the Company, ……..…….…….

…….....acting in the capacity of Lead Partner, to sign all Documents in connection with the

Tender Offer for Contract No and any Contract resulting from it on our behalf.

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

Signature of Signatory: .....

As Witnesses:

1..... Name in Block Letters.....

2..... Name in Block Letters.....

Date: .....

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

Note: This Certificate is to be completed and signed by all of the key Partners upon who rests the Direction of the Affairs of the Joint Venture as a whole.

V) CERTIFICATE FOR SOLE PROPRIETOR

I....., hereby confirm that I am the Sole Owner of the

business trading as:……...

Signature of Sole Owner: .....

As Witnesses:

1..... Name in Block Letters.....

2..... Name in Block Letters.....

Date: .....

D. REGISTRATION CERTIFICATE OF AN ENTITY

[Important note to Tenderer: Registration Certificates for Companies, Close Corporations, Partnerships and ID Documents for Sole Proprietors must be inserted here. In the case of a Joint Venture, a copy of a duly signed Joint Venture Agreement must be included]

E. 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 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 of a Sole Proprietor, Partner in a Partnership or Director, Manager, Principal Shareholder or Stakeholder in a Company or Close Corporation is

currently or has been within the last 12 months been in the service of any of the following:

- ☐ 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 1 of 1999)
- ☐ a Member of an Accounting Authority of any National or Provincial Public entity
- ☐ an employee of Parliament or a Provincial Legislature

Name of spouse, child or parent	**Name of Institution, Public Office, Board or Organ of State and position held**	**Status of service (tick appropriate column)**	
		Current	**Within last 12 months**

*insert separate page if necessary

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

i) authorizes the Employer to obtain a tax clearance Certificate from the South African Revenue Services that my / our tax matters are in order;
ii) confirms that the neither the name of the Enterprise or the name of any Partner, Manager, Director or other Person, who wholly or partly exercises, or may exercise, control over the Enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;
iii) confirms that no Partner, Member, Director or other Person, who wholly or partly exercises, or may exercise, control over the Enterprise appears, has within the last five years been convicted of fraud or corruption;
iv) confirms that I / we are not associated, linked or involved with any other Tendering entities submitting Tender Offers and have no other relationship with any of the Tenderers or those responsible for compiling the Scope of Work that could cause or be interpreted as a conflict of interest; and
iv) confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

Signed ---------- Date ----------

Name ---------- Position ----------

Enterprise Name ----------

F. SCHEDULE OF THE TENDERER'S EXPERIENCE

The following is a Statement of Work of similar nature recently successfully executed by myself / ourselves (attach completion certificate for all completed projects as proof):

Employer: Contact Person and Telephone Number	Consulting Engineer: Contact Person and Telephone Number	Nature of Work	Value of Work (inclusive of VAT)	Date Completed or Expected to be Completed

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

G. KEY PERSONNEL

In terms of the Project Specification and the Conditions of Tender, unskilled Workers may only be brought in from outside the Local Community if such personnel are not available locally.

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

Category of Employee	Number of Persons					
	Key Personnel, Part of the Contractors Organisation		Key Personnel to be imported if not locally available		Unskilled Personnel to be recruited from the local community	
	HDI	NON-HDI	HDI	NON-HDI	HDI	NON-HDI
Site Agent, Project Manager						
Drilling Foreman						
Drilling Artisan						
Testing Foreman						
Testing Artisan						
Plumber						
Electrician						
Unskilled Workers						
Others:						
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....

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

H. CURRICULUM VITAE FORMAT OF KEY PERSONNEL

Name:	**Date of birth:**
Profession:	**Nationality:**
Qualifications:	
Professional Registration Number:	
Name of Employer (firm):	
Current position:	**Years with firm:**
Employment Record:	
Experience Record Pertinent to Required service:	

Certification:

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

....
Signature of person named in the Schedule *Date*

Name:	**Date of birth:**
Profession:	**Nationality:**
Qualifications:	
Professional Registration Number:	
Name of Employer (firm):	
Current position:	**Years with firm:**
Employment Record:	
Experience Record Pertinent to Required service:	

Certification:

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

....
Signature of person named in the Schedule *Date*

Name:	**Date of birth:**
Profession:	**Nationality:**
Qualifications:	
Professional Registration Number:	
Name of Employer (firm):	
Current position:	**Years with firm:**
Employment Record:	
Experience Record Pertinent to Required service:	

Certification:

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

....
Signature of person named in the Schedule *Date*

Name:	**Date of birth:**
Profession:	**Nationality:**
Qualifications:	
Professional Registration Number:	
Name of Employer (firm):	
Current position:	**Years with firm:**
Employment Record:	
Experience Record Pertinent to Required service:	

Certification:

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

....
Signature of person named in the Schedule *Date*

Name:	**Date of birth:**
Profession:	**Nationality:**
Qualifications:	
Professional Registration Number:	
Name of Employer (firm):	
Current position:	**Years with firm:**
Employment Record:	
Experience Record Pertinent to Required service:	

Certification:

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

....
Signature of person named in the Schedule *Date*

I. AMENDMENTS, QUALIFICATIONS AND ALTERNATIVES

(***This is not an invitation for amendments, deviations or alternatives,*** *but should the Tenderer desire to make any departures from the Provisions of this Contract he shall set out his proposals clearly hereunder. The Employer will not consider any amendment, unless form (a), has been completed to the satisfaction of the Employer*). *The Tenderer is referred to Tender Data paragraph F.2.12, where it is clearly stated that no Alternative Offers will be accepted.*

I / We herewith propose the amendments, as set out in the table below:

(a) AMENDMENTS

PAGE, CLAUSE OR ITEM NO	PROPOSED AMENDMENT

Notes: (1) Amendments to the General and Special Conditions of Contract are not acceptable;

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

J. SCHEDULE OF PROPOSED SUBCONTRACTORS

We notify you that it is our intention to employ the following Subcontractors for work in this Contract.

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

	Name and address of proposed Subcontractor	**Nature and extent of Work / Service**	**Previous experience with Subcontractor.**
1.			
2.			
3.			
4.			
5.			

Signed ..... Date .....

Name ..... Position .....

Tenderer .....

K. SCHEDULE OF PLANT AND EQUIPMENT

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

(a) Details of major equipment that is owned by and immediately available for this Contract.

Quantity	Description, size, capacity, etc.

Attach additional pages if more space is required.

(b) Details of major equipment that will be hired, or acquired for this Contract if my / our Tender is acceptable.

Quantity	Description, size, capacity, etc.

Attach additional pages if more space is required.

Signed ---------- Date ----------

Name ---------- Position ----------

Tenderer ----------

Proof of ownership and/or rental agreement should form part of the tender document.

L. COPY OF WORKMEN'S COMPENSATION REGISTRATION CERTIFICATE (OR PROOF OF PAYMENT OF CONTRIBUTIONS IN TERMS OF THE COMPENSATION FOR OCCUPATIONAL INJURIES AND DISEASES ACT NO. 130 OF 1993)

[Certified Copy of the Certificate or Proof of Payment thereof obtained from the Workmen's Compensation Commissioner to be inserted here]

M. COMPANY PROFILE, INCLUDING TRACK RECORD

[Abbreviated company profile, giving history, status, activities, staff and track record of the tendering entity, to be inserted here. In case of a Joint Venture, a separate profile for each partner must be submitted]

N. CONSTRUCTION INDUSTRIES DEVELOPMENT BOARD (CIDB) REGISTRATION

[Certified copy of the Tenderer's CIDB registration indicating the Contractor grading designation, to be inserted here. For a Joint Venture, each partner's CIDB certificate is to be included, as applicable]

O. TAX COMPLIANCE STATUS

IMPORTANT NOTES:

1. The Central Supplier Database and tax compliance status PIN are approved methods that will be used to verify tax compliance as SARS does not issue tax clearance certificate anymore but has made an online provision available via eFiling for bidders to print their own tax clearance certificates which can be submitted with this bid.

2. Tax Clearance submitted by bidders will be verified on eFiling and/or Central Supplier database.

3. Bidders must provide a tax compliance status PIN and Central Supplier Database Number to access their records and verify tax compliance status.

APPLICATION FORM FOR TAX CLEARANCE CERTIFICATE

(In respect of Tender see note at bottom)

1. NAME OF TAXPAYER/TENDERER:……..……...
2. TRADE NAME: ……..……..……
3. IDENTIFICATION No. (if applicable):……
4. COMPANY/CLOSE CORPORATION REG No:……
5. INCOME TAX REFERENCE No:…….
6. VAT REGISTRATION No:……..
7. PAYE EMPLOYERS REG No. (if applicable) :…….

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

CONTACT PERSON REQUIRING TAX CLEARANCE CERTIFICATE:

SIGNATURE: .....

NAME : .....

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

ADDRESS : .....

.....

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

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

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

(ST 5.1) March 1999

NB: ***This is a pro forma application form that has to be submitted to SARS to enable them to issue the required Tax Clearance Certificate. The original and valid Tax Clearance Certificate furnished by the Receiver of Revenue must be submitted with the Tender (to be attached to the next page).***

TAX CLEARANCE CERTIFICATE

[Valid Original Tax Clearance Certificate obtained from SARS to be inserted here after or CSD Summary Report]

P. TENDERER'S FINANCIAL STANDING

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

To that end the Tenderer must provide with his tender a bank rating, certified by his banker, to the effect that he will be able to successfully complete the contract at the tendered amount within the specified time for completion.

However, should the Tenderer be unable to provide a bank rating with his tender, he shall state the reasons as to why he is unable to do so, and in addition provide the following details of his banker and bank account that he intends to use for project:

Name of account holder: …….

Name of Bank: …….. Branch: ……..

Account number: …… Type of account: …….

Telephone number: …… Facsimile number: ……..

Name of contact person (at bank): …….

Failure to provide either the required bank details or a certified bank rating with his tender, will lead to the conclusion that the Tenderer does not have the necessary financial resources at his disposal to complete the contract successfully within the specified time for completion.

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

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

P1 FINANCIAL INFORMATION OF TENDERER

This information sheet has to be filled in by the financier of the Tenderer, duly signed and stamped on behalf of the financial institution he represents.

Tenderer / Tender Details

Tender Description: ……

Contract Period: ……..

Name of Tenderer: ……..

Bank Account Number: ……...

Tender Amount: ……

State amount of Demand Guarantee: R…….

Attach Letter of Intent from Financial Institution

Financial Institution

Name of Commercial Bank: …….

Branch: …….

Name of Bank Manager: ……...

Telephone Number: ……...

We acting on behalf of the above Commercial Bank confirm that

……. (Tenderer)

has operated an account with us for the last …….. years.

We have been requested to provide a bank rating based in relation to the financial capability of the Tenderer, taking into account directives set out in the following two tables.

FINANCIAL CAPABILITY

Maximum value of contract that the Tenderer is considered capable of	Value on which Bank Rating must be used
Up to R300 000	R24 000
R1 000 000	R78 000
R3 000 000	R240 000
R5 000 000	R480 000
R10 000 000	R900 000
R30 000 000	R2 400 000

R100 000 000	R7 800 000

BANK RATING

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

The value on which our Bank Rating of the Tenderer is based is R……

In words …….. only)

The Bank Rating is code: ……

…… …… ……
Signature: Manager Financial Institution Print Name Date

RUBBER STAMP OF INSTITUTION

Q: SBD FORMS REQUIRED TO BE COMPLETED

- **SBD 1 – INVITATION TO BID**
- **SBD 3.2 – PRICING SCHEDULE – NON-FIRM PRICES**
- **SBD 4 – BIDDER'S DISCLOSURE**
- **SBD 6.1 – PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022**

PART A
INVITATION TO BID

SBD 1

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE AGRICULTURE AND RURAL DEVELOPMENT					
BID NUMBER:	**ACDP 24/01**	CLOSING DATE: **11 JULY 2024**		CLOSING TIME:	**11H00**
DESCRIPTION	**A 3-Year Framework Agreement for Drilling, Testing and Equipping of Boreholes, for the Limpopo Department of Agriculture and Rural Development**				

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

67/69 BICCARD STREET DEPARTMENT
DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT
POLOKWANE
0699

BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO		**TECHNICAL ENQUIRIES MAY BE DIRECTED TO:**	
CONTACT PERSON	**Ndlozi VS**	CONTACT PERSON	MJ Gouws
TELEPHONE NUMBER	**015 294 3564**	TELEPHONE NUMBER	(015) 294 3539
FACSIMILE NUMBER		FACSIMILE NUMBER	
E-MAIL ADDRESS	**ndloziv@agric.limpopo.gov.za**	E-MAIL ADDRESS	gouwsmj@agric.limpopo.gov.za

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					
SUPPLIER COMPLIANCE STATUS	TAX COMPLIANCE SYSTEM PIN:		**OR**	CENTRAL SUPPLIER DATABASE No:	MAAA

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 THE QUESTIONNAIRE BELOW]

QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS

IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)? ☐ YES ☐ NO

DOES THE ENTITY HAVE A BRANCH IN THE RSA? ☐ YES ☐ NO

DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA? ☐ YES ☐ NO

DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA? ☐ YES ☐ NO

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 BELOW.

PART B
TERMS AND CONDITIONS FOR BIDDING SBD 1

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 IN THE MANNER PRESCRIBED IN THE BID DOCUMENT.**
1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT, 2000 AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.
1.4. **THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (SBD7).**
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 VERIFY THE TAXPAYER'S PROFILE AND TAX STATUS.
2.3 APPLICATION FOR TAX COMPLIANCE STATUS (TCS) PIN MAY BE MADE VIA E-FILING THROUGH THE SARS WEBSITE WWW.SARS.GOV.ZA.
2.4 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
2.5 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
2.6 WHERE NO TCS PIN IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.
2.7 NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE, COMPANIES WITH DIRECTORS WHO ARE PERSONS IN THE SERVICE OF THE STATE, OR CLOSE CORPORATIONS WITH MEMBERS PERSONS IN THE SERVICE OF THE STATE."

NB: FAILURE TO PROVIDE / OR COMPLY WITH ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.

SIGNATURE OF BIDDER: ……

CAPACITY UNDER WHICH THIS BID IS SIGNED: ……
(Proof of authority must be submitted e.g. company resolution)

DATE: ……..

SBD 3.2

PRICING SCHEDULE – NON-FIRM PRICES (PURCHASES)

NOTE: PRICE ADJUSTMENTS WILL BE ALLOWED AT THE PERIODS AND TIMES SPECIFIED IN THE BIDDING DOCUMENTS.

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

Name of Bidder……Bid number……
Closing Time 11:00 …….. Closing date……..

OFFER TO BE VALID FOR 240 DAYS FROM THE CLOSING DATE OF BID.

ITEM NO.	QUANTITY	DESCRIPTION	BID PRICE IN RSA CURRENCY **(ALL APPLICABLE TAXES INCLUDED)

- Required by: ……
- At: ……..……
- Brand and model ……..……
-
- Country of origin ……..……
- Does the offer comply with the specification(s)? *YES/NO
- If not to specification, indicate deviation(s) ……
- Period required for delivery ……
- Delivery: *Firm/not firm

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

*Delete if not applicable

SBD 3.2

PRICE ADJUSTMENTS

A NON-FIRM PRICES SUBJECT TO ESCALATION

1. IN CASES OF PERIOD CONTRACTS, NON FIRM PRICES WILL BE ADJUSTED (LOADED) WITH THE ASSESSED CONTRACT PRICE ADJUSTMENTS IMPLICIT IN NON FIRM PRICES WHEN CALCULATING THE COMPARATIVE PRICES

2. IN THIS CATEGORY PRICE ESCALATIONS WILL ONLY BE CONSIDERED IN TERMS OF THE FOLLOWING FORMULA:

$$Pa = (1-V)Pt\left(D1\frac{R1t}{R1o} + D2\frac{R2t}{R2o} + D3\frac{R3t}{R3o} + D4\frac{R4t}{R4o} \right) + VPt$$

Where:

Pa	=	The new escalated price to be calculated.
(1-V)Pt	=	90% of the original bid price. **Note that Pt must always be the original bid price and not an escalated price.**
D1, D2..	=	Each factor of the bid price eg. labour, transport, clothing, footwear, etc. The total of the various factors D1, D2…etc. must add up to 100%.
R1t, R2t……	=	Index figure obtained from new index (depends on the number of factors used).
R1o, R2o	=	Index figure at time of bidding.
VPt	=	10% of the original bid price. This portion of the bid price remains firm i.e. it is not subject to any price escalations.

3. The following index/indices must be used to calculate your bid price:

Index……. Dated……. Index……. Dated……. Index……. Dated…….

Index……. Dated……. Index……. Dated……. Index……. Dated…….

4. FURNISH A BREAKDOWN OF YOUR PRICE IN TERMS OF ABOVE-MENTIONED FORMULA. THE TOTAL OF THE VARIOUS FACTORS MUST ADD UP TO 100%.

FACTOR (D1, D2 etc. eg. Labour, transport etc.)	**PERCENTAGE OF BID PRICE**

B PRICES SUBJECT TO RATE OF EXCHANGE VARIATIONS

1. Please furnish full particulars of your financial institution, state the currencies used in the conversion of the prices of the items to South African currency, which portion of the price is subject to rate of exchange variations and the amounts remitted abroad.

PARTICULARS OF FINANCIAL INSTITUTION	ITEM NO	PRICE	CURRENCY	RATE	PORTION OF PRICE SUBJECT TO ROE	AMOUNT IN FOREIGN CURRENCY REMITTED ABROAD
				ZAR=		
				ZAR=		
				ZAR=		
				ZAR=		
				ZAR=		
				ZAR=		

2. Adjustments for rate of exchange variations during the contract period will be calculated by using the average monthly exchange rates as issued by your commercial bank for the periods indicated hereunder: (Proof from bank required)

AVERAGE MONTHLY EXCHANGE RATES FOR THE PERIOD:	DATE DOCUMENTATION MUST BE SUBMITTED TO THIS OFFICE	DATE FROM WHICH NEW CALCULATED PRICES WILL BECOME EFFECTIVE	DATE UNTIL WHICH NEW CALCULATED PRICE WILL BE EFFECTIVE

FAILURE TO COMPLETE THE ABOVE WILL RESULT IN NO PRICE INCREASE ON A NON- FIRM PRICE

WERE PRICES ARE INDICATED AS FIRM NO PRICE INCREASE CLAIM WILL BE ENTERTAINED DURING THE CONTRACT PERIOD

Pricing Schedule: Purchases (Non-firm prices)

(SBD 3.2)

SBD4

BIDDER'S DISCLOSURE

1. PURPOSE OF THE FORM

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

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

2. Bidder's declaration

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

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

Full Name	Identity Number	Name of State institution

2.2 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution? **YES/NO**

2.2.1 If so, furnish particulars:
……
……

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

2.3.1 If so, furnish particulars:
……
……

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

3 DECLARATION

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

3.1 I have read and I understand the contents of this disclosure;
3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;
3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium2 will not be construed as collusive bidding.
3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.
3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.

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

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.
I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

…… .....
Signature Date

…… ……
Position Name of bidder

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

SBD 6.1

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

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

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

1. GENERAL CONDITIONS

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

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

1.2 To be completed by the organ of state

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

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

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

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

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

(a) Price; and

(b) Specific Goals.

1.4 To be completed by the organ of state:

The maximum points for this tender are allocated as follows:

	POINTS
PRICE	90
SPECIFIC GOALS	10
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**

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

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**

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

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)
Black People ownership>51%	7			
Women ownership>51%	1			
People with Disability ownership>51%	1			
Youth ownership>51%	1			

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: ……

……

……

……

R. EXECUTION PROGRAMME / PROGRAM OF WORKS

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

The Execution Programme must be based on the completion time as specified in the Contract Data. The activities identified and filled in below, are specifically to be carried forward to Schedule T, the contractor's Method Statement.

PLEASE NOTE: the cash flow projections from the Contractor (to be submitted before commencement of the execution of the Contract) must be in accordance with this execution plan in order to ensure proper Cash flow management by the Department and to minimise delayed payments.

PROGRAMME										
ACTIVITY	**MONTHS**									

S. DETAILED METHOD STATEMENT

[The adjudication of the responsiveness of a bid also relies on the extent to which a tenderer can prove an understanding of the scope of works. The tenderer should describe below the methods and procedures he will employ to successfully complete the various activities as identified for the foregoing Schedule S, the Execution Programme]

ACTIVITY	DESCRIPTION
……	……
……	……
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……	……
……	……

[Add more pages as required]

T: CONTRACTOR'S HEALTH AND SAFETY DECLARATION

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

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

Declaration by Tenderer

1. I the undersigned hereby declare and confirm that I am fully conversant with the Occupational Health and Safety Act No 85 of 1993 (as amended by the Occupational Health and Safety Amendment Act No 181 of 1993), and the OHSA 1993 Construction Regulations 2014.

2. I hereby declare that my Company has the competence and the necessary resources to safely carry out the construction Work under this Contract in compliance with the Construction Regulations and the Employer's Health and Safety Specifications.

3. I propose to achieve compliance with the Regulations by one of the following:

   (a) From my own competent resources as detailed in 4(a) hereafter: ..... ***Yes / No**

   (b) From my own resources still to be appointed or trained until competency is achieved, as detailed in 4(b) hereafter: ..... ***Yes / No**

   (c) From outside sources by appointment of competent specialist Subcontractors as detailed in 4(c) hereafter: ..... ***Yes / No**

   (** = delete whatever is not applicable*)

4. Details of resources I propose:

   (Note: Competent resources shall include safety personnel such as a construction supervisor and Construction Safety Officer as defined in Regulation 6, and Competent Persons as defined in Regulations 7, 8, 10, 11, 12, 14, 15, 18, 21(1), 22, 26 and 27, as applicable to this Contract)

(a) Details of the competent and qualified key persons from my Company's own resources, who will form part of the Contract team:

NAMES OF COMPETENT PERSONS	POSITIONS TO BE FILLED BY COMPETENT PERSONS

(b) Details of training of persons from my Company's own resources (or to be hired) who still have to be trained to achieve the necessary competency:

(i) By whom will training be provided? .....

(ii) When will training be undertaken? .....

(iii) List the positions to be filled by persons to be trained or hired: .....

.....

.....

.....

(c) Details of competent resources to be appointed as Subcontractors if Competent Persons cannot be supplied from own Company:

Name of proposed Subcontractor: .....

Qualifications or details of competency of the Subcontractor: .....

.....

.....

.....

5. I hereby undertake, if my Tender is accepted, to provide, before commencement of the Works under the Contract, a suitable and sufficiently Documented Health and Safety Plan in accordance with Regulation 5(1) of the Construction Regulations, which plan shall be subject to approval by the Employer.

6. I confirm that copies of my Company's approved Health and Safety Plan, the Employer's Safety Specifications as well as the OHSA 1993 Construction Regulations 2014 will be provided on Site and will at all times be available for inspection by the Contractor's personnel, the Employer's personnel, the Engineer, visitors, and Officials and Inspectors of the Department of Labour.

7. I hereby confirm that adequate provision has been made in my Tendered rates and prices in the Schedule of Quantities to cover the cost of all resources, actions, training and all health and safety measures envisaged in the OHSA 1993 Construction Regulations 2014, and that I will be liable for any penalties that may be applied by the Employer in terms of the said Regulations (Regulation 30) for failure on the Contractor's part to comply with the Provisions of the Act and the Regulations.

8. I agree that my failure to complete and execute this declaration to the satisfaction of the Employer will mean that I am unable to comply with the requirements of the OHSA 1993 Construction Regulations 2014, and accept that my Tender will be prejudiced and may be rejected at the discretion of the Employer.

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

U: CONTRACTOR'S SAFETY PLAN

[The Contractor shall submit the Contractor's Health and Safety Plan as required in terms of Regulation 5 of the Occupational Health and Safety Act 1993 Construction Regulations 2014, and referred to in T2.1, before commencement of the Works.]

V. PRO FORMA NOTIFICATION FORM IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT 1993, CONSTRUCTION REGULATIONS 2003

[This form must be completed and forwarded, prior to commencement of Work on Site, by all Contractors that qualify in terms of Regulation 3 of the Construction Regulations 2003, to the Office of the Department of Labour]

1. (a) Name and postal address of Contractor:……..
   .....
   (b) Name of Contractor's contact person: .....
   Telephone number: .....
2. Contractor's Workman's compensation registration number: .....
3. (a) Name and postal address of Client: .....
   .....
   .....
   (b) Name of Client's contact person or Agent:.....
   Telephone number .....
4. (a) Name and postal address of designer(s) for the Project: .....
   .....
   (b) Name of Designer's contact person: .....
   Telephone number .....
5. Name of Contractor's Construction Supervisor on Site appointed in terms of Regulation 6(1): ..... Telephone number: .....
6. Name/s of Contractor's sub-ordinate supervisors on Site appointed in terms of Regulation 6(2).
   …… .....
7. Exact physical address of the construction Site or Site Office: .....
   .....
8. Nature of the construction Work: .....
   …….. .....
9. Expected Commencement Date: .....
10. Expected Completion Date: .....
11. Estimated maximum number of persons on the construction Site: .....
12. Planned number of Subcontractors on the construction Site accountable to Contractor: .....
13. Name(s) of Subcontractors already chosen: .....
    .....
    .....
    ……..
    ……..

SIGNED BY:

CONTRACTOR: .....……..... DATE: .....

CLIENT: .....…… DATE: .....

W. MONTHLY LABOUR REPORT

MONTHLY LABOUR REPORT FOR CERTIFICATE OF PAYMENT NO. ……

JOBS CREATED……..

AS PER BUSINESS PLAN

A	B	C	D	E	F	G	H	I	J
Category	Number of persons employed in category	Rate (R/d)	Local P-days	Non-local P-Days	Total P-days (D+E)	Amount expended on labour (C x F)	P-days by women	P-days by youth	P-days by disabled
Clerical									
Managerial									
Supervisory									
Skilled									
Semi-skilled									
Unskilled									
All operations									

ACTUAL TO DATE

A	B	C	D	E	F	G	H	I	J
Category	Number of persons employed in category	Rate (R/d)	Local P-days	Non-local P-Days	Total P-days (D+E)	Amount expended on labour (C x F)	P-days by women	P-days by youth	P-days by disabled
Clerical									
Managerial									
Supervisory									
Skilled									
Semi-skilled									
Unskilled									
All operations									

SUMMARY

Planned person-days target
Tendered construction period (months):
Overall person-days target per month:
Months represented by this report:
Person-day target for this month:
Achieved person-days to date:
Person-days ahead/behind target:

X: BIDDER'S DETAILED EXPERIENCE – REFERENCE SHEET

BIDDER'S DETAILED EXPERIENCE – REFERENCE SHEET

The following are to be completed by the Client and Principal Agent/ Consultant and is to be supported in each case by a letter of award and the works completion certificate. Both client and Pricipal Agent must stamp the documents, failure to obtain both stamp will result in no allocation of points.

Project Name and scope of work:

Scope of work : ……..

Contract duration: …….

Actual Contract Duration: ……..

Name of Institution/company /place where contract was undertaken/ Client	**Principal Agent/ Consultant**	**Value of contract**	**Contract Duration** *(in days, weeks, months, years)*	**Actual Contract Duration** (in days, weeks, months, years)

To be filled by Principal Agent

Description/Perfomance	**Very Poor (1)**	**Poor (2)**	**Fair (3)**	**Good (4)**	**Excellent (5)**
Quality of office administration					
Quality of Site Management					
Competence Foreman					
Co-operation during contract					
Quality of workmanship					
Quality of materials					
Programme management					
Rectification of condemned work					
Tidiness of site					
Adequacy of equipment					
Adequacy of labour force					
Procurement of material					
Labour relations					

Any other additional remarks considered necessary to assist in evaluation of the contractor?

……..

……..

Principal Agent/consultant Firm…….

Telephone ……

Principal Agent/consultant Signature ……..

Date …….

STAMP

BIDDER'S DETAILED EXPERIENCE – REFERENCE SHEET

The following are to be completed by the Client and Principal Agent/ Consultant and is to be supported in each case by a letter of award and the works completion certificate. Both client and Pricipal Agent must stamp the documents, failure to obtain both stamp will result in no allocation of points.

Project Name and scope of work:

Scope of work : ……..

Contract duration: …….

Actual Contract Duration: …….

Name of Institution/company /place where contract was undertaken/ Client	**Principal Agent/ Consultant**	**Value of contract**	**Contract Duration** *(in days, weeks, months, years)*	**Actual Contract Duration** (in days, weeks, months, years)

To be filled by Principal Agent

Description/Perfomance	**Very Poor (1)**	**Poor (2)**	**Fair (3)**	**Good (4)**	**Excellent (5)**
Quality of office administration					
Quality of Site Management					
Competence Foreman					
Co-operation during contract					
Quality of workmanship					
Quality of materials					
Programme management					
Rectification of condemned work					
Tidiness of site					
Adequacy of equipment					
Adequacy of labour force					
Procurement of material					
Labour relations					

Any other additional remarks considered necessary to assist in evaluation of the contractor?

……..

……..

Principal Agent/consultant Firm…….

Telephone ……

Principal Agent/consultant Signature ……..

Date …….

STAMP

BIDDER'S DETAILED EXPERIENCE – REFERENCE SHEET

The following are to be completed by the Client and Principal Agent/ Consultant and is to be supported in each case by a letter of award and the works completion certificate. Both client and Pricipal Agent must stamp the documents, failure to obtain both stamp will result in no allocation of points.

Project Name and scope of work:

Scope of work : ……..

Contract duration: …….

Actual Contract Duration: …….

Name of Institution/company /place where contract was undertaken/ Client	**Principal Agent/ Consultant**	**Value of contract**	**Contract Duration** *(in days, weeks, months, years)*	**Actual Contract Duration** (in days, weeks, months, years)

To be filled by Principal Agent

Description/Perfomance	**Very Poor (1)**	**Poor (2)**	**Fair (3)**	**Good (4)**	**Excellent (5)**
Quality of office administration					
Quality of Site Management					
Competence Foreman					
Co-operation during contract					
Quality of workmanship					
Quality of materials					
Programme management					
Rectification of condemned work					
Tidiness of site					
Adequacy of equipment					
Adequacy of labour force					
Procurement of material					
Labour relations					

Any other additional remarks considered necessary to assist in evaluation of the contractor?

……..

……..

Principal Agent/consultant Firm…….

Telephone ……

Principal Agent/consultant Signature ……..

Date …….

STAMP

BIDDER'S DETAILED EXPERIENCE – REFERENCE SHEET

The following are to be completed by the Client and Principal Agent/ Consultant and is to be supported in each case by a letter of award and the works completion certificate. Both client and Pricipal Agent must stamp the documents, failure to obtain both stamp will result in no allocation of points.

Project Name and scope of work:

Scope of work : ……..

Contract duration: …….

Actual Contract Duration: …….

Name of Institution/company /place where contract was undertaken/ Client	**Principal Agent/ Consultant**	**Value of contract**	**Contract Duration** *(in days, weeks, months, years)*	**Actual Contract Duration** (in days, weeks, months, years)

To be filled by Principal Agent

Description/Perfomance	**Very Poor (1)**	**Poor (2)**	**Fair (3)**	**Good (4)**	**Excellent (5)**
Quality of office administration					
Quality of Site Management					
Competence Foreman					
Co-operation during contract					
Quality of workmanship					
Quality of materials					
Programme management					
Rectification of condemned work					
Tidiness of site					
Adequacy of equipment					
Adequacy of labour force					
Procurement of material					
Labour relations					

Any other additional remarks considered necessary to assist in evaluation of the contractor?

……..

……..

Principal Agent/consultant Firm…….

Telephone ……

Principal Agent/consultant Signature ……..

Date …….

STAMP

BIDDER'S DETAILED EXPERIENCE – REFERENCE SHEET

The following are to be completed by the Client and Principal Agent/ Consultant and is to be supported in each case by a letter of award and the works completion certificate. Both client and Pricipal Agent must stamp the documents, failure to obtain both stamp will result in no allocation of points.

Project Name and scope of work:

Scope of work : ……..

Contract duration: ……..

Actual Contract Duration: ……..

Name of Institution/company /place where contract was undertaken/ Client	**Principal Agent/ Consultant**	**Value of contract**	**Contract Duration** *(in days, weeks, months, years)*	**Actual Contract Duration** (in days, weeks, months, years)

To be filled by Principal Agent

Description/Perfomance	**Very Poor (1)**	**Poor (2)**	**Fair (3)**	**Good (4)**	**Excellent (5)**
Quality of office administration					
Quality of Site Management					
Competence Foreman					
Co-operation during contract					
Quality of workmanship					
Quality of materials					
Programme management					
Rectification of condemned work					
Tidiness of site					
Adequacy of equipment					
Adequacy of labour force					
Procurement of material					
Labour relations					

Any other additional remarks considered necessary to assist in evaluation of the contractor?

……..

……..

Principal Agent/consultant Firm…….

Telephone ……

Principal Agent/consultant Signature ……..

Date …….

STAMP

THE CONTRACT

PART C1: AGREEMENTS AND CONTRACT DATA

PART C2: PRICING DATA

PART C3: SCOPE OF WORK

PART C4: AGREEMENT IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT (No 85 OF 1993)

LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

A 3-YEAR FRAMEWORK AGREEMENT FOR DRILLING, TESTING AND EQUIPPING OF BOREHOLES, FOR THE LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

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PART C1: AGREEMENTS AND CONTRACT DATA

C1.1: FORM OF OFFER AND ACCEPTANCE

C1.2: CONTRACT DATA

C1.2.1: CONDITIONS OF CONTRACT

C1.2.2: PART A: CONTRACT DATA PROVIDED BY THE EMPLOYER

PART B: CONTRACT DATA PROVIDED BY THE CONTRACTOR

C1.3: FORM OF GUARANTEE

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LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

A 3-YEAR FRAMEWORK AGREEMENT FOR DRILLING, TESTING AND EQUIPPING OF BOREHOLES, FOR THE LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

C1.1 Form of Offer and Acceptance

Offer

The Employer, identified in the Acceptance Signature block, has solicited Offers to enter into a Contract for the procurement of:

Contract No **ACDP 24/01**: **A 3-YEAR FRAMEWORK AGREEMENT FOR DRILLING, TESTING AND EQUIPPING OF BOREHOLES FOR THE LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT**

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

By the representative of the Bidder, deemed to be duly authorized, signing this part of this Form of Offer and Acceptance, the Bidder Offers to perform all of the obligations and liabilities of the Contractor under the Contract including compliance with all its Terms and Conditions according to their true intent and meaning for an amount to be determined in accordance with the Conditions of Contract identified in the Contract Data.

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

……

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

Signature Block: Bidder	
Signature	Date . . . . .
Name	
Capacity	
Name of organization.	
Address of organization	
. . . . .	
Signature of witness	Date . . . . .
Name of witness	

Acceptance

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

The terms of the Contract, are contained in:

Part C1: Agreements and Contract Data, (which includes this Agreement)
Part C2: Pricing Data
Part C3: Scope of work.
Part C4: Site Information and Drawings and Documents or parts thereof, which may be incorporated by reference into Parts C1 to C4 above.

Deviations from and amendments to the Documents listed in the Bid Data and any addenda thereto as listed in the Bid Schedules as well as any changes to the Terms of the Offer agreed by the Bidder and the Employer during this process of Offer and Acceptance, are contained in the Schedule of Deviations attached to and Forming part of this Agreement. No amendments to or deviations from said Documents are valid unless contained in this schedule.

The Bidder shall within two weeks after receiving a completed copy of this Agreement, including the Schedule of Deviations (if any), contact the Employer's agent (whose details are given in the Contract Data) for delivery of any Bonds, Guarantees, proof of Insurance and any other Documentation to be provided in terms of the Conditions of Contract Identified in the Contract Data. Failure to fulfil any of these Obligations in accordance with those terms shall constitute a repudiation of this Agreement.

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

Signature Block: Employer

Signature . . . . . Date . . . . . .

Name . . . . . .

Capacity . . . . . .

for the Employer Limpopo Department of Agriculture and Rural Development

Signature of witness . . . . . Date . . . . . .

Name of witness . . . . . .

Schedule of Deviations

1 Subject . . . . . .
Details . . . . . .
. . . . . .
. . . . . .
. . . . . .
2 Subject . . . . . .
Details . . . . . .
. . . . . .
. . . . . .
. . . . . .

3 Subject . . . . . .
Details . . . . . .
. . . . . .
. . . . . .
. . . . . .
4 Subject . . . . . .
Details . . . . . .
. . . . . .
. . . . . .
. . . . . .
5 Subject . . . . . .
Details . . . . . .
. . . . . .
. . . . . .
. . . . . .

By the duly Authorised Representatives signing this Agreement, the Employer and the Bidder agree to and accept the foregoing Schedule of Deviations as the only deviations from and amendments to the Documents listed in the Bid Data and addenda thereto as listed in the Bid Schedules, as well as any confirmation, clarification or changes to the terms of the Offer agreed by the Bidder and the Employer during this process of Offer and Acceptance.

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

For the Bidder:

Signature(s) _____ _____

Name(s) _____ _____

Capacity _____ _____

_____
(Name and address of organisation)

Name & Signature of Witness _____ Date _____

For the Employer:

Signature(s) _____ _____

Name(s) _____ _____

Capacity _____ _____

_____
(Name and address of organisation)

LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

A 3-YEAR FRAMEWORK AGREEMENT FOR DRILLING, TESTING AND EQUIPPING OF BOREHOLES, FOR THE LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

C1.2 CONTRACT DATA

Section 1.01 The General Conditions of Contract for Construction Works (2010) published by the South African Institution of Civil Engineering, is applicable to this Contract. Copies of these Conditions of Contract may be obtained from the South African Institution of Civil Engineering (Tel: 011-805 5947).

The General Conditions of Contract for Construction Works make several references to the Contract Data for Specific Data, which together with these Conditions collectively describe the risks, liabilities and obligations of the Contracting parties and the procedures for the administration of the Contract. The Contract Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the General Conditions of Contract.

Each item of Data given below is cross-referenced to the clause in the General Conditions of Contract for Construction Works to which it mainly applies.

LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

A 3-YEAR FRAMEWORK AGREEMENT FOR DRILLING, TESTING AND EQUIPPING OF BOREHOLES, FOR THE LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

C1.2.1: CONDITIONS OF CONTRACT

GENERAL CONDITIONS OF CONTRACT

SPECIAL CONDITIONS OF CONTRACT

1. GENERAL

2. AMENDMENTS TO THE GENERAL CONDITIONS OF CONTRACT

3. TRANSFER OF RIGHTS

C1.2.1 CONDITIONS OF CONTRACT

GENERAL CONDITIONS OF CONTRACT

This Contract will be based on the "General Conditions of Contract for Construction Works – 2nd Edition 2010", issued by the South African Institution of Civil Engineering (Short title: **"General Conditions of Contract 2010**") and can be obtained from:

SAICE
Waterfall Park
Howick Gardens
Vorna Valley Half way House
Becker Street
MIDRAND
1685
Gauteng Province
Tel: (011) 805-5947/8
Fax: (011) 805-5971.

It is agreed that the only variations from the General Conditions of Contract 2010 are those set out hereafter under "Special Conditions of Contract".

SPECIAL CONDITIONS OF CONTRACT

1. GENERAL

These Special Conditions of Contract (SCC) form an integral part of the Contract. The Special Conditions shall amplify, modify or supersede, as the case may be, the General Conditions of Contract 2010 to the extent specified below, and shall take precedence and shall govern.

The clauses of the Special Conditions hereafter are numbered "SCC" followed in each case by the number of the applicable clause or sub clause in the General Conditions of Conditions 2010, and the applicable heading, or (where a new special condition that has no relation to the existing clauses is introduced) by a number that follows after the last clause number in the General Conditions, and an appropriate heading.

2. FOR CONTRACT ABOVE R3M (THREE MILLION RAND), THE FOLLOWING SPECIAL CONDITIONS APPLY

(a) (i) All bidders from outside the province must enter into a Consortium or Joint Venture with local SMMEs or suppliers.
(ii) Preference must be given to local bidders entering into Joint Ventures with local SMME's or suppliers.
(iii) The members of consortium or Joint venture, formed in response to preferential procurement conditions, must share in the control and management of such consortium.
(iv) The percentage of the contract value managed or executed by the local partner must not be less than 40% of the project value.
(v) All white owned bidders must enter into join venture with black owned local contractor and percentage of management and control for equity owned by black must not be less than 25% in the venture arrangement.

(b) The AO/AA may, after consulting the departmental or public entities demand management unit, in the bid documentation, exempt bidders from complying with the provisions of clause (a), if there are no SMME's or suppliers in Limpopo with the skills or knowledge required to execute the project.
(c) In the case of construction works, applicable to the construction industry;
(d) (i) The Consortium or Joint Venture that benefits from the preference system, must within 30 days of receiving notice of the contract, must organize themselves into legal entity or provide with a working agreement between members of the Joint venture or consortium. Successful suppliers, both from in and outside the province, must upon implementation of the project, establish fully fledged office, branch or plant in the province.

The department reserves the right to retain a percentage of contract value to ensure that the above condition is complied with.

(ii) The retained fee must be paid to the supplier or service provider on successfully completing the contract and after having complied with the special conditions.

(iii) Where the supplier or service provider fails to successfully complete the contract or comply with any condition, such supplier or service provider will forfeit the retained percentage.

(iv) Notwithstanding the forfeiture of the retained percentage of the contract value, if the failure to comply with conditions in clause (i) amounts to breach of the contract, the department or public entity may invoke any remedy available to it in law.

(v) A performance guarantee of 10% is applicable to all contracts above R 2 000 000.00 and must be obtained from either commercial bank or insurance company prior to award of bids. The performance security shall be dominated in the currency of the contract and shall be in the form of a bank guarantee or an irrevocable letter of credit issued by a reputable bank located in South Africa. The accounting officer reserves the right to cancel the award of the bid when the bidder fails to present the required security as stipulated in the special conditions.

(e) In all labour-intensive projects, at least 70% of the labourers must be employed from the local community where the project will be executed.

3. AMENDMENTS TO THE GENERAL CONDITIONS OF CONTRACT

Clause no.	Description
SCC 5.12.1	Add the following to the sub-clause: Extension of time in respect of abnormal rainfall shall be calculated using the rainfall Formula in PS 8 for each calendar month or part thereof.
SCC 9.2.1.3.6	Replace sub-clause with: The Contractor or anyone on his behalf or in his employ would pay, offer or offer as payment to any person in the employ of the Employer, or in the employ of the Engineer, a gratuity or reward or commission.
SCC 6.11	Replace the Heading with "**VARIATIONS EXCEEDING 20 PERCENT**"
SCC 6.11.1.3	Replace the wording:" *greater than 15 percent"* with *"greater than 20 percent".* **<u>The following additional clauses to the General Conditions of Contract shall apply:</u>**
SCC 11	**LABOUR INTENSIVE WORKS**
SCC 11.1	**Payment for the labour-intensive component of the works** Payment for works identified in the Scope of Work as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the scope of work. Any non-payment for such works shall not relieve the Contractor in any way from his obligations either in Contract or in delict.
SCC 11.2	**Applicable labour laws** The Ministerial Determination, Special Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice No R63 of 25 January 2002, as reproduced below, shall apply to work which are undertaken by unskilled or semi-skilled workers.
SCC 11.3.1	**Introduction** (a) This document contains the Standard Terms and Conditions for workers employed in elementary occupations on a Special Public Works Programme

	(SPWP). These terms and Conditions do NOT apply to persons employed in the supervision and management of a SPWP. (b) In this document – (i) "Department" means any department of State, implementing Agent or Contractor; (ii) "Employer" means any Municipality, implementing Agency or Contractor that hires workers to work in elementary occupations on a SPWP; (iii) "worker" means any person working in an elementary occupation on a SPWP.; (iv) "elementary occupation" means any occupation involving unskilled or semi-skilled work; (v) "Management" means any person employed by a Municipality or implementing Agency to administer or execute an SPWP.; (vi) "task" means a fixed quantity of work; (vii) "task-based work" means work in which a worker is paid a fixed rate for performing a task; (viii) "task-rated worker" means a worker paid on the basis of the number of tasks completed; (ix) "time-rated worker" means a worker paid on the basis of the length of time worked.
SCC 11.3.2	**Terms of Work** (a) Workers on a SPWP are employed on a temporary basis. (b) A worker may NOT be employed for longer than 24 months in any five year cycle on a SPWP. (c) Employment on a SPWP does not qualify as employment as a contributor for the purpose of the Unemployment Insurance Act 30 of 1966.

SCC 11.3.3	**Normal Hours of Work** (a) An Employer may not set tasks or hours of work that require a worker to work– (i) more than forty hours in any week (ii) on more than five days in any week; and (iii) for more than eight hours on any day. (b) An Employer and worker may agree that a worker will work four days per week. The worker may then work up to ten hours per day. (c) A task-rated worker may not work more than a total of 55 hours in any week to complete the tasks allocated (based on a 40-hour week) to that worker.
SCC 11.3.4	**Meal Breaks** (a) A worker may not work for more than five hours without taking a meal break of at least thirty minutes' duration.

	(b) An Employer and worker may agree on longer meal breaks. (c) A worker may not work during a meal break. However, an Employer may require a worker to perform duties during a meal break if those duties cannot be left unattended and cannot be performed by another worker. An Employer must take reasonable steps to ensure that a worker is relieved of his or her duties during the meal break. (d) A worker is not entitled to payment for the period of a meal break. However, a worker who is paid on the basis of time worked must be paid if the worker is required to work or to be available for work during the meal break.
SCC 11.3.5	**Special Conditions for Security Guards** (a) A security guard may work up to 55 hours per week and up to eleven hours per day. (b) A security guard who works more than ten hours per day must have a meal break of at least one hour or two breaks of at least 30 minutes each.
SCC 11.3.6	**Daily Rest Period** Every worker is entitled to a daily rest period of at least eight consecutive hours. The daily rest period is measured from the time the worker ends work on one day until the time the worker starts work on the next day.
SCC 11.3.7	**Weekly Rest Period** Every worker must have two days off every week. A worker may only work on their day off to perform work which must be done without delay and cannot be performed by workers during their ordinary hours of work ("emergency work").
SCC 11.3.8	**Work on Sundays and Public Holidays** (a) A worker may only work on a Sunday or Public holiday to perform emergency or security work. (b) Work on Sundays is paid at the ordinary rate of pay. (c) A task-rated worker who works on a public holiday must be paid –
	(i) the worker's daily task rate, if the worker works for less than four hours; (ii) double the worker's daily task rate, if the worker works for more than four hours. (d) A time-rated worker who works on a public holiday must be paid – (i) the worker's daily rate of pay, if the worker works for less than four hours on the public holiday; (ii) double the worker's daily rate of pay, if the worker works for more than four hours on the public holiday.
SCC 11.3.9	**Sick Leave** (a) Only workers who work four or more days per week have the right to claim sick-pay in terms of this clause. (b) A worker who is unable to work on account of illness or injury is entitled to claim one day's paid sick leave for every full month that the worker has worked in terms of a Contract.

	(c) A worker may accumulate a maximum of twelve days' sick leave in a year. (d) Accumulated sick-leave may not be transferred from one Contract to another Contract. (e) An Employer must pay a task-rated worker the worker's daily task rate for a day's sick leave. (f) An Employer must pay a time-rated worker the worker's daily rate of pay for a day's sick leave. (g) An Employer must pay a worker sick pay on the worker's usual payday. (h) Before paying sick-pay, an Employer may require a worker to produce a certificate stating that the worker was unable to work on account of sickness or injury if the worker is – (i) absent from work for more than two consecutive days; or (ii) absent from work on more than two occasions in any eight-week period. (i) A medical certificate must be issued and signed by a Medical Practitioner, a qualified Nurse or a Clinic staff member authorised to issue medical certificates indicating the duration and reason for incapacity. (j) A worker is not entitled to paid sick-leave for a work-related injury or occupational disease for which the worker can claim compensation under the Compensation for Occupational Injuries and Diseases Act.
SCC 11.3.10	**Maternity Leave** (a) A worker may take up to four consecutive months' unpaid maternity leave. (b) A worker is not entitled to any payment or employment-related benefits during maternity leave. (c) A worker must give her Employer reasonable notice of when she will start maternity leave and when she will return to work.
	(d) A worker is not required to take the full period of maternity leave. However, a worker may not work for four weeks before the expected date of birth of her child or for six weeks after the birth of her child, unless a medical practitioner, midwife or qualified nurse certifies that she is fit to do so. (e) A worker may begin maternity leave – (i) four weeks before the expected date of birth; or (ii) on an earlier date – (1) if a medical Practitioner, Midwife or Certified Nurse certifies that it is necessary for the health of the worker or that of her unborn child; or (2) if agreed to between Employer and worker; or (iii) on a later date, if a medical Practitioner, Midwife or Certified nurse has certified that the worker is able to continue to work without endangering her health. (f) A worker who has a miscarriage during the third trimester of pregnancy or

	bears a stillborn child may take maternity leave for up to six weeks after the miscarriage or stillbirth. (g) A worker who returns to work after maternity leave has the right to start a new cycle of twenty-four months' employment, unless the SPWP on which she was employed has ended.
SCC 11.3.11	**Family responsibility leave** Workers, who work for at least four days per week, are entitled to three days paid family responsibility leave each year in the following circumstances – (a) when the employee's child is born; (b) when the employee's child is sick; (c) in the event of a death of – (i) the employee's spouse or life partner; (ii) the employee's parent, adoptive parent, grandparent, child, adopted child, grandchild or sibling.
SCC 11.3.12	**Statement of Conditions** (a) An Employer must give a worker a statement containing the following details at the start of employment – (i) the Employer's name and address and the name of the SPWP; (ii) the tasks or job that the worker is to perform; and (iii) the period for which the worker is hired or, if this is not certain, the expected duration of the Contract; (iv) the worker's rate of pay and how this is to be calculated; (v) the training that the worker will receive during the SPWP. (b) An Employer must ensure that these terms are explained in a suitable language to any employee who is unable to read the statement. (c) An Employer must supply each worker with a copy of these Conditions of employment.

SCC 11.3.13	**Keeping Records** (a) Every Employer must keep a written record of at least the following – (i) the worker's name and position; (ii) in the case of a task-rated worker, the number of tasks completed by the worker; (iii) in the case of a time-rated worker, the time worked by the worker; (iv) payments made to each worker. (b) The Employer must keep this record for a period of at least three years after the completion of the SPWP.

SCC 11.3.14	**Payment** (a) An Employer must pay all wages at least monthly in cash or by cheque or into a bank account. (b) A task-rated worker will only be paid for tasks that have been completed. (c) An Employer must pay a task-rated worker within five weeks of the work being completed and the work having been approved by the manager or the Contractor having submitted an invoice to the Employer. (d) A time-rated worker will be paid at the end of each month. (e) Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker. (f) Payment in cash or by cheque must take place – (i) at the workplace or at a place agreed to by the worker; (ii) during the worker's working hours or within fifteen minutes of the start or finish of work; (iii) in a sealed envelope which becomes the property of the worker. (g) An Employer must give a worker the following information in writing – (i) the period for which payment is made; (ii) the numbers of tasks completed or hours worked; (iii) the worker's earnings; (iv) any money deducted from the payment; (v) the actual amount paid to the worker. (h) If the worker is paid in cash or by cheque, this information must be recorded on the envelope and the worker must acknowledge receipt of payment by signing for it (i) If a worker's employment is terminated, the Employer must pay all monies owing to that worker within one month of the termination of employment.

SCC 11.3.15	**Deductions** (a) An Employer may not deduct money from a worker's payment unless the deduction is required in terms of a law. (b) An Employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay. (c) An Employer who deducts money from a worker's pay for payment to another person must pay the money to that person within the time period and other requirements specified in the agreement law, court order or arbitration award concerned. (d) An Employer may not require or allow a worker to –

	(i) repay any payment except an overpayment previously made by the Employer by mistake; (ii) state that the worker received a greater amount of money than the Employer actually paid to the worker; or (iii) pay the Employer or any other person for having been employed.
SCC 11.3.16	**Health and Safety** (a) Employers must take all reasonable steps to ensure that the working environment is healthy and safe. (b) A worker must – (i) work in a way that does not endanger his/her health and safety or that of any other person; (ii) obey any health and safety instruction; (iii) obey all health and safety rules of the SPWP; (iv) use any personal protective equipment or clothing issued by the Employer; (e) report any accident, near-miss incident or dangerous behaviour by another person to their Employer or manager.
SCC 11.3.17	**Compensation for Injuries and Diseases** (a) It is the responsibility of the Employers (other than a Contractor) to arrange for all persons employed on a SPWP to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993. (b) A worker must report any work-related injury or occupational disease to their Employer or manager. (c) The Employer must report the accident or disease to the Compensation Commissioner. (d) An Employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months. The Employer will be refunded this amount by the Compensation Commissioner. This does NOT apply to injuries caused by accidents outside the workplace such as road accidents or accidents at home.

SCC 11.3.18	**Termination** (a) The Employer may terminate the employment of a worker for good cause after following a fair procedure. (b) A worker will not receive severance pay on termination. (c) A worker is not required to give notice to terminate employment. However, a worker who wishes to resign should advise the Employer in advance to allow the Employer to find a replacement. (d) A worker who is absent for more than three consecutive days without informing the Employer of an intention to return to work will have terminated the Contract. However, the worker may be re-engaged if a position becomes

	available for the balance of the 24-month period. (e) A worker who does not attend required training events, without good reason, will have terminated the Contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.
SCC 11.3.19	**Certificate of Service** On termination of employment, a worker is entitled to a certificate stating – (i) the worker's full name; (ii) the name and address of the Employer; (iii) the SPWP on which the worker worked; (iv) the work performed by the worker; (v) any training received by the worker as part of the SPWP; (vi) the period for which the worker worked on the SPWP; (vii) any other information agreed on by the Employer and worker.
SCC 11.3.20	**Reporting** The Contractor shall report the breakdown of each payment certificate into the broad categories of: a) Overheads, b) Supervision, c) Materials, d) Plant, and e) Labour. The Contractor shall further report for each payment certificate the person-days of employment as set out in the Pro Forma, Schedule T: Monthly Labour Report. In the calculation of person-days, a day shall be taken as 8 hours and no time over and above 8 hours per day shall be used to contribute to the number of person-days reported.
SCC 11.3.21	**Source of Labour** The Contractor shall source his labour from the local area through the services of an appropriate Councillor or Community Liaison Officer or another appointed person who has contact with a labour pool in the area.

4. TRANSFER OF RIGHTS

The successful Bidder should complete and submit a Transfer of Rights Form to claim for materials on site with every progress payment for the project. No payment for materials on site would be granted if this Document is not submitted with the progress payment being considered.

TRANSFER OF RIGHTS

TRANSFER OF RIGHTS AND INDEMNITY (To be completed during construction by successful Bidder only)

Claim for materials on site, Payment Certificate No. …… **Date:** ……..

Contract No: ……. For (Contract title) ……

……

I, the undersigned (name of signatory) ……..……...… in my capacity as

…….. of (name of Contractor) ……

duly authorised hereto on behalf of the Contractor hereby transfer, cede and assign all the Contractor's rights, title and interest in and to the materials and goods, for which evidence of bona fide ownership is attached hereto, unto and in favour of (name of Employer) …….. insofar as the Contractor retains actual control of the materials and goods, the right of ownership thereof passes to the Employer by *constitutum possessorium.*

I herewith indemnify the Employer against any claim to and in respect of said materials by reason of the Contractor's sequestration or liquidation or of any defect in the Contractor's title to the materials and agree that no payment for materials on site will be made by the Employer until such time as I have submitted documentary proof of bona fide ownership of the said materials and goods.

This transfer shall become effective upon conclusion of the Contractor receiving payment from the Employer or from any other person on behalf of the Employer for the materials and goods as Materials on Site, payment of retention money thereon excluded.

I further confirm that I am fully responsible for all materials and goods listed under this Transfer of Rights and that they have been insured adequately against all risks and will remain insured until they are built into or used in the permanent works and taken over by the Employer.

This certificate of Transfer of Rights applies only to the materials and goods as listed in the following table.

Description of Item	Unit	Quantity	Rate	Amount	Supplier
Total Value of Materials and goods					

Signed by: ……Date: ……..……..……
for and on behalf of the Contractor.

Witnessed by: ……. Date: ……

NOTE: This form, together with the documentary proof of ownership or proof of payment by the Contractor to the supplier, shall accompany the Contractor's claim for payment for materials on site in terms of Clause 6.9.1.2 and 6.10.1.5 of the General Conditions of Contract 2010.

C1.2.2 PART A: DATA PROVIDED BY THE EMPLOYER

The following Contract Specific Data are applicable to this Contract.

REFERENCE	CONTRACT SPECIFIC DATA BY THE EMPLOYER
Clause 1.1.1.15:	**Name of Employer:** Limpopo Department of Agriculture and Rural Development, Polokwane
Clause 1.2.1.2:	**Address of Employer:**

Physical:	Postal:
Limpopo Dept of Agriculture 69 Biccard Street Polokwane 0700	Limpopo Dept of Agriculture P Bag X9487 Polokwane 0700
E-Mail:	
Telephone No: (015) 294 3000	Fax No: (015) 294 4535

Clause 1.1.1.16: **Name of Engineer: (*To be provided with the request for Quotations for a specific project)***

Clause 1.2.1.2: **Address of Engineer: (*To be provided with the request for Quotations for a specific project)***

Physical:	Postal:
E-Mail:	
Telephone No:	Fax No:

Clause 1.1.1.12 & 5.8.1: Special non-working days are Sundays and the following statutory public holidays as declared by National or Regional Government:

New Year's Day, Human Rights Day, Good Friday, Family Day, Freedom Day, Workers day, Youth Day, National Women's Day, Heritage Day, Day of Reconciliation, Christmas Day and the Day of Goodwill including the construction industry year end break.

Clause 1.1.1.26: The Pricing Strategy is Re-Measurable Contract.

Clause 1.1.1.12: The year end break commences on the first working day after 15 December and ends on the first working day after 5 January of the next year.

Appendix 3: Performance Guarantee to be delivered within 14 days of the Commencement Day.

The total liability under the guarantee should not be less than 10% of the Bid amount, excluding VAT.

Clause 5.3: The Contractor shall commence executing the work within 14 days of the Commencement date.

Clause 5.6.1: The Contractor shall deliver his programme of work within 14 days of the Commencement date.

Clause 8.6.1.1.2: The value of material to be supplied by the Employer is nil.

Clause 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 200 000.00

Clause 8.6.1.3: The limit of indemnity for Liability Insurance is R 5 000 000.00 for any single liability claim. Liability insurance shall include spread of fire risk.

Clause 6.5.1.2.3: The percentage allowance to cover overhead charges is 15%.

Clause 1.1.1.14: The Works shall be completed within ***(To be provided with the request for Quotations for a specific project)*** excluding special non-working days and the year-end break.

Clause 5.13.1: The penalty for failing to complete the works is 0.5 % of the Total Bid Sum per Calendar Day.

Clause 5.16.3: The latent defect period is 5 years.

Clause 6.8.2: Contract Price Adjustment will be allowed for this Contract as claimed in SBD3.2.
The price will be adjusted by the price indices as contained in the applicable Statistical release, published by Statistics South Africa.

The Factors are:
D1 Labour
The province wherein the larger part of the site is located is Limpopo province for which the Labour Index would be applicable from Statistical Release, P0141, Table A.

D2 Contractor's equipment
For Contractors equipment, Plant and equipment, Statistical Release, P0151.1, Table 4.

D3 Material
The applicable industry to for the Producer Price Index for materials is Civil Engineering, Statistical Release, P0151.1, Table 2.

D4 Fuel
The Producer Price Index for fuel, in the publication Statistical Release, P0142.1, Table 1 Diesel.

The base month is the month prior to closing of bids.

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

Clause 6.10.3: The percentage retention on the amounts due to the Contractor is 10 %, excluding Contract Price Adjustment, Contingencies and VAT, and limited to 5% of the Contract amount, excluding Contract Price Adjustment, Contingencies and VAT.

A Retention money Guarantee will **not** be permitted.

Clause 1.1.1.13: The Defects Liability Period is 12 months measured from the date of the Certificate of Completion.

Clause 10.3.2: Dispute resolution shall be by Adjudication.

Clause 3.1.3: The Engineer is required to obtain the specific approval of the Employer for the following:

The Engineer requires Departmental approval in order to authorise any expenditure in excess of the Bid Sum plus 15% Contingencies.

C1.2.2: PART B: DATA PROVIDED BY THE CONTRACTOR

The following Contract Specific Data are applicable to this Contract:

REFERENCE **CONTRACT SPECIFIC DATA BY THE CONTRACTOR**

Clause 1.1.1.9: **Name of Contractor**: ……..

Clause 1.2.1.2: **Address of the Contractor**:

Physical: Postal:

....

....

....

....

E-Mail: .....

Telephone No: ……..... Fax No: ……

Clause 6.8.3: The variation in cost of all special materials is to be provided in the table SM 1 for special materials.

The rates and prices for the special materials shall be furnished by the Bidder, which rates and prices shall not include VAT but shall include all other obligatory taxes and levies. **The quoted price is the ruling price on the Month prior to close of Bid.**

TABLE: SM1

Special material	**Unit on which variation will be determined**		**Price for base month ex factory, excluding transport, labour or any other costs.**
	Containers	Delivered in bulk	

* Contractor to indicate the type, unit and rate of special material to be listed. When called upon to do so, the Contractor shall substantiate the above rates or prices with acceptable documentary evidence. Contractor to provide any other Special Materials if deemed necessary

C1.3 FORM OF GUARANTEE - PRO FORMA

Contract No.
WHEREAS **The Limpopo Department of Agriculture and Rural Development** (hereinafter referred to as the Employer") entered into, a Contract with:

. . . . . .

(Hereinafter called "the Contactor") on the . . . . . day of . . . . . 20. . . . . .

For: ACDP 24/01: A 3-YEAR FRAMEWORK AGREEMENT FOR DRILLING, TESTING AND EQUIPPING OF BOREHOLES, FOR THE LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT: (*Name of project – To be provided during the request for quotations*)

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

AND WHEREAS . . . . . has / have at the request of the Contractor, agreed to give such Guarantee;

NOW THEREFORE WE . . . . . do hereby Guarantee and bind ourselves jointly and severally as Guarantor and Co-principal Debtors to the Employer under renunciation of the benefits of division and execution for the due and faithful performance by the Contractor of all the Terms and Conditions of the said Contract, subject to the following Conditions:

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

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

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

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

5. Our total liability hereunder shall not exceed the Guaranteed Sum of:

   . . . . . .

   . . . . . .Rand (in words);

   R. . . . . (in figures)

6. The Guarantor reserves the right to withdraw from this Guarantee by depositing the Guaranteed Sum with the beneficiary, whereupon our liability hereunder shall cease.

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

   . . . . . .

   . . . . . .

   . . . . . .

. . . . . .

IN WITNESS WHEREOF this Guarantee has been executed by us at . . . . . .
on this . . . . . day of . . . . . 20 . . . . . .

Signature . . . . . .

Duly authorized to sign on behalf of . . . . . .

Address . . . . . .

. . . . . .

. . . . . .

As witnesses:

1 . . . . . .

2 . . . . . .

C1.4: AGREEMENT IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT NO 85 OF 1993

THIS AGREEMENT is made between **The Limpopo Department of Agriculture and Rural Development**

(hereinafter called the EMPLOYER of the one part, herein represented by:

....

in his capacity as: ..... ;

AND: ....

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

....

in his capacity as: .....

duly authorised to sign on behalf of the Contractor.

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

CONTRACT No: ACDP 24/01: DRILLING, TESTING, AND EQUIPPING OF BOREHOLES ***(Name of project – To be provided during the request for quotations*****)**

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

NOW THEREFORE the parties agree as follows:

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

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

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

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

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

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

on this the …… day of ……...…….…… 20……

SIGNATURE: .....

NAME AND SURNAME: .....

CAPACITY: .....

WITNESSES: 1. .....

2. .....

Thus signed at ……. for and on behalf of the EMPLOYER on this

the ……... day of ……..…… 20……

SIGNATURE: .....

NAME AND SURNAME: .....

CAPACITY: .....

WITNESSES: 1. .....

2. .....

PART C2: PRICING DATA

C2.1: PRICING INSTRUCTIONS

C2.2: BILL OF QUANTITIES

LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

A 3-YEAR FRAMEWORK AGREEMENT FOR DRILLING, TESTING AND EQUIPPING OF BOREHOLES, FOR THE LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

C2.1 Pricing Instructions

1. Measurement and payment shall be in accordance with the relevant provisions of the General Conditions of Contract (2010 edition) as amended in the Scope of Works.

2. The units of measurement described in this Bill of Quantities are metric units. Abbreviations used in the Bill of Quantities are as follows:

%	=	percent
h	=	hour
ha	=	hectare
kg	=	kilogram
kl	=	kilolitre
km	=	kilometre
km-pass	=	kilometre-pass
kPa	=	kilopascal
kW	=	kilowatt
l	=	litre
m	=	metre
mm	=	millimetre
m²	=	square metre
m²-pass	=	square metre-pass
m³	=	cubic metre
m³-km	=	cubic metre-kilometre
MN	=	meganewton
MN.m	=	meganewton-metre
MPa	=	megapascal
No.	=	number
Prov sum	=	Provisional sum
PC sum	=	Prime Cost sum
R/only	=	Rate only
sum	=	lump sum
t	=	ton (1000 kg)
W/day	=	Work day

3. For the purpose 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 Specifications
Quantity:	The number of units of work for each item.
Rate:	The agreed payment per unit of measurement.
Amount:	The product of the quantity and the agreed rate for an item.
Lump sum:	An agreed amount for an item, the extent of which is described in the Bills of Quantities but the quantity of work of which is not measured in any units.

4. Unless otherwise stated, items are measured net in accordance with the Drawings, and no allowance is made for waste.

5. The prices and rates in this Bill of Quantities are fully inclusive prices for the Work described under the items. Such prices and rates cover all costs and expenses that may be required in and for the execution of the Work described in accordance with the provisions of the Scope of Work, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the Contract Data, as well as overhead charges and profit. These prices will be used as a basis for assessment of payment for additional Work that

may have to be carried out.

6. It will be assumed that prices included in the Bill of Quantities are based on Acts, Ordinances, Regulations, By-laws, International Standards and National Standards that were published 28 days before the closing date for Bids. (Refer to www.stanza.org.za or www.iso.org for information on Standards)

7. Where the Scope of Work requires detailed Drawings and designs or other information to be provided, all costs associated therewith are deemed to have been provided for and included in the unit rates and sum amounts Bidded for such items

8. An item against which no price is entered will be considered to be covered by the other prices or rates in the Bill of Quantities. A single Lump Sum will apply should a number of items be grouped together for pricing purposes.

9. The quantities set out in this Bill of Quantities are approximate and do not necessarily represent the actual amount of Work to be done. The quantities of work accepted and Certified for Payment will be used for determining payments due and not the quantities given in this Bill of Quantities.

10. The short descriptions of the items of payment given in this Bill of Quantities are only for the purposes of identifying the items. More details regarding the extent of the work entailed under each item appear in the Scope of Work.

11. The item numbers appearing in the Bills of Quantities refer to the corresponding item numbers in the Specifications where applicable.

12. Those parts of the contract to be constructed using labour-intensive methods have been marked in the Bills of Quantities with the letters “LI” in a separate column filled in against every item so designated. The works, or parts of the works so designated are to be constructed using labour-intensive methods only. The use of plant to provide such works, other than plant specifically provided for in the scope of work, is a variation to the contract. The items marked with the letters LI are not necessarily an exhaustive list of all the activities which must be done by hand, and this clause does not over-ride any of the requirements in the generic labour-intensive specification in the Scope of Works.

13 Payment for items which are designated to be constructed labour-intensively (either in this schedule or in the Scope of Works) will not be made unless they are constructed using labour-intensive methods. Any unauthorised use of plant to carry out work which was to be done labour-intensively will not be condoned and any works so constructed will not be certified for payment.

C2.2 BILL OF QUANTITIES

SCHEDULE A PRELIMINARY AND GENERAL

SCHEDULE B DRILLING OF BOREHOLES

SCHEDULE C TESTING OF BOREHOLES

SCHEDULE D PUMPS

SCHEDULE E ELECTRICAL

SCHEDULE F PIPES AND FITTINGS

SCHEDULE G ANCILLARY WORKS

SUMMARY OF SCHEDULE OF QUANTITIES AND CALCULATION OF TENDER AMOUNT

SCHEDULE A : PRELIMINARY AND GENERAL

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
1	**SANS 1200A**	**PRELIMINARY & GENERAL ITEMS**				
1,1	**8,3 PSA5.1**	**FIXED-CHARGE AND VALUE-RELATED ITEMS** *(Note that the combined total for fixed-charge, value-related and time-related items shall not exceed 15% of the tender sum)*				
1.1.1	8.3.1	Contractual Requirements	Sum	1		
	8.3.2	**Establishment of Facilities on Site**				
1.1.2	8.3.2.2	FACILITIES FOR CONTRACTOR				
		a) Offices and storage shed	Sum	1		
		d) Living accommodation	Sum	1		
		e) Ablution and Latrine Facilities	Sum	1		
		f) Tools and equipment	Sum	1		
		g) Water supplies, electrical power and communication	Sum	1		
1.1.3	8.3.4	Removal of Site Establishment	Sum	1		
1,2	**8.4**	**SCHEDULED TIME-RELATED ITEMS**				
1.2.1	8.4.1	Contractual Requirements	Sum	1		
	8.4.2	**Operation and Maintenance of Facilities on Site**				
1.2.2	8.4.2.2	FACILITIES FOR CONTRACTOR				
		a) Offices and storage shed	Sum	1		
		d) Living accommodation	Sum	1		
		e) Ablution and Latrine Facilities	Sum	1		
		f) Tools and equipment	Sum	1		
		g) Water supplies, electrical power and communication	Sum	1		
1.2.3	8.4.3	Supervision for Duration of Construction	Sum	1		
Total Carried Forward						

SCHEDULE A : PRELIMINARY AND GENERAL (continue)

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
1,3	**8,5**	**SUMS STATED PROVISIONALLY BY ENGINEER**				
1.3.1	8.5 (b)	a) Topgraphical Survey	Prov Sum	1	-	R 50 000,00
		b) Remuneration of Community Liaison Officer (CLO)	Prov Sum	1	-	R 15 000,00
		c) Overheads, charges and profit on a) to b) above	%	65 000		
1,4	**8,6**	**PRIME COST ITEMS**				
1.4.1		Sum for compensation to Consulting Hydrogeologist for Geophysical investigations, Geophysical field work, reporting, supervision and traveling expenses during construction.	PC Sum	1	-	R 55 000,00
1.4.2		Charges and profit on above items	%	55000		
1.5	**8,8**	**TEMPORARY WORKS**				
1.5.1	8.8.4	Existing Services				
1.5.1.1		Excavation by hand in soft material to expose exising services	m^3	1		
1.5.1.2		Temporary protection of existing services	Sum	1		
1.6	**Part C3**	**OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION** *Note: The sum of the amounts for these items shall not be less than one percent (1%) of the Tender Sum*				
1.6.1	PSA5.3(a)	Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations	Sum	1		
1.6.2	(b)	Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations	Month	1		
1.6.3	(c)	Submission of the Health and Safety File	Sum	1		
Total Carried Forward						

SCHEDULE A : PRELIMINARY AND GENERAL (continue)

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
1,7	**Part C3**	**ENVIRONMENTAL MANAGEMENT PLAN**				
1.7.1	3,1	Contractor's initial obligations in respect of the Environmental Management Plan, including compliance with all environmental regulations	Sum	1		
1.7.2	3,2	Contractor's time related obligations in respect of the Environmental Management Plan, including compliance with all environmental regulations	month	1		
1.7.3	3,3	Penalty for unnecessary removal or damage to trees for the following diameter sizes:				
		a) 1500mm girth or less	Per tree		-5000	Rate Only
		b) Greater than 1500mm, but less than 5000mm girth	Per tree		-10000	Rate Only
1,8	3,4	Penalty for serious violations:				
		a) Hazardous chemical/oil spill and/or dumping in non-approved sites	Incident		-10000	Rate Only
		b) General damage to sensitive environments	Incident		-5000	Rate Only
		c) Damage to cultural and historical sites	Incident		-5000	Rate Only
		d) Pollution of water sources	Incident		-10000	Rate Only
		g) Damage to sensitive vegetation within "no-go" areas (Depending on vegetation damaged, plus rehabilitation thereof at Contractor's cost)	Incident		-5000	Rate Only
Total Carried Forward						

SCHEDULE A : PRELIMINARY AND GENERAL (continue)

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
1,9	3,5	Penalty for less serious violations				
		a) Littering on site	Incident		-1000	Rate Only
		b) Lighting of illegal fires on site	Incident		-2000	Rate Only
		c) Persistent or un-repaired fuel and oil leaks	Incident		-1000	Rate Only
		e) Any vehicles or equipment related to the Contractor's operations found within the designated "no-go" areas	Incident		-3000	Rate Only
		f) Excess dust or excess noise emanating from site	Incident		-1000	Rate Only
		h) Possession or use of intoxicating substances on site	Incident		-500	Rate Only
		i) Any vehicles being driven in excess of designated speed limits	Incident		-500	Rate Only
		j) Removal and/or damage to flora or cultural or heritage objects on site, and/or killing of wildlife	Incident		-2000	Rate Only
		k) Illegal hunting	Incident		-2000	Rate Only
		l) Urination and defecating anywhere except in designated areas	Incident		-500	Rate Only
TOTAL SCHEDULE A CARRIED FORWARD TO SUMMARY						

SCHEDULE B : DRILLING OF BOREHOLES

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
2		**DRILLING OF BOREHOLES**				
2,1	**SANS 1200C**	**SITE ESTABLISHMENT**				
2.1.1	8.2.1	Clear and grub 3m wide for access road (Provisionally)	m	1		
2.1.2		Mobilisation and set up of plant to/at first borehole	Sum	1		
2.1.3		Set-up of plant per boreholes (after first) up to 10km	No	1		
2.1.4		Interhole moves For distances more than 10km	km	1		
2.1.5	8.2.5	Take down and reinstate existing fences with written approval of the Engineer. (Provisional)	m	1		
		DRILLING: (Unconsolidated and consolidated sediments and igneous, metarmophic and fractured carbonate rocks)				
2,2		**Rotary air percussion with foam - 0 to 150m**				
2,2,1		165mm diameter	m	1		
2,2,2		203 or 216mm diameter	m	1		
2,2,3		254mm diameter	m	1		
2,2,4		305mm diameter	m	1		
2,3		**Odex (including supply, delivery & installation of at least 6 mm sidewall Odex casing)**				
2,3,1		194 mm OD (including casing)	m	1		
2,3,2		219 mm OD (including casing)	m	1		
2,3,3		273 mm OD (including casing)	m	1		
		DRILLING (Highly abrasive rocks e.g. quartzite)				
2,4		**Rotary air percussion with foam – 0 to 150 m**				
2,4,1		165mm diameter	m	1		
2,4,2		203 or 216mm diameter	m	1		
2,4,3		254mm diameter	m	1		
2,4,4		305mm diameter	m	1		
Total Carried Forward						

SCHEDULE B : DRILLING OF BOREHOLES (continue)

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
		DRILLING (Leached / cavernous carbonate rocks)				
2,5		**Rotary air percussion with foam**				
2,5,1		165mm diameter	m	1		
2,5,2		203 or 216mm diameter	m	1		
2,5,3		254mm diameter	m	1		
2,5,4		305mm diameter	m	1		
2,6		**Odex (including supply, delivery & installation of at least 6 mm sidewall Odex casing)**				
2,6,1		194 mm OD (including casing)	m	1		
2,6,2		219 mm OD (including casing)	m	1		
2,6,3		273 mm OD (including casing)	m	1		
		CASING (supplied, delivered and installed)				
2,7		**Steel (bevel-edged plain)**				
2,7,1		165 mm ID (minimum wall thickness 4 mm)	m	1		
2,7,2		215 mm ID (minimum wall thickness 4.5 mm)	m	1		
2,7,3		254 mm ID (minimum wall thickness 4.5 mm)	m	1		
2,8		**Steel (slotted, width 3-4 mm)**				
2,8,1		165 mm ID (minimum wall thickness 4 mm)	m	1		
2,8,2		215 mm ID (minimum wall thickness 4.5 mm)	m	1		
2,8,3		254 mm ID (minimum wall thickness 4.5 mm)	m	1		
2,9		**UPVC (flush internal/external thread-jointed, plain)**				
2,9,1		165 mm ID (minimum wall thickness 7 mm)	m	1		
2,9,2		181 mm ID (minimum wall thickness 8.5 mm)	m	1		
2,9,3		203 mm ID (minimum wall thickness 9.1 mm)	m	1		
2,9,4		227 mm ID (minimum wall thickness 11 mm)	m	1		
Total Carried Forward						

SCHEDULE B : DRILLING OF BOREHOLES (continue)

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
2,10		**UPVC (flush internal/external thread-jointed, perforated)**				
2,10,1		127 mm ID (minimum wall thickness 6 mm)	m	1		
2,10,2		150 mm ID (minimum wall thickness 6 mm)	m	1		
2,10,3		165 mm ID (minimum wall thickness 7 mm)	m	1		
2,10,4		181 mm ID (minimum wall thickness 8.5 mm)	m	1		
2,10,5		203 mm ID (minimum wall thickness 9.1 mm)	m	1		
2,10,6		227 mm ID (minimum wall thickness 11 mm)	m	1		
2,11		**CASING SHOES**				
2,11,1		To fit 165 mm ID steel casing	m	1		
2,11,2		To fit 215 mm ID steel casing	m	1		
2,11,3		To fit 254 mm ID steel casing	m	1		
2,12		**REAMING OF BOREHOLES**				
2,12,1		152 mm or 165 mm to 203 mm or 219 mm diameter	m	1		
2,12,2		203 mm or 219 mm to 254 mm diameter	m	1		
2,12,3		152 mm or 165 mm to 254 mm diameter	m	1		
2,13		**RECOVERY OF STEEL CASING**	m	1		
2,14		**FORMATION STABILISER** (supplied, delivered and installed) 5-8mm well rounded silica gravel	kg	1		
2,15		**CONCRETE COLLAR** (complete per borehole) (2 m x 2 m x 0.5 m)	No	1		
2,16		**BENTONITE SANITARY SEAL** (complete per borehole) (maximum of 5m)				
2,16,1		Type I (305 mm hole & 254 mm ID casing)	No	1		
2,16,2		Type II (305 mm hole & 215 mm ID casing)	No	1		
2,17		**BOREHOLE DISINFECTION** (complete per borehole)	No	1		
2,18		**BOREHOLE PROTECTION** (complete per borehole) (including casing lid)	No	1		
Total Carried Forward						

SCHEDULE B : DRILLING OF BOREHOLES (continue)

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
2,19		**STONE PLUG (for unsuccessful boreholes)** 3m casing installed and concrete block constructed around casing. Must be marked clearly dry on casing lid)	No	1		
2,20		**BOREHOLE MARKING** (complete per borehole) 300 mm x 200 mm x 3mm thick rectangular steel plate (complete with concrete embedment)	No	1		
2,21		**DATA RECORDING AND REPORTING** (complete per borehole to include: GPS coordinates, penetration rates, logs)	No	1		
2,22		**DEVELOPMENT of BOREHOLE** (also for blow yield)	Hr	1		
2,23		**BOREHOLE REHABILITATION**				
2,23,1		With rotary air percussion drilling rig	Hr	1		
2,23,2		With cable tool (jumper) drilling rig	Hr	1		
2,24		**CASUAL (Day) LABOUR sourced locally**	Day	1		
TOTAL SCHEDULE B CARRIED FORWARD TO SUMMARY						

SCHEDULE C : TESTING OF BOREHOLES

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
3		**TESTING OF BOREHOLES**				
3.1		**Transport and inter hole moves**				
3,1,1		Establishment/de-establishment	sum	1		
3,1,2		Set-up of Plant per borehole (after first) For distances up to 10km	No	1		
3,1,3		For distances exceeding 10km	km	1		
3,2		**Installation of Test Pump (depth up to 80m)**				
3,2,1		For yield up to 10 l/s	No	1		
3,2,2		For yield greater than 10l/s	No	1		
3,3		**Installation of Test Pump (per meter over 80m)**				
3,3,1		For yield up to 10 l/s	No	1		
3,3,2		For yield greater than 10l/s	No	1		
3,4		**Laying out of Discharge Hose**				
3,4,1		Minimum of 50m	No	1		
3,4,2		50m to 100m (extra-over 50m)	m	1		
		Existing equipment removal and re-installation				
3,5		**Hand pump installation**				
3,5,1		Removal for first 50m depth	No	1		
3,5,2		Removal from depths extra-over 50m	m	1		
3,5,3		Re-installation to 50m depth	No	1		
3,5,4		Re-installation to depths extra-over 50m	m	1		
3,6		**Wind pump installations**				
3,6,1		Removal for first 50m depth	No	1		
3,6,2		Removal from depths extra-over 50m	m	1		
3,6,3		Re-installation to 50m depth	No	1		
3,6,4		Re-installation to depths extra-over 50m	m	1		
3,7		**Motorised installations (electric or diesel -driven**				
3,7,1		Removal for first 50m depth	No	1		
3,7,2		Removal from depths extra-over 50m	m	1		
Total Carried Forward						

SCHEDULE C : TESTING OF BOREHOLES (continue)

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
3,7,3		Re-installation to 50m depth	No	1		
3,7,4		Re-installation to depths extra-over 50m	m	1		
3,8		**Borehole superstructure**				
3,8,1		Dismantling of superstructure	No	1		
3,8,2		Re-assembly of superstructure	No	1		
3,9		**Minor repairs to existing equipment**				
3,9,1		Materials	Sum	1		
3,9,2		Labour	Hr	1		
3,9,3		Mark-up on spares	%	Rate only		Rate only
3,9,4		Travelling costs	km	1		
		Testing:				
3,10		**Calibration Test**	no	1		
3,11		**Stepped discharge test**				
3,11,1		For yields up to 10 l/s	hr	1		
3,11,2		For yields greater than 10l/s	hr	1		
3,12		**Constant discharge test**				
3,12,1		For yields up to 10 l/s	hr	1		
3,12,2		For yields greater than 10l/s	hr	1		
3,13		**Recovery monitoring**	hr	1		
3,14		**Borehole Disinfections** (complete per borehole)	No	1		
3,15		**Borehole Protection** (complete per borehole)	No	1		
3,16		**Borehole marking** (complete per borehole)	No	1		
3,17		**Site Finishing** (complete per borehole)	No	1		
3,18		**Water level monitoring per observation hole**	hr	1		
TOTAL SCHEDULE C CARRIED FORWARD TO SUMMARY						

SCHEDULE D : PUMPS

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
4		**PUMPS**				
4.1	**SANS 1200C**	**Clearing and Grubbing**				
4.1.1	8.2.1	Clear and grub area for pump installation	m^2	1		
4.2	**1200D**	**Earthworks**				
4.2.1	8.3.1	Remove topsoil to nominal depth 150mm, stockpile and maintain.	m^3	1		
4.2.2	8.3.3	Restricted excavation in all materials and use for backfill, or embankment or dispose as ordered within free-haul distance. Allow 2km free haul in rate.	m^3	1		
4.2.3	8.3.3	Extra-over for hard rock and boulder excavation	m^3	1		
4.2.4	8.3.4	Import G6 material from commercial sources or borrow pits for hard core filling of Pumphouse	m^3	1		
4.2.5	8.3.8.1	Hand excavation for locating and exposing existing services: In all areas.	m^3	1		
4.3	**1200G**	**Concrete**				
4.3.1	8.2.2	Smooth vertical formwork on sides of foundations.	m^2	1		
4.3.2		High Tensile Steel Bars (6 meter length)				
		a) Y10 (6 meter length)	no	1		
		b) Y12 (6 meter length)	no	1		
4.3.3		Mild Steel Bars (6 meter lenth)				
		a) R8 (6 meter length)	no	1		
4.3.4		Reinforcing Mesh (2400mm x 6000mm)				
		a) Ref: 193 (2400mm x 6000mm x 5,6mm)	no	1		
4.3.5	8.4.3	Concrete				
		a) Class 25/19 concrete	m^3	1		
		b) Class 30/19 concrete	m^3	1		
4.3.6	8.4.4	Unformed Surface finish				
		a) Wood floated finish	m^2	1		
		b) Steel Floated finish	m^2	1		
Total Carried Forward						

SCHEDULE D : PUMPS (continue)

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
4.4	**8,4**	**Brickwork** 220mm brick wall complete, in stretcher bond, one side face brick, other side plastered, including damp proof course, & brick force every fourth layer (14MPa bricks	m^2	1		
4.5		**Doors & Security Gates** Supply and install complete:				
4.5.1		Combi Steel Frame and Door, 1,2mm thickness, double rebated mild steel door frames suitable for half brick walls, complete with standard butt hinges, factory applied primer, with 2 coats of enamel paint, complete mortice lockset, striker plate and set of keys.				
		a) Single Door and Frame 813 x 2 032mm	no	1		
		b) Double Doors and Frame 1 511 x 2 032mm	no	1		
4.5.2		Combi Steel Frame and Door, 1,2mm thickness, double rebated mild steel door frames suitable for one brick walls, complete with standard butt hinges, factory applied primer, with 2 coats of enamel paint, complete mortice lockset, striker plate and set of keys.				
		a) Single Door and Frame 813 x 2 032mm	no	1		
		b) Double Doors and Frame 1 511 x 2 032mm	no	1		
4.5.3		Security Gate 25 x 25 x 2mm galvanised mild steel frame with 12mm galvanised mild steel square bars infill placed at 109mm centres, hung with galvanised mild steel hinges including locks, handles, ironmongery complete and fixed to brickwork:				
		a) Single Security gate 900 x 2050mm	no	1		
		b) Double Security gate 1800 x 2050mm	no	1		
4.6		**Roof** Supply and construct complete:				
4.6.1		Galvanised Lip Channel a) 75mm x 50mm x 20mm x 2mm x 6m	no	1		
		b) 150mm x 50mm x 20mm x 2mm x 6m	no	1		
		c) 175mm x 50mm x 20mm x 2mm x 6m	no	1		
Total Carried Forward						

SCHEDULE D : PUMPS (continue)

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
4.6.2		Galvanised profiled metal sheeting, screws and all accessories, supply and install complete, fixed to steel roof members.				
		a) Galvanised IBR profile 0,4mm Z100	m^2	1		
		b) Galvanised IBR profile 0,47mm Z150	m^2	1		
		c) Galvanised IBR profile 0,58mm Z200	m^2	1		
4.7		**Lockable Steel Manhole Cover** Supply and install complete lockable fabricated steel manhole cover for submerable pump as per Drawing No. 1701321-TY-05	no	1		
4.8		**Submersible Borehole Pump and Motor set** Supply, Install, Testing and Commission a complete submersible pump and motor set, up to 100m depth, inclusive of riser pipe (priced elsewhere), electrical submersible cable (priced elsewhere), recovery rope, flow inducer (cooling) sleeve, accessories and all fittings to connect to the electricity supply piont and delivery pipe as per Drawing No. 1701321-TY-06				
4.8.1		Single phase, Single stage Pump & Motor				
		a) 0,25 kW	sum	1		
		b) 0,37 kW	sum	1		
		c) 0,55 kW	sum	1		
		d) 0,75 kW	sum	1		
		e) 1,1 kW	sum	1		
		f) 1,5 kW	sum	1		
		g) 2,2 kW	sum	1		
4.8.2		Single phase, Multi stage Pump & Motor				
		a) 0,25 kW	sum	1		
		b) 0,37 kW	sum	1		
		c) 0,55 kW	sum	1		
		d) 0,75 kW	sum	1		
		e) 1,1 kW	sum	1		
Total Carried Forward						

SCHEDULE D : PUMPS (continue)

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
		f) 1,5 kW	sum	1		
		g) 2,2 kW	sum	1		
4.8.3		Three phase, Single stage Pump & Motor				
		a) 0,25 kW	sum	1		
		b) 0,37 kW	sum	1		
		c) 0,55 kW	sum	1		
		d) 0,75 kW	sum	1		
		e) 1,1 kW	sum	1		
		f) 1,5 kW	sum	1		
		g) 2,2 kW	sum	1		
4.8.4		Three phase, Multi stage Pump & Motor				
		a) 1,5 kW	sum	1		
		b) 2,2 kW	sum	1		
		c) 3 kW	sum	1		
		d) 3,7 kW	sum	1		
		e) 4 kW	sum	1		
		f) 5,5 kW	sum	1		
		g) 7,5 kW	sum	1		
TOTAL SCHEDULE D CARRIED FORWARD TO SUMMARY						

SCHEDULE E : ELECTRICAL

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
5.1		**ELECTRICAL - GENERAL**				
5.1.1		Test the complete elctrical works and issue a Certificate of Complliance (CoC) by an applicable certified and registered electrical person.	sum	1		
5.1.2		Electrical Connection Fee (Provisional Sum)	Sum	1	50 000	R 50 000,00
5.1.3		Handling Cost and profit in respect of Item 5.1.2	%	50000		
5.1.4		Earth Spike (Include Conductor Termination Clamp)	sum	1		
5.2		**ELECTRICAL - TRENCHING & EARTHWORKS** Trenching (450mm width by 1500mm depth for LV Cables)				
5.2.1		Hand pickable soil (soft soil)	m^3	1		
5.2.2		Machine excavation (soft rock)	m^3	1		
5.2.3		Hard rock (Hydraulic Breakers, Blasting)	m^3	1		
5.2.4		Back-filling and compaction to 90% Mod AASHTO	m^3	1		
5.2.5		Sifting of local soil for bedding of the cables	m^3	1		
5.2.6		Import soil for bedding of cables	m^3	1		
5.3		**Electrical Motor Control and Starters** Supply, deliver,install and test a complete DB Board in a lockable IP55 powder coated mild steel enclosure (or similar approved by Engineer) for a submersible pump and motor set with all applicable switch gear and starters with protections for Dry run, Pump stall, Overload, Under voltage, Over voltage, Phase failure, Phase rotation and short circuit. Inclusive of all wiring, terminations and glands.				
5.3.1		Single Phase Direct on Line				
		a) 0,25 kW	sum	1		
		b) 0,37 kW	sum	1		
		c) 0,55 kW	sum	1		
		d) 0,75 kW	sum	1		
		e) 1,1 kW	sum	1		
		f) 1,5 kW	sum	1		
Total Carried Forward						

SCHEDULE E : ELECTRICAL (continue)

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
		g) 2,2 kW	sum	1		
5.3.2		Three Pphase Direct on Line				
		a) 0,25 kW	sum	1		
		b) 0,37 kW	sum	1		
		c) 0,55 kW	sum	1		
		d) 0,75 kW	sum	1		
		e) 1,1 kW	sum	1		
		f) 1,5 kW	sum	1		
		g) 2,2 kW	sum	1		
5.3.3		Star Delta Starter (Complete with relays & timers)				
		a) 3 kW	sum	1		
		b) 3,7 kW	sum	1		
		c) 4 kW	sum	1		
		d) 5,5 kW	sum	1		
		e) 7,5 kW	sum	1		
5.3.4		Soft Starter				
		a) 1,5 kW	sum	1		
		b) 2,2 kW	sum	1		
		c) 3 kW	sum	1		
		d) 3,7 kW	sum	1		
		e) 4 kW	sum	1		
		f) 5,5 kW	sum	1		
		g) 7,5 kW	sum	1		
5.3.5		Variable Speed Drives (VSDs)				
		a) 1,5 kW	sum	1		
		b) 2,2 kW	sum	1		
Total Carried Forward						

SCHEDULE E : ELECTRICAL (continue)

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
		c) 3 kW	sum	1		
		d) 3,7 kW	sum	1		
		e) 4 kW	sum	1		
		f) 5,5 kW	sum	1		
		g) 7,5 kW	sum	1		
5.3.6		Solar-Powered Variable Speed Drives (VSDs)				
		a) 1,5 kW	sum	1		
		b) 2,2 kW	sum	1		
		c) 3 kW	sum	1		
		d) 3,7 kW	sum	1		
		e) 4 kW	sum	1		
		f) 5,5 kW	sum	1		
		g) 7,5 kW	sum	1		
5.4		**Electrical Cables**				
		Two Core Cable Supply, deliver,install and test two core SABS approved copper cables. Inclusive of all terminations and glands.				
5.4.1		Two Core Armoured copper cable (SANS 1507)				
		a) 1.5 mm^2	m	1		
		b) 2.5 mm^2	m	1		
		c) 4 mm^2	m	1		
		d) 6 mm^2	m	1		
		e) 10 mm^2	m	1		
		f) 16 mm^2	m	1		
		g) 25 mm^2	m	1		
Total Carried Forward						

SCHEDULE E : ELECTRICAL (continue)

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
		h) 35 mm^2	m	1		
		I) 50 mm^2	m	1		
5.4.2		Two Core Armoured copper cable with Earth continuity Conducter in the armour. (SANS 1507)				
		a) 1.5 mm^2	m	1		
		b) 2.5 mm^2	m	1		
		c) 4 mm^2	m	1		
		d) 6 mm^2	m	1		
		e) 10 mm^2	m	1		
		f) 16 mm^2	m	1		
		g) 25 mm^2	m	1		
		h) 35 mm^2	m	1		
		I) 50 mm^2	m	1		
		Supply, deliver,install and test three core SABS approved copper cables. Inclusive of all terminations and glands.				
5.4.3		Three Core Submersible pump cable (SANS 1574)				
		a) 1.5 mm^2	m	1		
		b) 2.5 mm^2	m	1		
		c) 4 mm^2	m	1		
		d) 6 mm^2	m	1		
		e) 10 mm^2	m	1		
		f) 16 mm^2	m	1		
		g) 25 mm^2	m	1		
		h) 35 mm^2	m	1		
Total Carried Forward						

SCHEDULE E : ELECTRICAL (continue)

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
		l) 50 mm^2	m	1		
5.4.4		Three Core Armoured copper cable (SANS 1507)				
		a) 1.5 mm^2	m	1		
		b) 2.5 mm^2	m	1		
		c) 4 mm^2	m	1		
		d) 6 mm^2	m	1		
		e) 10 mm^2	m	1		
		f) 16 mm^2	m	1		
		g) 25 mm^2	m	1		
		h) 35 mm^2	m	1		
		l) 50 mm^2	m	1		
5.4.5		Three Core Armoured copper cable with Earth continuity Conducter in the armour. (SANS 1507)				
		a) 1.5 mm^2	m	1		
		b) 2.5 mm^2	m	1		
		c) 4 mm^2	m	1		
		d) 6 mm^2	m	1		
		e) 10 mm^2	m	1		
		f) 16 mm^2	m	1		
		g) 25 mm^2	m	1		
		h) 35 mm^2	m	1		
		l) 50 mm^2	m	1		
Total Carried Forward						

SCHEDULE E : ELECTRICAL (continue)

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
		Four Core Cable Supply, deliver,install and test four core SABS approved copper cables. Inclusive of all terminations and glands.				
5.4.6		Four Core Submersible pump cable (SANS 1574)				
		a) 1.5 mm^2	m	1		
		b) 2.5 mm^2	m	1		
		c) 4 mm^2	m	1		
		d) 6 mm^2	m	1		
		e) 10 mm^2	m	1		
		f) 16 mm^2	m	1		
		g) 25 mm^2	m	1		
		h) 35 mm^2	m	1		
		I) 50 mm^2	m	1		
5.4.7		Four Core Armoured copper cable (SANS 1507)				
		a) 1.5 mm^2	m	1		
		b) 2.5 mm^2	m	1		
		c) 4 mm^2	m	1		
		d) 6 mm^2	m	1		
		e) 10 mm^2	m	1		
		f) 16 mm^2	m	1		
		g) 25 mm^2	m	1		
		h) 35 mm^2	m	1		
		I) 50 mm^2	m	1		
Total Carried Forward						

SCHEDULE E : ELECTRICAL (continue)

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
5.4.8		Four Core Armoured copper cable with Earth continuity Conducter in the armour. (SANS 1507)				
		a) 1.5 mm^2	m	1		
		b) 2.5 mm^2	m	1		
		c) 4 mm^2	m	1		
		d) 6 mm^2	m	1		
		e) 10 mm^2	m	1		
		f) 16 mm^2	m	1		
		g) 25 mm^2	m	1		
		h) 35 mm^2	m	1		
		I) 50 mm^2	m	1		
		Supply, deliver,install and test SABS approved copper cables. Inclusive of all terminations and glands.				
5.4.9		Bare copper Earth wire (SANS 1411)				
		a) 1.5 mm^2	m	1		
		b) 2.5 mm^2	m	1		
		c) 4 mm^2	m	1		
		d) 6 mm^2	m	1		
		e) 10 mm^2	m	1		
		f) 16 mm^2	m	1		
		g) 25 mm^2	m	1		
		h) 35 mm^2	m	1		
		I) 50 mm^2	m	1		
Total Carried Forward						

SCHEDULE E : ELECTRICAL (continue)

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
5.4.10		Flexible single core cable for photovoltaic or solar systems, Halogen free, double insulated, Ozone & UV resistant (AC 1000V & DC 1500V) (Black/Red)				
		a) 1.5 mm^2	m	1		
		b) 2.5 mm^2	m	1		
		c) 4 mm^2	m	1		
		d) 6 mm^2	m	1		
		e) 10 mm^2	m	1		
		f) 16 mm^2	m	1		
		g) 25 mm^2	m	1		
		h) 35 mm^2	m	1		
		I) 50 mm^2	m	1		
5.5		**Solar Panels (PV)** Supply, deliver, install, and test monocrystalline solar panels complete with all cables, connectors, boxes, surge protectors and Circuit breakers. (Ground, Roof, Elevated or floating installation)				
		a) 300 to 395 W	no	1		
		b) 400 to 450 W	no	1		
		c) 455 to 495 W	no	1		
		d) 500 to 550 W	no	1		
		e) 555 - 595 W	no	1		
		f) 600 to 650 W	no	1		
5.6		**Solar (PV) Mounting Systems** Supply, deliver, install a complete Solar (PV) system including all rails, brackets, fasteners, and steel support structure. (Galvanised or Aluminium)				
5.6.1		**Roof Top mounting system for PV Solar panels.**				
		a) One (1) PV solar panel.	Sum	1		
Total Carried Forward						

SCHEDULE E : ELECTRICAL (continue)

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
		b) Set of two (2) PV solar panels.	Sum	1		
		c) Set of three (3) PV solar panels.	Sum	1		
		d) Set of four (4) PV solar panels.	Sum	1		
5.6.2		**Ground mounting structure for PV Solar panels.**				
		a) One (1) PV solar panel.	Sum	1		
		b) Set of two (2) PV solar panels.	Sum	1		
		c) Set of three (3) PV solar panels.	Sum	1		
		d) Set of four (4) PV solar panels.	Sum	1		
5.6.3		**Mounting structure on top of water tank and tank stand for PV Solar panels.**				
		a) One (1) PV solar panel.	Sum	1		
		b) Set of two (2) PV solar panels.	Sum	1		
		c) Set of three (3) PV solar panels.	Sum	1		
		d) Set of four (4) PV solar panels.	Sum	1		
5.6.4		**Single Pole mounting structure for PV panels.**				
		a) One (1) PV solar panel.	Sum	1		
		b) Set of two (2) PV solar panels.	Sum	1		
		c) Set of three (3) PV solar panels.	Sum	1		
		d) Set of four (4) PV solar panels.	Sum	1		
5.6.5		**Floating HDPE platform for PV panels. (Tilted)**				
		a) Float for one (1) PV solar panel.	Sum	1		
		b) Float for set of two (2) PV solar panels.	Sum	1		
		c) Float for set of three (3) PV solar panels.	Sum	1		
		d) Float for set of four (4) PV solar panels.	Sum	1		
Total Carried Forward						

SCHEDULE E : ELECTRICAL (continue)

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
5.7		**FUEL GENERATORS** Supply, deliver, install, test, and commission diesel generators with electrict start, automatic voltage regulator, and automatic transfer switch.				
		a) 5kVA	Sum	1		
		b) 8kVA	Sum	1		
		c) 15kVA	Sum	1		
		d) 25kVA	Sum	1		
5.8		**SOLAR DB BOARD** Supply, deliver, install, and test complete solar DB Board				
		a) Complete combiner box, MCE CB1-1 32 A, 1000 VDC, Input Strings 1, Output Strings 1	Sum	1		
		b) Complete combiner box, MCE CB2-1 32 A, 1000 VDC, Input Strings 2, Output Strings 1	Sum	1		
		c) Complete combiner box, MCE CB2-2 32 A, 1000 VDC, Input Strings 2, Output Strings 2	Sum	1		
		d) Complete combiner box, MCE CB4-1 32 A, 1000 VDC, Input Strings 4, Output Strings 1	Sum	1		
		e) Complete combiner box, MCE CB4-2 32 A, 1000 VDC, Input Strings 4, Output Strings 2	Sum	1		
TOTAL SCHEDULE E CARRIED FORWARD TO SUMMARY						

SCHEDULE F : PIPES AND FITTINGS

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
6	**SANS**	**PIPES AND FITTINGS**				
	1200C	**Clearing and Grubbing**				
6.1	8.2.1	Clear and grub 1m wide	m	1		
	1200DB	**PIPE TRENCHES**				
6.2	8.3.2a)	Excavate, backfill and compact to 90% MOD AASHTO in all materials for pipe trenches with a nominal diameter up to 100mm. *Note: No extra payment shall be rendered for intermediate material.*				
		a) Up to 1m deep (Depth 300mm above pipe)	m³	1		
6.3	8.3.2b)	Extra-over item for 6.2				
		a) Hard rock excavation (Prov.)	m³	1		
		MEDIUM PRESSURE PIPELINES (Primary water supply BH to water tanks / troughs)				
6.4		**HDPe PIPES AND FITTINGS**				
	8.2.1	Supply, lay, bed and test the following HDPe type IV pipes (conforming to SABS 533-Part 2 : 1982 amended 1994), in the following diameters and class.				
6.4.1		**CLASS 6**				
		a) 20mm dia Class 6	m	1		
		b) 25mm dia Class 6	m	1		
		c) 32mm dia Class 6	m	1		
		d) 40mm dia Class 6	m	1		
		e) 50mm dia Class 6	m	1		
		f) 63mm dia Class 6	m	1		
		g) 75mm dia Class 6	m	1		
		h) 90mm dia Class 6	m	1		
6.4.2		**CLASS 10**				
		a) 20mm dia Class 10	m	1		
		b) 25mm dia Class 10	m	1		
		c) 32mm dia Class 10	m	1		
		d) 40mm dia Class 10	m	1		
Total Carried Forward						

SCHEDULE F : PIPES AND FITTINGS

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
		e) 50mm dia Class 10	m	1		
		f) 63mm dia Class 10	m	1		
		g) 75mm dia Class 10	m	1		
		h) 90mm dia Class 10	m	1		
6.4.3		**CLASS 12**				
		a) 20mm dia Class 12	m	1		
		b) 25mm dia Class 12	m	1		
		c) 32mm dia Class 12	m	1		
		d) 40mm dia Class 12	m	1		
		e) 50mm dia Class 12	m	1		
		f) 63mm dia Class 12	m	1		
		g) 75mm dia Class 12	m	1		
		h) 90mm dia Class 12	m	1		
6.4.4		**CLASS 16**				
		a) 20mm dia Class 16	m	1		
		b) 25mm dia Class 16	m	1		
		c) 32mm dia Class 16	m	1		
		d) 40mm dia Class 16	m	1		
		e) 50mm dia Class 16	m	1		
		f) 63mm dia Class 16	m	1		
		g) 75mm dia Class 16	m	1		
		h) 90mm dia Class 16	m	1		
6.5	8.2.2	Extra-over item 6.4 for supply, laying and bedding of compression fittings for use with HDPe Type IV pipes.				
6.5.1		**Coupling (Compression)**				
		a) 20mm	no	1		
Total Carried Forward						

SCHEDULE F : PIPES AND FITTINGS

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
		b) 25mm	no	1		
		c) 32mm	no	1		
		d) 40mm	no	1		
		e) 50mm	no	1		
		f) 63mm	no	1		
		g) 75mm	no	1		
		h) 90mm	no	1		
6.5.2		**Equal Tee (Compression)**				
		a) 20mm	no	1		
		b) 25mm	no	1		
		c) 32mm	no	1		
		d) 40mm	no	1		
		e) 50mm	no	1		
		f) 63mm	no	1		
		g) 75mm	no	1		
		h) 90mm	no	1		
6.5.3		**Elbow (Compression)**				
		a) 20mm	no	1		
		b) 25mm	no	1		
		c) 32mm	no	1		
		d) 40mm	no	1		
		e) 50mm	no	1		
		f) 63mm	no	1		
		g) 75mm	no	1		
		h) 90mm	no	1		
Total Carried Forward						

SCHEDULE F : PIPES AND FITTINGS

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
6.5.4		**Male Adaptor**				
		a) 20mm x 15mm	no	1		
		b) 20mm x 20mm	no	1		
		c) 20mm x 25mm	no	1		
		d) 25mm x 15mm	no	1		
		e) 25mm x 20mm	no	1		
		f) 25mm x 25mm	no	1		
		g) 32mm x 15mm	no	1		
		h) 32mm x 20mm	no	1		
		i) 32mm x 25mm	no	1		
		j) 32mm x 32mm	no	1		
		k) 40mm x 25mm	no	1		
		l) 40mm x 32mm	no	1		
		m) 40mm x 40mm	no	1		
		n) 40mm x 50mm	no	1		
		o) 50mm x 25mm	no	1		
		p) 50mm x 32mm	no	1		
		q) 50mm x 40mm	no	1		
		r) 50mm x 50mm	no	1		
		s) 63mm x 40mm	no	1		
		t) 63mm x 50mm	no	1		
		u) 63mm x 65mm	no	1		
		v) 75mm x 50mm	no	1		
		w) 75mm x 65mm	no	1		
		x) 75mm x 80mm	no	1		
Total Carried Forward						

SCHEDULE F : PIPES AND FITTINGS

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
		y) 90mm x 50mm	no	1		
		z) 90mm x 65mm	no	1		
		aa) 90mm x 80mm	no	1		
6.5.5		**Female Adaptor**				
		a) 20mm x 15mm	no	1		
		b) 20mm x 20mm	no	1		
		c) 20mm x 25mm	no	1		
		d) 25mm x 15mm	no	1		
		e) 25mm x 20mm	no	1		
		f) 25mm x 25mm	no	1		
		g) 32mm x 15mm	no	1		
		h) 32mm x 20mm	no	1		
		i) 32mm x 25mm	no	1		
		j) 32mm x 32mm	no	1		
		k) 40mm x 25mm	no	1		
		l) 40mm x 32mm	no	1		
		m) 40mm x 40mm	no	1		
		n) 50mm x 32mm	no	1		
		o) 50mm x 40mm	no	1		
		p) 50mm x 50mm	no	1		
		q) 63mm x 50mm	no	1		
		r) 63mm x 65mm	no	1		
		s) 75mm x 50mm	no	1		
		t) 75mm x 65mm	no	1		
		u) 75mm x 80mm	no	1		
Total Carried Forward						

SCHEDULE F : PIPES AND FITTINGS

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
		v) 90mm x 65mm	no	1		
		w) 90mm x 80mm	no	1		
6.5.6		**Single Union Ball Valve (Compression)**				
		a) 20mm	no	1		
		b) 25mm	no	1		
		c) 32mm	no	1		
		d) 40mm	no	1		
		e) 50mm	no	1		
		f) 63mm	no	1		
6.5.7		**Other Compression Fittings**				
		Extra-over item 6.4 for supply, laying and bedding of compression fittings for use with HDPe Type IV pipes, not priced in the above Items. Mark up on other compression fitting as specified by the Engineer (3 Quotations from reputable suppliers)	PC Sum	1	1 000	R1 000,00
		Mark up on other compression fitting	%	1 000		
6.6		**Flexible borehole pipe**				
		Supply, deliver and install flexible borehole pipe, complete with all applicable fittings to connect to the pump and motor set and base plate up to 100 meter deep installation.				
		a) 50 mm inside diameter	Sum	1		
		b) 64 mm inside diameter	Sum	1		
		c) 76 mm inside diameter	Sum	1		
6.7		**STEEL PIPES AND FITTINGS (Primary water supply)**				
		Supply, deliver,install and test the following steel pipes, fittings and specials complete. (Conforming to SABS 719, SABS 62-1989 and BS534.) (All steel pipes and fittings to galvanized according to SABS 1461 and SABS ISO 14713.)				
6.7.1		**Barrel Nipple Galvanised**				
		a) 25 mm	no	1		
Total Carried Forward						

SCHEDULE F : PIPES AND FITTINGS

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
		b) 32 mm	no	1		
		c) 40 mm	no	1		
		d) 50 mm	no	1		
		e) 65 mm	no	1		
		f) 80 mm	no	1		
		g) 100 mm	no	1		
6.7.2		**Nipple Galvanised Hexagonal**				
		a) 25 mm	no	1		
		b) 32 mm	no	1		
		c) 40 mm	no	1		
		d) 50 mm	no	1		
		e) 65 mm	no	1		
		f) 80 mm	no	1		
		g) 100 mm	no	1		
6.7.3		**Elbow Galvanised Female/Female 90°**				
		a) 25 mm	no	1		
		b) 32 mm	no	1		
		c) 40 mm	no	1		
		d) 50 mm	no	1		
		e) 65 mm	no	1		
		f) 80 mm	no	1		
		g) 100 mm	no	1		
6.7.4		**Elbow Galvanised Male/Female 90°**				
		a) 25 mm	no	1		
		b) 32 mm	no	1		
		c) 40 mm	no	1		
Total Carried Forward						

SCHEDULE F : PIPES AND FITTINGS

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
		d) 50 mm	no	1		
		e) 65 mm	no	1		
		f) 80 mm	no	1		
		g) 100 mm	no	1		
6.7.5		**Coupling galvanised swage**				
		a) 25 mm	no	1		
		b) 32 mm	no	1		
		c) 40 mm	no	1		
		d) 50 mm	no	1		
		e) 65 mm	no	1		
		f) 80 mm	no	1		
		g) 100 mm	no	1		
6.7.6		**Union galvanised conical**				
		a) 25 mm	no	1		
		b) 32 mm	no	1		
		c) 40 mm	no	1		
		d) 50 mm	no	1		
		e) 65 mm	no	1		
		f) 80 mm	no	1		
		g) 100 mm	no	1		
		Nippel Galvanised Long screw				
		a) 25 mm	no	1		
		b) 32 mm	no	1		
		c) 40 mm	no	1		
		d) 50 mm	no	1		
		e) 65 mm	no	1		
Total Carried Forward						

SCHEDULE F : PIPES AND FITTINGS

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
		f) 80 mm	no	1		
		g) 100 mm	no	1		
6.7.7		**Adaptor galvanised swage**				
		a) 25 mm	no	1		
		b) 32 mm	no	1		
		c) 40 mm	no	1		
		d) 50 mm	no	1		
		e) 65 mm	no	1		
		f) 80 mm	no	1		
		g) 100 mm	no	1		
6.7.8		**Socket Galvanised**				
		a) 25 mm	no	1		
		b) 32 mm	no	1		
		c) 40 mm	no	1		
		d) 50 mm	no	1		
		e) 65 mm	no	1		
		f) 80 mm	no	1		
		g) 100 mm	no	1		
6.7.9		**Equal Tee Galvanised**				
		a) 25 mm	no	1		
		b) 32 mm	no	1		
		c) 40 mm	no	1		
		d) 50 mm	no	1		
		e) 65 mm	no	1		
		f) 80 mm	no	1		
		g) 100 mm	no	1		
Total Carried Forward						

SCHEDULE F : PIPES AND FITTINGS

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
6.7.10		**Galvanised Steel Pipe**				
		a) 25 mm	m	1		
		b) 32 mm	m	1		
		c) 40 mm	m	1		
		d) 50 mm	m	1		
		e) 65 mm	m	1		
		f) 80 mm	m	1		
		g) 100 mm	m	1		
6.7.11		**Base plates epoxy coated (split type)**				
		a) 32 mm	no	1		
		b) 40 mm	no	1		
		c) 50 mm	no	1		
		d) 65 mm	no	1		
		e) 80 mm	no	1		
6.7.12		**Base plates galvanised**				
		a) 32 mm	no	1		
		b) 40 mm	no	1		
		c) 50 mm	no	1		
		d) 65 mm	no	1		
		e) 80 mm	no	1		
6.7.13		**Other Galvanised Steel Pipes and Fittings**				
		Other Galvanised Steel Pipes and Fittings not priced in the above Items. Mark up on other pipes & fitting as specified by the Engineer (3 Quotations from reputable suppliers)	PC Sum	1	1 000	R1 000,00
		Mark up on other fitting	%	1 000		
TOTAL SCHEDULE F CARRIED FORWARD TO SUMMARY						

SCHEDULE G : ANCILLARY WORKS

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
7	**SANS**	**ANCILLARY WORKS**				
7.1		**Prefabricated Reservoirs**				
		Prefabricated Galvanized steel water reservoir complete with roof, 1x inlet including galvanized steel inlet pipe and fittings, outlet including valve, overflow, manhole, concrete ring beam or slab with Engineers Certificate were applicable and PVC lining in the following size categories:				
		a) 5 000 to 7 000 Litres capacity	Sum	1		
		b) 9 000 to 10 000 Litres capacity	Sum	1		
		c) 13 000 to 15 000 Litres capacity	Sum	1		
		d) 19 000 to 20 000 Litres capacity	Sum	1		
		e) 25 000 to 30 000 Litres capacity	Sum	1		
		f) 35 000 to 40 000 Litres capacity	Sum	1		
		g) 45 000 to 50 000 Litres capacity	Sum	1		
7.2		**Steel Tank Stand**				
7.2.1		Supply and erect a prefabricated complete elevated steel tank stand (painted) with Engineers Certificate suitable for a 10 000 storage tank:				
		a) 3 meter high for 10 000 litres	Sum	1		
		b) 6 meter high for 10 000 litres	Sum	1		
		c) 9 meter high for 10 000 litres	Sum	1		
7.2.2		Supply and erect a prefabricated complete elevated steel tank stand (painted) with Engineers Certificate suitable for a 5 000 storage tank:				
		a) 3 meter high for 5 000 litres	Sum	1		
		b) 6 meter high for 5 000 litres	Sum	1		
		c) 9 meter high for 5 000 litres	Sum	1		
7.2.3	**1200G**	**Concrete**				
		Casting of concrete footings, inclusive of excavations (1m x 1m x 1m per footing)				
	8.4.3	a) Class 25/19 concrete	m^3	1		
Total Carried Forward						

SCHEDULE G : ANCILLARY WORKS (continue)

Item Nr.	Payment Refer.	Description	Unit	Qty	Rate	Amount
		Brought Forward				
7.3		**Polyethylene Water Tank**				
7.3.1		Supply, erect and anchored elevated polyethylene water tank onto tank stand (3,6 & 9m high):				
		a) 10 000 litre tank	sum	1		
		b) 5 000 litre tank	sum	1		
7.3.2		Supply and Install a 40mm float valve at the inlet of the tank	no	1		
7.3.3		Supply install and test all the pipe work and fittings for an elevated tank installation and connect to a water supply (10 000 or 5 000 litre tank)	sum	1		
7.4		**Drinking Troughs**				
7.4.1		Supply install and test **polyethylene** drinking trough complete with float valve, isolate valve, and connected to a water supply.				
		a) 200 to 290 litre trough	sum	1		
		b) 300 to 790 litre trough	sum	1		
		c) 800 to 1 490 litre trough	sum	1		
		d) 1 500 to 2 000 litre trough	sum	1		
		e) More than 2 000 litre trough	sum	1		
7.4.2		Supply install and test **pre-cast concrete** drinking trough complete with float valve, isolate valve, and connected to a water supply.				
		a) 50 to 250 litre trough	sum	1		
		b) 260 to 800 litre trough	sum	1		
		c) More than 1 000 litre trough	sum	1		
7.5		**Other Relevant Equipment**				
		Other relevant equipment not priced in the above Items. Mark up on equipment as specified by the Engineer (3 Quotations from reputable suppliers)	PC Sum	1	50 000	R50 000,00
		Mark up on other relevant equipment	%	50 000		
TOTAL SCHEDULE G CARRIED FORWARD TO SUMMARY						

LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

A 3-Year Framework Agreement for the Drilling, Testing and Equipping of Boreholes

SUMMARY OF SCHEDULE OF QUANTITIES AND CALCULATION OF CONTRACT AMOUNT

SCHEDULE	DESCRIPTION	AMOUNT
SCHEDULE A	PRELIMINARY AND GENERAL ITEMS	
SCHEDULE B	DRILLING OF BOREHOLES	
SCHEDULE C	TESTING OF BOREHOLES	
SCHEDULE D	PUMPS	
SCHEDULE E	ELECTRICAL	
SCHEDULE F	PIPES AND FITTINGS	
SCHEDULE G	ANCILLARY WORKS	
TOTAL SCHEDULE OF QUANTITIES		
ADD 10% CONTINGENCIES		
SUB TOTAL		
ADD 15% VAT		
TOTAL TENDER AMOUNT		

PART C3: SCOPE OF WORK

C3.1: STANDARD SPECIFICATIONS

C3.2: PROJECT SPECIFICATIONS

C3.3: PARTICULAR SPECIFICATIONS

LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

A 3-YEAR FRAMEWORK AGREEMENT FOR DRILLING, TESTING AND EQUIPPING OF BOREHOLES, FOR THE LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

C3: SCOPE OF WORK

C3.1 STANDARD SPECIFICATIONS

C3.2 PROJECT SPECIFICATIONS

PART A: GENERAL

PS-1 Project Description
PS-2 Description of the Site and Access
PS-3 Details of the Works
PS-4 Construction Programme
PS-5 Site Facilities Available
PS-6 Facilities Required on Site
PS-7 Management and Disposal of Water
PS-8 Rainfall Figures
PS-9 Security Clearance of Personnel
PS-10 Health and Safety
PS-11 Subcontractors
PS-12 Delay in Completion
PS-13 Supply of Materials
PS-14 Execution of Works
PS-15 Existing Services
PS-16 Labour Intensive Specification

PART B: AMENDMENTS TO THE STANDARD SPECIFICATIONS

C3.3 PARTICULAR SPECIFICATIONS

In addition to the Standardised and Project Specifications the following Particular Specifications shall apply to this contract and are bound in hereafter.

PART C : (Not applicable for this tender)

PART D : (Not applicable for this tender)

PART E : ENVIRONMENTAL MANAGEMENT

PART F : OHSA 1993 HEALTH AND SAFETY

PART G : (Not applicable for this tender)

PART H : DRILLING OF BOREHOLES

PART J : TEST PUMPING OF BOREHOLES

LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

A 3-YEAR FRAMEWORK AGREEMENT FOR DRILLING, TESTING AND EQUIPPING OF BOREHOLES, FOR THE LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

C3.1 STANDARD SPECIFICATIONS

The standard specifications on which this contract is based are the SANS Standardised Specifications for Civil Engineering Works.

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

SABS 1200 AA	:	General (Small Works)
SABS 1200 C	:	Site Clearance
SABS 1200 GA	:	Concrete (Small Works)
SABS 1200 GB	:	Concrete (Ordinary Buildings)

A bidder should get his own copies of the above documentation.

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

SANS 10396: 2003	:	Implementing Preferential Construction Procurement Policies using Targeted Procurement Procedures
SANS 1914-1to 6 (2002):		Targeted Construction Procurement
SANS 1921 – 1 (2004):		Construction and Management Requirements for Works Contracts Part 1: General Engineering and Construction Works

LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

A 3-YEAR FRAMEWORK AGREEMENT FOR DRILLING, TESTING AND EQUIPPING OF BOREHOLES, FOR THE LIMPOPO DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

C3.2: PROJECT SPECIFICATIONS

STATUS

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

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

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

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

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.

PART A: GENERAL

PS 1 PROJECT DESCRIPTION

The Project description will be issued during the stage with the request to give quotations for a specific project. The project may consist of some or all of the following activities:

1. Geohydrological survey, monitoring, and reporting (under instruction/inclusion on Contract BOQ if required)
2. Drilling of new boreholes
3. Pump testing of new and existing boreholes (Incl. Chemical analysis)
4. Rehabilitation of existing boreholes
5. Development of production boreholes
6. Equipping of boreholes and ancillary works, limited to livestock watering, domestic use and food security or household projects.

PS 2 DESCRIPTIONS OF THE SITE AND ACCESS

2.1 Location of site

The Location of the site within the borders of Limpopo Province will be issued during the stage with the request to give quotations for a specific project.

2.2 Access to site

Details of access to the site will be issued during the stage with the request to give quotations for a specific project. The access to sites will differ from easy access to very difficult that requires 4 x 4 vehicles and 6 x 6 drilling rigs.

PS 3 DETAILS OF THE WORKS

3.1 Brief description of works

A brief detail of the works for which this specification is applicable will be issued during the stage with the request to give quotations for a specific project.

3.2 Project Approach

The successful Bidder will be responsible for the full spectrum of supply, delivery, setting out, construction, quality control and defects attendance services. The Employer will appoint an Engineer (Internal or a Consultant) to monitor construction progress and quality. Regular progress payments, based on work actually performed at the Tendered rates, are envisaged. A defects liability period of 12 months will be applicable on this project.

3.3 Labour recruitment conditions

A Project Steering Committee (PSC) will be established and is a vital means of communication between all parties involved with the project. The composition of the PSC comprises representation by the Employer, the Engineer and formal structures within the community.

The contractor shall make use of these communication channels, and shall appoint from amongst his site personnel a responsible person to participate in the affairs of the PSC, and this representative may be also required to attend the monthly PSC meetings.

It is mandatory that the Contractor shall interact with the community via proactive project liaison and project participation by its leaders and constituted organisations and forums, as well as through the employment of its people, and these activities shall constitute essential facets of the project.

Local labour is to be used and the employment of such labour is to be done in conjunction with the PSC.

PSC shall appoint a Community liaison officer (CLO). The duties of the CLO shall consist inter alias of the following:

- To be available on site daily between the hour of 07:00 and 17:00 and at other times as the need arises. His normal working day will extend from 07:00 in the morning until 17:00 in the afternoon.
- To communicate daily with regard to number and skills, to facilitate in labour disputes and to assist in their resolution.
- To attend all meetings in which the community and/or labour are present or are required to be represented.
- To attend all PSC meeting to report on labour.
- To assist in the identification and screening of labourers from the community in accordance with the contractor's requirements.
- To advise and inform temporary labourers of their conditions of employment and to inform temporary labourers as early as possible when their period of employment will be terminated.
- To attend disciplinary proceedings to ensure that hearings are fair and reasonable.
- To keep a daily written record of his interviews and community liaison, labour force etc.
- To attend monthly site meetings and report in writing on labour and contract matters.
- Keeping a data base of available labour.
- All such other duties as agreed upon between all parties concerned.
- Compile a list of available skills in the area (skills audit).

3.4 Construction in confined Areas

It may be necessary for the Contractor to work within confined areas. Except where provided for in the specifications, no additional payment shall be made for work done in restricted areas. In certain places excavation, construction and filling works will have to be performed in a small (± 1,0 m width) working space. The method of construction in these confined areas largely depends on the Contractor's constructional plant.

The Contractor shall note that, unless provided for in terms of the scheduled payment items of the project

specifications, measurement and payment shall be in accordance with the specified excavation, construction and filling works, irrespective of the method used for achieving these cross sections and dimensions, and that the tendered rates and amounts shall include full compensation for all special equipment and construction methods and for all difficulties encountered when working in confined areas and narrow widths, and at or around obstructions, and that no extra payment shall be made nor shall any claim for additional payment be considered in such cases.

PS 4 CONSTRUCTION PROGRAMME

PS 4.1 General

The submission of a construction programme as stated per Clause 5.6 of the General Conditions of Contract is compulsory.

- Before any work is to be commenced on the site (within a period as stated in Clause 5.6.1 of the General Conditions of Contract), the Contractor must submit a detailed project programme for the construction of the Works to the Engineer for his approval.

In preparation of the construction programme the Contractor must liaise with the Engineer and the programme must take into account the coordination of all activities. The programme must consist of a detailed schedule or block diagram covering all aspects of the Works and the planned time thereof must, with the Contract Period as time basis, be shown.

Rainfall conditions will be taken as abnormal when the average rainfall, as shown in Clause PS 8, is exceeded and the contractor must then apply in writing for extension of the contract period using Clause 10.1 of the Conditions of Contract.

The Contractor shall submit to the Engineer a realistic, detailed programme not later than 14 days after receipt of the Letter of Acceptance. The programme shall be in bar-chart format showing in detail how the Contractor proposes to complete the work covered by this contract by the Due Completion Date.

The following details must be stated:

i. The quantity of work applicable to each bar item as well as the rate at which the work will be completed.
ii. A budget of the value of completed work, month by month, for the full contract period.
iii. The Contractor's plant commitment on the contract for every fortnight.
iv. The critical path.

The programme shall be kept up to date. If a Contractor fails to maintain progress in terms of the programme, he shall produce a revised programme showing the modifications to the original programme necessary to ensure completion of the Works before the Due Completion Date.

The approval of any programme by the Engineer shall have no contractual significance, other than satisfying the Engineer that the Work is carried out according to such programme and that the Contractor undertakes to carry out the work in accordance with the programme. The Engineer will have the right to instruct the Contractor to revise the programme if necessitated by circumstances.

PS 4.2 Time for Completion

The maximum time allowed for the completion of the contract will be determined during the stage with the request to give quotations for a specific project (excluding special non-working days and the year-end break) from the Commencement Date.

PS 5 SITE FACILITIES AVAILABLE

PS 5.1 Water Supply

The Contractor must make his own arrangements for provision of fresh water on site for domestic and construction purposes.

The rates Tendered for the relevant items in the Preliminary and General Section of the schedule shall include all costs for the establishment and maintenance of water supply to the works and the Contractor shall

make his own arrangements for the possible conveyance and storage of water if necessary.

PS 5.2 Power Supply

The Contractor must make his own arrangements for the provision of his own electrical requirements on site.

The rates Tendered for the relevant items in the Preliminary and General Section of the schedule shall include all costs for the establishment and maintenance of a power supply to the works as required for construction purposes.

PS 5.3 Excrement Disposal

No water-borne sewage or other off-site excrement disposal systems are available in the vicinity of the Site. The Contractor must make his own arrangements for the provision of sewer / ablution facilities on site.

The rates tendered for the relevant items in the Preliminary and General Section of the schedule shall include all costs for the establishment and maintenance of ablution facilities at the works.

PS 6 FACILITIES REQUIRED ON SITE

PS 6.1 Facilities for the Engineer

No site office for the Engineer is required.

PS 6.2 Facilities for the Contractor

Site Establishment

The Contractor is responsible to provide a suitable site for his camp and to provide accommodation for his personnel and labourers. If the Employer can make any specific site available to the Contractor, such site will be pointed out to the Contractor.
The chosen site shall be subject to the approval of the Engineer and the Project Steering Committee (PSC). Possible locations for a campsite shall be pointed out at the Site inspection. The Contractor shall conform to all local authority, environmental and industrial regulations.

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

Ablution and Sanitary Facilities:

The Contractor shall erect and maintain on the site proper ablution facilities. The Contractor shall service and maintain the facilities in a clean and hygienic state for the duration of the contract period and on completion of the works remove it from the site.

PS 6.3 Laboratory Facilities

The contractor shall provide Laboratory facilities at an SABS accredited laboratory to conduct tests as required.

PS 6.4 Construction Notice Board (Name Board)

No Construction Notice Board is required for this contract.

PS 6.5 Housing for the Engineer and/or his Representative

No housing is required for the Engineer or his Representative.

PS 6.6 Telephone Facilities

Telephone and facsimile facilities are not needed on the site.

PS 7 MANAGEMENT AND DISPOSAL OF WATER

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

PS 8 RAINFALL FIGURES

The following figures are applicable for Clause 5.12.1 of the Special Conditions of Contract.
INFORMATION SOURCE: WRC Report 1994

(Relevant information will be issued during the stage with the request to give quotations for a specific project.)

Rainfall station:					
Rainfall station:					
Period:					
Month	**N_n**	**R_n**	**Month**	**N_n**	**R_n**
January February March April May June			July August September October November December		
Annual average:					

Nn = Average number of days on which a rainfall of 10 mm or more has been recorded.
Rn = Average monthly rainfall in mm

Extensions of time in respect of Clause 10.1 in the General Conditions of Contract for Construction Works (2010) 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 10mm 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.
X = 20mm

For purposes of the Contract Nn, Rn and Nn shall have those values assigned to them in the table above based on figures from the WRC report 1994.

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.

PS 9 SECURITY CLEARANCE OF PERSONNEL

Bidders to note that the Limpopo Department of Agriculture and Rural Development may require that Security Clearance investigations be conducted on any number of the Bidder's personnel.

If so required by the Limpopo Dept of Agriculture, the Bidder must remove personnel as indicated immediately and ensure that they have no access to the works or documentation or any other information pertaining the site.

The Employer shall not be liable for any cost concerning the removal of personnel or the effect thereof on the execution of the work.

PS 10 HEALTH AND SAFETY

PS 10.1 General statement

It is a requirement of this contract that the Contractor shall provide a safe and healthy working environment and to direct all his activities in such a manner that his employees and any other persons, who may be directly affected by his activities, are not exposed to hazards to their health and safety. To this end the Contractor shall assume full responsibility to conform to all the provisions of the Occupational Health and Safety Act (OHSA) No 85 and Amendment Act No 181 of 1993, and the OHSA 1993 Construction Regulations 2003 issued on 18 July 2003 by the Department of Labour.

For the purpose of this contract the Contractor is required to confirm his status as mandatory and employer in his own right for the execution of the contract by entering into an agreement with the Employer in terms of the Occupational Health and Safety Act in the form as included in section C1.5.

PS 10.2 Health and Safety Specifications and Plans

(a) Employer's Health and Safety Specification

The Employer's Health and Safety Specification is included in Section C3.3, Part E of the Bid documents as part of the Particular Specifications.

(b) Bidder's Health and Safety Plan

The Bidder shall submit with the Bid his own documented Health and Safety Plan he proposes to be implement for the execution of the work under the contract. The Health and Safety Plan must at least cover the following:

(i) a proper risk assessment of the works, risk items, work methods and procedures in terms of Regulations 7 to 28;
(ii) pro-active identification of potential hazards and unsafe working conditions;
(iii) provision of a safe working environment and equipment;

(iv) statements of methods to ensure the health and safety of subcontractors, employees and visitors to the site, including safety training in hazards and risk areas (*Regulation 5)*;
(v) monitoring health and safety on the site of works on a regular basis, and keeping of records and registers as provided for in the Construction Regulations;
(vi) details of the Construction Supervisor, the Construction Safety Officers and other competent persons he intends to appoint for the construction works in terms of Regulation 6 and other applicable regulations; and
(vii) details of methods to ensure that his Health and Safety Plan is carried out effectively in accordance with the Construction Regulations 2003.

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

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

PS 10.3 Cost of compliance with the OHSA Construction Regulations

The rates and prices Bidded by the Contractor shall be deemed to include all costs for conforming to the requirements of the Act, the Construction Regulations and the Employer's Health and Safety Specification as applicable to this contract.

Should the Contractor fail to comply with the provisions of the Construction Regulations, he will be liable for penalties as provided in the Construction Regulations and in the Employer's Health and Safety Specification.

PS 11 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.

The Employer shall have the right to cede any sub-contract under this contract to a pre-approved subcontractor, in accordance with the provisions of Clause 9 of the General Conditions of Contract.

PS 12 DELAY IN COMPLETION

The Contractor shall organise the Works in such a manner that no delays occur. Delay due to faulty organisation or lack or shortage of materials or labour or co-operation with other parties or to any other cause within the control of the Contractor will not be countenanced and full power is reserved by the Engineer to order the Contractor to expedite the work should the work, in the opinion of the Engineer, not progress in a satisfactory way.

PS 13 SUPPLY OF MATERIALS

All material to be used in the Works is to be supplied by the Contractor.

The Contractor shall ensure that the work is not delayed due to the lack of materials on Site, by placing

orders for material required under this Contract as soon as possible. No extension of time will be allowed for any delay due to the supply of materials.

Although the quantities have been carefully calculated, it must be considered as approximate only and the Contractor, before ordering any materials, should check the quantities required. The bill of quantities is provisional.

PS 14 EXECUTION OF THE WORKS

PS 14.1 Inspection by the Engineer

No portion of the work shall be proceeded with until the Engineer or his representative has examined and approved the previous stage. If any work is covered or hidden from view before the Engineer or his representative has inspected the work, the Contractor shall at his own cost expose the covered or hidden work for inspection. The Contractor shall also be responsible for making good any work damaged during the uncovering.

PS 15 EXISTING SERVICES

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

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

Two weeks prior to commencing construction activities in a particular area, the Contractor shall also diligently enquire of local landowners as to whether there are any other known services which have not been shown on the drawings but which may be affected by the construction activities in that area, and any such services shall be brought to the attention of the Engineer immediately. The contractor shall make provision in his programme for the location and/or shifting of services.

PS 16 LABOUR INTENSIVE SPECIFICATION

PS 16.1 Labour intensive competencies of supervisory and management staff

Contractors having a CIDB contractor grading designation of 3CE and higher shall only engage supervisory and management staff in labour intensive works who have either completed, or, are registered for training towards, the skills programme outlined in Table 1.

All site supervisory staff in the employ of the contractor must have completed, a skills programme for the NQF level 2 unit standards or NQF level 4 unit standards.

Table 1: Skills programme for supervisory and management staff

Personnel	NQF level	Unit standard titles	Skills programme description
Team leader / supervisor	2	Apply Labour Intensive Construction Systems and Techniques to Work Activities	This unit standard must be completed, **and**
		Use Labour Intensive Construction Methods to Construct and Maintain Roads and Storm water Drainage	any one of these 3 unit standards
		Use Labour Intensive Construction Methods to Construct and Maintain Water and Sanitation Services	
		Use Labour Intensive Construction Methods to Construct, Repair and Maintain Structures	
Foreman/ supervisor	4	Implement labour Intensive Construction Systems and Techniques	This unit standard must be completed, **and**

		Use Labour Intensive Construction Methods to Construct and Maintain Roads and Storm water Drainage	any one of these 3 unit standards
		Use Labour Intensive Construction Methods to Construct and Maintain Water and Sanitation Services	
		Use Labour Intensive Construction Methods to Construct, Repair and Maintain Structures	
Site Agent / Manager (i.e. the contractor's most senior representative that is resident on the site)	5	Manage Labour Intensive Construction Processes	Skills Programme against this single unit standard

PS 16.2 Employment of unskilled and semi-skilled workers in labour-intensive works

PS 16.2.1 Requirements for the sourcing and engagement of labour.

Unskilled and semi-skilled labour required for the execution of all labour intensive works shall be engaged strictly in accordance with prevailing legislation and SANS 1914-5, Participation of Targeted Labour.

The rate of pay set for a day task is 90% of the statutory daily wage applicable for the areas.

Tasks established by the contractor must be such that:

a) the average worker completes 5 tasks per week in 40 hours or less; and
b) the weakest worker completes 5 tasks per week in 55 hours or less.

The contractor must revise the time taken to complete a task whenever it is established that the time taken to complete a weekly task is not within the requirements of 5.2.1.3.

The Contractor shall, through all available community structures, inform the local community of the labour intensive works and the employment opportunities presented thereby. Preference must be given to people with previous practical experience in construction and / or who come from households:

a) where the head of the household has less than a primary school education;
b) that has less than one full time person earning an income;
c) where subsistence agriculture is the source of income.
d) those who are not in receipt of any social security pension income

The Contractor shall endeavour to ensure that the expenditure on the employment of temporary workers is in the following proportions:

a) 60 % women;
b) 20% youth who are between the ages of 18 and 25; and
c) 2% on persons with disabilities.

PS 16.2.2 Specific provisions pertaining to SANS 1914-5

Training of targeted labour

a) The contractor shall provide all the necessary on-the-job training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract in a manner that does not compromise worker health and safety.

b) The cost of the formal training of targeted labour will be funded by the provincial office of the Department of Labour. This training should take place as close to the project site as practically possible. The contractor, must access this training by informing the relevant provincial office of the Department of Labour in writing, within 14 days of being awarded the contract, of the likely number of persons that will undergo training and when such training is required. The employer must be furnished with a copy of this request.

c) The contractor shall be responsible for scheduling the training of workers and shall take all reasonable steps to ensure that each beneficiary is provided with a minimum of six (6) days of formal training if he/she is employed for 3 months or less and a minimum of ten (10) days if he she is employed for 4 months or

more.

d) The contractor shall do nothing to dissuade targeted labour from participating in training programmes.

e) An allowance equal to 100% of the task rate or daily rate shall be paid by the contractor to workers who attend formal training, in terms of (d) above.

f) Proof of compliance with the requirements of (b) to (e) must be provided by the Contractor to the Employer prior to submission of the final payment certificate.

PART B: AMENDMENTS TO THE STANDARD SPECIFICATIONS

B1 PROJECT SPECIFICATIONS RELATING TO THE STANDARD SPECIFICATIONS AND OTHER ADDITIONAL SPECIFICATIONS

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

VARIATIONS TO REQUIREMENTS OF SPECIFICATIONS LISTED IN C3.1

PSAA **SABS 1200 AA : GENERAL (SMALL WORKS)**

None

PSC **SABC 1200 C: SITE CLEARANCE**

None

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

PSGA 5.1.2: Welding

Welding of reinforcement is permitted.

PSGA 5.4.1.6 Ready mixed concrete

Use of ready-mixed concrete is permitted and the manufacturer's quality control system will be acceptable.

PSGA 5.4.7 Concrete Curing

Where suitable water for curing of the concrete is not readily available, the contractor is to allow for the use of an approved curing compound.

C3.3 PARTICULAR SPECIFICATIONS

C3.3 PARTICULAR SPECIFICATIONS

PART E: Environmental Management
PART F: OHSA 1993 Health & Safety
PART H: Drilling of Boreholes
PART J: Test Pumping of Boreholes

PART E: ENVIRONMENTAL MANAGEMENT SPECIFICATION

E.1 General

In order to ensure that the construction works is carried out in an environmentally sensitive matter, strict compliance to the Environmental Management Plan (EMP) guidelines is required. The purpose of the EMP is to:

- Encourage good management practices through planning and commitment to environmental issues,
- Provide rational and practical environmental guidelines to:
  - i. Minimise disturbance of the natural environment,
  - ii. Prevent pollution of land, air and water,
  - iii. Prevent soil erosion and facilitate re-vegetation.
- Adopt the best practicable means available to prevent or minimise adverse environmental impact,
- Develop waste management practices based on prevention, minimisation, recycling, treatment or disposal of wastes,
- Train employees and contractors with regard to environmental obligations.

E.2 Training and Induction of Employees

- The Contractor has a responsibility to ensure that all those people involved in the project are aware of and familiar with the environmental requirements for the project (this includes sub-contractors, casual labour, etc.). The EMP shall be part of the terms of reference for all contractors, sub-contractors and suppliers.

E.3 Complaints Register and Environmental Incident Book

Any complaints received by the project team from the public will be recorded. The complaint should be brought to the attention of the site manager, who will respond.

The following information must be recorded:

- Time, date and nature of the complaint,
- Type of communication (telephone, letter etc),
- Name, contact address and telephone number of the complainant,
- Response and investigation undertaken and
- Actions taken and by whom.

All complaints received will be investigated and a response give to the complainant within 14 days.

All environmental incidents occurring on the site will be recorded. The following information will be provided:

- Time, date, location and nature of the incident,
- Actions taken and by whom.

E.4 Site Cleanliness and Neatness

- Location of a construction camp is to be approved by the Engineer and is to be restored to its previous condition after completion of construction.
- The construction camp should preferably be fenced with a 1.8m bonnox fence or similar approved.
- All materials, equipment, plant and vehicles must be stored within the construction camp.
- A dedicated area must be made available for construction staff to change and store their personal belongings.

E.5 Access

- Access to existing roads, schools, buildings, shop and residential properties must not be impeded during construction.
- Access roads utilised by the Contractor must be maintained in good condition.

E.6 Borrow Pits

- Mining authorisations (permits) for borrow pits must be obtained from the Department of Minerals and Energy (DME) in consultation with the Department of Water Affairs and Forestry (DWAF).
- Spoil dumps resulting from borrow pits must not interfere with any natural surface drainage.
- Borrow pits must be rehabilitated after use in accordance with the requirements of DME and DWAF.

E.7 Dust Control / Air Quality

- Dust suppression measures must be implemented during construction by ensuring that all surfaces prone to dust generation are kept damp (e.g. use of water tanker).
- Ensure that vehicles and equipment are in good working conditions and that emissions are not excessive.
- Ensure that vehicles and equipment are in good working conditions and that emissions are not excessive.
- Special care must be taken in areas where the route passes close to schools and residential areas.
- The speed of construction vehicles must be reduced.

E.8 Fauna

- Contractor staff may not chase, catch or kill animals encountered during construction.

E.9 Fire Prevention and Control

- Smoking is prohibited in the vicinity of flammable substances.
- The contractor must ensure that fire-fighting equipment is available on site, particularly where flammable substances are being stored or used, and that construction staff are aware of where it is kept and how it is operated.
- Fires started for comfort (warmth) are prohibited, due to the risk of veld fires and risk to adjacent property owner's lands.

E.10 Grave sites

- Gravesites in close proximity to the road must not be disturbed during construction.

E.11 Materials Handling and Spills Management

- Any hazardous materials to be used during construction (e.g. lime, fuel, paint, etc) are to be stored in a designated area at the campsite.
- The storage containers/facilities (including any diesel/petrol tanks) must be placed on an impermeable surface and surrounded by a bund wall, in order to ensure that accidental spillage does not pollute the environment.
- Workers must at all times be made aware of the health and safety risks associated with any hazardous substances used (e.g. smoking near fuel tanks), and must be provided with appropriate protective clothing/equipment in case of spillages or accidents.
- Ensure all staff and contractors undergo relevant training in the maintenance of equipment to prevent the accidental discharge or spill of fuel, oil, lubricants and other chemicals.
- Any spill of potentially hazardous materials must be cleaned up immediately (Potentially

hazardous materials on site include paint, oil, grease, fuel, turpentine, etc).

- The area of contaminated soil or spill must be deposited into the hazardous waste container(s).
- The contractor should keep Peat Sorb or a similar absorbent on site to clean up any spills.
- The absorbent must be stored in a designated area and be available for inspection.
- All spills are to be recorded in the environmental incident book.

E.12 Noise

- Noise generating activities must be restricted to between 07h00 and 17h00 Monday to Friday, unless otherwise approved by the appropriate competent person in consultation with adjacent landowners/affected persons.
- All equipment, vehicles and machinery must be in good working conditions and be equipped with sound mufflers if necessary.
- Construction staff must be trained and made aware of not creating unnessary noise such as hooting and shouting.

E.13 Pollution Control

- Soil and water pollution through usage of fuel, oil, paint, bitumen or other hazardous substances must be avoided.
- All construction vehicles are to be maintained in good working order so as to prevent soil or water pollution from oil, fuel or other leaks, and to reduce noise pollution.

E.14 Rivers and Streams

- During construction of bridge structures, there must be no obstruction of the water flow of rivers and streams.
- Excavated material must not be stockpiled on or near riverbanks, in order to prevent sedimentation occurring.
- Erosion control measures must be employed both during and after construction.
- No impediments to natural surface water flow, other than approved erosion control measures, must occur.

E.15 Safety

- Safety measures, such as detour signs, must be implemented during construction to ensure the safety of workers, pedestrians and drivers/passengers in vehicles in the vicinity of construction work.
- Special care must be taken in the vicinity of schools to ensure the safety of children wishing to cross the road under construction.
- The relevant signage (e.g. speed control signs) must be erected alongside the road during the operation phase in order to control traffic.
- Accommodation must be made for pedestrian pathways alongside the road during the construction and operation phases.

E.16 Soil Management

- Storm water drainage pipes must be installed alongside the road in all areas susceptible to soil erosion.
- Erosion should be minimised by the construction of meadow drains and the planting of indigenous vegetation on the side slopes and drains to reduce flow velocity of storm water.
- Spoil from cuts may be used in existing erosion galleys.
- Stone pitching and gabions should be constructed at pipe culvert outlets.
- Accidental spills of contaminants onto the ground e.g. oil, concrete, fuel and chemicals should be removed together with the contaminated soil.
- If necessary, an absorbent such as Peat Sorb should be used the aid in cleaning up the spill.

The contaminated soil should be disposed of in an appropriate container, depending on its classification.

- Servicing and re-fuelling of vehicles must only be carried out at construction camp.

E.17 Worker Conduct

Code of Conduct for Construction Personnel:

- Do not leave the construction site untidy and strewn with rubbish which will attract animal pests.
- Do not set fires.
- Do not cause any unnecessary, disturbing noise at the construction camp/site or at any designated worker collection/drop off points.
- Do not drive a construction-related vehicle under the influence of alcohol.
- Do not exceed the national speed limits on public roads or exceed the recommended speed limits on the site.
- Do not drive a vehicle which is generating excessive noise or gaseous pollution (noisy vehicles must be reported and repaired as soon as possible).
- Do not litter along the roadsides, including both the public and private roads.
- Do not pollute any water bodies (whether flowing or not).
- No member of the construction team is allowed to enter the areas outside the construction site.

E.18 Traffic Disturbances and Diversions

- Any traffic diversions must be undertaken with the approval of all relevant authorities and in accordance with all relevant legislation.
- Wherever possible, traffic diversion must only take place on existing disturbed areas and remain within the existing road reserve.
- Traffic diversion routes must be rehabilitated after use.

E.19 Vegetation

- Only vegetation falling directly on the route must be removed where necessary.
- Alien vegetation within the road reserve must be eradicated, and management measures must be implemented for future control of these species.
- Vegetation that has been removed from large areas (e.g. on traffic diversion routes) during construction must be replaced with indigenous vegetation after construction has been completed.

E.20 Waste Management

- All general, non-hazardous waste must be placed in a skip container and disposed of at a registered waste disposal site.
- The container is to ensure that the portable toilet facilities at the campsite are properly maintained and in working order.
- No disposal, or leakage, of sewage must occur on or near the site.
- All hazardous waste (e.g. oil, plant empty lime bags, contaminated wash water, etc) must be stored in leak proof containers and disposed of a registered hazardous waste disposal site.
- The contents of waste storage containers must, under no circumstances, be emptied to the surrounding area. In general, littering, discarding or burying of any materials is not allowed on site or along the route.
- Adequate waste receptacles must be available at strategic points around the construction camp and site for all domestic refuse and to minimise the occurrence of littering.
- Concrete rubble must be collected and disposed of as directed by the Project Manager.
- Each working area must be cleared of litter and building waste (e.g. rubble, wood, concrete packets etc) on completion of the day's work.
- Any spill around the container(s) should be treated as per Section C11 and C16.

PART F: OHSA 1993 HEALTH AND SAFETY SPECIFICATION

F1 SCOPE

This specification covers the health and safety requirements to be met by the Contractor to ensure a continued safe and healthy environment for all workers, employees and subcontractors under his control and for all other persons entering the site of works.

This specification shall be read with the Occupational Health and Safety Act (Act No 85 and amendment Act No 181) 1993, and the corresponding Construction Regulations 2003, and all other safety codes and specifications referred to in the said Construction Regulations.

In terms of the OHSA Agreement in Section C1.2.4 of the Contract document, the status of the Contractor as mandatory to the Employer (client) is that of an employer in his own right, responsible to comply with all provisions of OHSA 1993 and the Construction Regulations 2003.

This safety specification and the Contractor's own Safety Plan as well as the Construction Regulations 2003, shall be displayed on site or made available for inspection by all workers, employees, inspectors and any other persons entering the site of works.

The following are possible risks associated with this project:

- Potentially dangerous existing services, i.e. gas lines, water and sewerage mains, electrical high voltage cables, buried and overhead
- Deep excavations in soils requiring shoring or reducing of slopes
- Blasting of hard rock or demolition of concrete
- High pressure during testing of the pipe lines, which could result in potentially dangerous situations in the event of the pipeline or fittings failing
- Movement of construction vehicles on site, taking into consideration steep slopes, other traffic and existing services
- Exposure to possible injuries due to mishandling or failure of power and hand tools
- Non-conformance to specifications with regards to fasteners and materials
- Risks related to general safety and security on site

Additional risks may arise from specific methods of construction selected by the Contractor which are not necessary covered in the above.

F2. DEFINITIONS

For the purpose of this contract the following shall apply:

(a) **Employer**" where used in the contract documents and in this specification, means the Employer as defined in the General Conditions of Contract and it shall have the exact same meaning as "**client**" as defined in the Construction Regulations 2003. "**Employer**" and "**client**" is therefore interchangeable and shall be read in the context of the relevant document.

(b) "**Contractor**" wherever used in the contract documents and in this specification, shall have the same meaning as "**Contractor**" as defined in the General Conditions of Contract.

In this specification the terms "**principal contractor**" and "**contractor**" are replaced with "**Contractor**" and "**subcontractor**" respectively.

For the purpose of this contract the **Contractor** will, in terms of OHSA 1993, be the mandatory, without derogating from his status as an employer in his own right.

(c) "**Engineer**" where used in this specification, means the Engineer as defined in the General Conditions of Contract. In terms of the Construction Regulations the Engineer may act as agent on behalf of the Employer (the client as defined in the Construction Regulations).

F3. BIDS

The Contractor shall submit the following with his Bid:

(a) a documented Health and Safety Plan as stipulated in Regulation 5 of the Construction Regulations. The Safety Plan must be based on the Construction Regulations 2003 and will be subject to approval by the Employer;

(b) a declaration to the effect that he has the competence and necessary resources to carry out the work safely in compliance with the Construction Regulations 2003;

(c) a declaration to the effect that he made provision in his Bid for the cost of the health and safety measures envisaged in the Construction Regulations.

(d) Failure to submit the foregoing with his Bid, will lead to the conclusion that the Contractor will not be able to carry out the work under the contract safely in accordance with the Construction Regulations.

F4. NOTIFICATION OF COMMENCEMENT OF CONSTRUCTION WORK

After award of the contract, but before commencement of construction work, the Contractor shall, in terms of Regulation 3, notify the Provincial Director of the Department of Labour in writing if the following work is involved:

(a) the demolition of structures and dismantling of fixed plant of height of 3,0m or more;
(b) the use of explosives;
(c) construction work that will exceed 30 days or 300 person-days;
(e) excavation work deeper than 1,0m; or
(f) working at a height greater than 3,0m above ground or landings.

The notification must be done in the form of the pro forma included under Section 9 (Forms to be completed by Successful Bidder) of the Bid document.

A copy of the notification form must be kept on site, available for inspection by inspectors, Employer, Engineer, employees and persons on site.

F5. RISK ASSESSMENT

Before commencement of any construction work during the construction period, the Contractor shall have a risk assessment performed and recorded in writing by a competent person. (Refer Regulation 7 of the Construction Regulations 2003).

The risk assessment shall identify and evaluate the risks and hazards that may be expected during the execution of the work under the contract, and it shall include a documented plan of safe work procedures to mitigate, reduce or control the risks and hazards identified.

The risk assessment shall be available on site for inspection by inspectors, Employer, Engineer, subcontractors, employees, trade unions and health and safety committee members, and must be monitored and reviewed periodically by the Contractor.

F6. APPOINTMENT OF EMPLOYEES AND SUBCONTRACTORS

6.1 Health and Safety plan

The Contractor shall appoint his employees and any subcontractors to be employed on the contract, in writing, and he shall provide them with a copy of his documented Health and Safety Plan, or relevant sections thereof. The Contractor shall ensure that all subcontractors and employees are committed to the implementation of his Safety Plan.

6.2 Health and safety induction training

The Contractor shall ensure that all employees under his control, including subcontractors and their employees, undergo a health and safety induction training course by a competent person before commencement of construction work. No visitor or other person shall be allowed or permitted to enter the site of the works unless such person has undergone health and safety training pertaining to hazards prevalent on site.

The Contractor shall ensure that every employee on site shall at all times be in possession of proof of the health and safety induction training issued by a competent person prior to commencement of construction work.

F7. APPOINTMENT OF SAFETY PERSONNEL

7.1 Construction Supervisor

The Contractor shall appoint a full-time **Construction Supervisor** with the duty of supervising the performance of the construction work.

He may also have to appoint one or more competent employees to assist the construction supervisor where justified by the scope and complexity of the works.

7.2 Construction safety officer

Taking into consideration the size of the project and the hazards or dangers that can be expected, the Contractor shall appoint in writing a full-time or part-time **Construction Safety Officer** if so decided by the Inspector of the Department of Labour. The Safety Officer shall have the necessary competence and resources to perform his duties diligently.

Provision shall be made by the Contractor in his rates, to cover the cost of this dedicated construction safety officer appointed after award of the contract.

7.3 Health and safety representatives

In terms of **Section 17 and 18 of the Act (OHSA 1993)** the Contractor, being the employer in terms of the Act for the execution of the contract, shall appoint a **health and safety representative** whenever he has more than 20 employees in his employment on the site of the works. The health and safety representative must be selected from employees who are employed in a full-time capacity at a specific workplace.

The number of health and safety representatives for a workplace shall be at least one for every 100 employees.

The function of health and safety representative(s) will be to review the effectiveness of health and safety measures, to identify potential hazards and major incidents, to examine causes of incidents (in collaboration with his employer, the Contractor), to investigate complaints by employees relating to health and safety at work, to make representations to the employer (Contractor) or inspector on general matters affecting the health and safety of employees, to inspect the workplace, plant, machinery etc. on a regular base, to participate in consultations with inspectors and to attend meetings of the health and safety committee.

7.4 Health and safety committee

In terms of Sections **17 and 18 of the Act (OHSA 1993)** the Contractor (as employer), shall establish one or more **health and safety committee(s)** where there are two or more health and safety representatives at a workplace. The persons selected by the Contractor to serve on the committee shall be designated in writing.

The function of the health and safety committee shall be to hold meetings at regular intervals, but at least

once every three months, to review the health and safety measures on the contract, to discuss incidents related to health and safety with the Contractor and the inspector, and to make recommendations regarding health and safety to the Contractor and to keep record of recommendations and reports made by the committee.

7.5 Competent persons

In accordance with the Construction Regulations the Contractor has to appoint in writing **competent persons** responsible for supervising construction work on each of the following work situations that may be expected on the site of the works.

(a) Risk assessment and induction training as described in Regulation 7 of the Construction Regulations;
(b) Fall protection as described in Regulation 8;
(c) Formwork and support work as described in Regulation 10;
(f) Excavation work as described in Regulation 11;
(g) Demolition work as described in Regulation 12;
(h) Scaffolding work as described in Regulation 14;
(i) Suspended platform operations as described in Regulation 15;
(j) Material hoists as described in Regulation 17;
(k) Batch plant operations as described in Regulation 18;
(l) Explosive powered tools as described in Regulation 19;
(m) Cranes as described in Regulation 20;
(n) Construction vehicle and mobile plant inspections on a daily basis by a competent person as described in Regulation 21(1);
(o) Control of all temporary electrical installation on the construction site as described in Regulation 22;
(p) Stacking and storage on construction sites as described in Regulation 26; and
(q) Inspections of fire equipment as described in Regulation 27.

A competent person may be appointed for more than one part of the construction work with the understanding that the person must be suitably qualified and able to supervise at the same time the construction work on all the work situations for which he has been appointed.

The appointment of competent persons to supervise parts of the construction work does not relieve the Contractor from any of his responsibilities to comply with **all** requirements of the Construction Regulations.

F8. RECORDS AND REGISTERS

In accordance with the Construction Regulations the Contractor is bound to keep records and registers related to health and safety on site for periodic inspection by inspectors, the Engineer, the Employer, trade union officials and subcontractors and employees. The following records and registers must be kept on site and shall be available for inspection at all times.

(a) A copy of the OHSA 1993 Construction Regulations 2003;
(b) A copy of this Health and Safety Specification;
(c) A copy of the Contractor's Health and Safety Plan (Regulation 4);
(d) A copy of the Notification of Construction Work (Regulation 3);
(e) A health and safety file in terms of Regulation 5(7) with inputs by the Construction Safety Officer (Regulation 6(7));
(f) A copy of the risk assessment described in Regulation 7;
(g) A full protection plan and the corresponding records of evaluation and training of employees working from elevated positions as described in Regulation 8;
(h) Drawings pertaining to the design of structures (Regulation 9(3)) and formwork and support work structures (Regulation 10(d)) must be kept on site;
(i) Pronouncement of the safety of excavations must be recorded in a register to be kept on site (Regulation 11(3)(h));
(j) A copy of the certificate of the system design for suspended platforms (Regulation 15(3));
(k) A notice must be affixed around the base towers of material hoists to indicate the maximum mass load, which may be carried at any one time by material hoists (Regulation 7(5));
(l) Maintenance records of material hoists and inspection results must be kept in a record book to be

kept on site (Regulation 17(8));

(m) A record of any repairs to or maintenance of a batch plant must be kept on site (Regulations 18(9));

(n) A warning notice must be displayed in a conspicuous manner when and wherever an explosive powered tool is used (Regulation 19(2));

(o) A register for recording of findings by the competent person appointed to inspect construction vehicles and mobile plant (Regulation 21(1)(j)).

F9. CONTRACTORS RESPONSIBILITIES

For this contract the Contractor will be the mandatory of the Employer (Client), as defined in the Act (OHSA 1993), which means that the Contractor has the status of employer in his own right in respect of the contract. The Contractor is therefore responsible for all the duties and obligations of an employer as set out in the Act (OHSA 1993) and the Construction Regulations 2003.

Before commencement of work under the contract, the Contractor shall enter into an agreement with the Employer (Client) to confirm his status as mandatory (employer) for the contract under consideration.

The Contractor's duties and responsibilities are clearly set out in the Construction Regulations 2003, and are not repeated in detail but some important aspects are highlighted hereafter, without relieving the Contractor of any of his duties and responsibilities in terms of the Construction Regulations.

(a) Contractor's position in relation to the Employer (Client) (Regulation 4)

In accordance with Section 4 of the Regulations, the Contractor shall liaise closely with the Employer or the Engineer on behalf of the Employer, to ensure that all requirements of the Act and the Regulations are met and complied with.

(b) The Principal Contractor and Contractor (Regulation 5)

The Contractor is in terms of the definition in Regulation 2(b) the equivalent of Principle Contractor as defined in the Construction Regulations, and he shall comply with all the provisions of Regulation 5.

Any subcontractors employed by the Contractor must be appointed in writing, setting out the terms of the appointment in respect of health and safety. An independent subcontractor shall however provide and demonstrate to the Contractor a suitable, acceptable and sufficiently documented health and safety plan before commencement of the subcontract. In the absence of such a health and safety plan the subcontractor shall undertake in writing that he will comply with the Contractor's safety plan, the health and safety specifications of the Employer and the Construction Regulations 2003.

(c) Supervision of construction work (Regulation 6)

The Contractor shall appoint the safety and other personnel and employees as required in terms of Regulation 6 and as set out in paragraph 7 above. Appointment of those personnel and employees does not relieve the Contractor from any of the obligations under Regulation 6.

(d) Risk assessment (Regulation 7)

The Contractor shall have the risk assessment made as set out in paragraph 7 above before commencement of the work and it must be available on site for inspection at all times. The Contractor shall consult with the health and safety committee or health and safety representative(s) etc. on a regular basis to ensure that all employees, including subcontractors under his control, are informed and trained by a competent person regarding health hazards and related work procedures.

No subcontractor, employee or visitor shall be allowed to enter the site of works without prior health and safety induction training, all as specified in Regulation 7.

(e) Fall protection (Regulation 8)

Fall protection, if applicable to this contract shall comply in all respects with Regulation 8 of the Construction Regulations.

(f) Structures (Regulation 9)

The Contractor will be liable for all claims arising from collapse or failure of structures if he failed to comply with all the specifications, project specifications and drawings related to the structures, unless it can be proved that such collapse or failure can be attributed to faulty design or insufficient design standards on which the specifications and the drawings are based.

In addition, the Contractor shall comply with all aspects of Regulation 9 of the Construction Regulations.

(g) Formwork and support work (Regulation 10)

The Contractor will be responsible for the adequate design of all formwork and support structures by a competent person.

All drawings pertaining to formwork shall be kept on site and all equipment and materials used in formwork, shall be carefully examined and checked for suitability by a competent person.

The provisions of Regulation 10 of the Construction Regulations shall be followed in every detail.

(h) Excavation work (Regulation 11)

It is essential that the Contractor shall follow the instructions and precautions in the Standard Specifications and Project Specifications as well as the provisions of the Construction Regulations to the letter as unsafe excavations can be a major hazard on any construction site. The Contractor shall therefore ensure that all excavation work is carried out under the supervision of a competent person, that inspections are carried out by a Professional Engineer or Technologist, and that all work is done in such a manner that no hazards are created by unsafe excavations and working conditions.

Supervision by a competent person will not relieve the Contractor from any of his duties and responsibilities under Regulation 11 of the Construction Regulations.

(i) Demolition work (Regulation 12)

Whenever demolition work is included in a contract, the Contractor shall comply with all the requirements of Regulation 12 of the Construction Regulations. The fact that a competent person has to be appointed by the Contractor does not relieve the Contractor from any of his responsibilities in respect of safety of demolition work.

(j) Tunnelling (Regulation 13)

The Contractor shall comply with Regulation 13 wherever tunnelling of any kind is involved.

(k) Scaffolding (Regulation 14)

The Contractor shall ensure that all the provisions of Regulation 14 of the Construction Regulations are complied with. [Note: Reference in the Regulations to “Section 44 of the Act” should read “Section 43 of the Act”].

(l) Suspended platforms (Regulation 15)

Wherever suspended platforms will be necessary on any contract, the Contractor shall ensure that copies of the system design issued by a Professional Engineer are submitted to the Engineer for inspection and approval. The Contractor shall appoint competent persons as supervisors and competent scaffold erectors, operators and inspectors and ensure that all work related to suspended

platforms are done in accordance with Regulation 15 of the Construction Regulations.

(m) Boatswain's chains (Regulation 16)

Where boatswain's chains are required on the construction site, the Contractor shall comply with Regulation 16.

(n) Material Hoists (Regulation 17)

Wherever applicable, the Contractor shall comply with the provisions of Regulation 17 to the letter.

(o) Batch plants (Regulation 18)

Wherever applicable, the Contractor shall ensure that all lifting machines, lifting tackle, conveyors, etc. used in the operation of a batch plant shall comply with, and that all operators, supervisors and employees are strictly held to the provisions of Regulation 18. The Contractor shall ensure that the General Safety Regulations (Government Notice R1031 of 30 May 1986), the Driven Machinery Regulations (Government Notice R295 of 26/2/1988) and the Electrical Installation Regulations (Government Notice R2271 of 11/10/1995) are adhered to by all involved.

In terms of the Regulations, records of repairs and maintenance shall be kept on site.

(p) Explosive powered tools (Regulation 19)

The Contractor shall ensure that, wherever explosive-powered tools are required to be used, all safety provisions of Regulation 19 are complied with.

It is especially important that warning notices are displayed and that the issue and return of cartridges and spent cartridges be recorded in a register to be kept on site.

(q) Cranes (Regulation 20)

Wherever the use of tower cranes becomes necessary, the provisions of Regulation 20 shall be complied with.

(r) Construction vehicles And mobile plant (Regulation 21

The Contractor shall ensure that all construction vehicles and plant are in good working condition and safe for use, and that they are used in accordance with their design and intended use. The vehicles and plant shall only be operated by workers or operators who have received appropriate training, all in accordance with all the requirements of Regulation 21.

All vehicles and plant must be inspected on a daily basis, prior to use, by a competent person and the findings must be recorded in a register to be kept on site.

(s) Electrical installation and machinery on construction sites (Regulation 22)

The Contractor shall comply with the Electrical Installation Regulations (Government Notice R2920 of 23 October 1992) and the Electrical Machinery Regulations (Government Notice R1953 of 12 August 1993). Before commencement of construction, the Contractor shall take adequate steps to ascertain the presence of, and guard against dangers and hazards due to electrical cables and apparatus under, over or on the site.

All temporary electrical installations on the site shall be under the control of a competent person, without relieving the Contractor of his responsibility for the health and safety of all workers and persons on site in terms of Regulation 22.

(t) Use of temporary storage of flammable liquids on construction sites (Regulation 23)

The Contractor shall comply with the provisions of the General Safety Regulations (Government

Notice R1031 of 30 May 1986) and all the provisions of Regulation 23 of the Construction Regulations to ensure a safe and hazard-free environment to all workers and other persons on site.

(u) Water environments (Regulation 24)

Where construction work is done over or in close proximity to water, the provisions of Regulation 24 shall apply.

(v) Housekeeping on Construction sites (Regulation 25)

Housekeeping on all construction sites shall be in accordance with the provisions of the environment Regulations for workplaces (Government Notice R2281 of 16 October 1987) and all the provisions of Regulation 25 of the Construction Regulations.

(w) Stacking and storage on construction sites (Regulation 26)

The provisions for the stacking of articles contained in the General Safety Regulations (Government Notice R1031 of 30 May 1986) as well as all the provisions Regulation 26 of the Construction Regulations shall apply.

(x) Fire precautions on construction sites (Regulation 27)

The provisions of the Environmental Regulations for Workplaces (Government Notice R2281 of 16 October 1987) shall apply.

In addition, the necessary precautions shall be taken to prevent the incidence of fires, to provide adequate and sufficient fire protection equipment, sirens, escape routes etc. all in accordance with Regulation 27 of the Construction Regulations.

(y) Construction welfare facilities (Regulation 28)

The Contractor shall comply with the construction site provisions as in the Facilities Regulations (Government Notice R1593 of 12 August 1988) and the provisions of Regulation 28 of the Construction Regulations.

(z) Non-compliance with the Construction Regulations 2003

The foregoing is a summary of parts of the Construction Regulations applicable to all construction projects.

The Contractor, as employer for the execution of the contract, shall ensure that all provisions of the Construction Regulations applicable to the contract under consideration are complied with to the letter.

Should the Contractor fail to comply with the provisions of the Regulations 3 to 28 as listed in Regulation 30, he will be guilty of an offence and will be liable, upon conviction, to the fines or imprisonment as set out in Regulation 30.

***The Contractor is advised in his own interest to make a careful study of the Act and the Construction Regulations as ignorance of the Act and the Regulations will not be accepted in any proceedings related to non-conformance to the Act and the Regulations*.**

F10. MEASUREMENT AND PAYMENT

10.1 Principles

It is a condition of this contract that Contractors, who submit Bids for this contract, shall make provision in their Bids for the cost of all health and safety measures during the construction process. All associated activities and expenditure are deemed to be included in the Contractor's Bidded rates and prices.

(a) Safety personnel

The Construction Supervisor, the Construction Safety Officer, Health and Safety Representatives, Health and Safety Committee and Competent Persons referred to in clauses 7.1 to 7.5 shall be members of the Contractor's personnel, and no additional payment will be made for the appointment of such safety personnel.

(b) Records and Registers

The keeping of health and safety-related records and registers as described in 8 is regarded as a normal duty of the Contractor for which no additional payment will be considered, and which is deemed to be included in the Contractor's Bidded rates and prices.

PART H: DRILLING OF BOREHOLES

H1 PROJECT SPECIFICATIONS

H1.1 Application and Status

These Project Specifications describe the Works to be executed by the Contractor under the Contract and set out the requirements for the Works as well as the minimum standards to be achieved by the Contractor.

These Project Specifications are supplementary to the Standard Specifications for Drilling of Boreholes (hereinafter referred to as the "Standard Specifications") and set out variations, additions and omissions to the Standard Specifications and as such, shall be construed and interpreted in conjunction with such Standard Specifications.

These Project Specifications set out the variations, additions and omissions which shall be applicable in the Contract to the Standard Specifications and should there exist any discrepancy, conflict or inconsistency between any part of the Standard Specifications and any part of these Project Specifications, the provisions of these Project Specifications shall take precedence and prevail in the Contract.

H1.2 Interpretation

Wherever reference is made within the Standard Specifications and/or these Project Specifications to the "Geohydrological Consultant" and/or the "Geohydrologist" and/or the "Consultant", it shall be deemed to mean the "Engineer" as defined in the Conditions of Contract.

Wherever reference (if any) is made within the Standard Specifications and/or these Project Specifications to the "Implementing Agent", the "Department of Agriculture and Rural Development", "LDARD" or any party not being the "Employer", the Contractor, the Engineer, the Geohydrological Consultant or the Consultant, it shall be deemed to mean the Employer.

H1.3 Purpose and Scope

The Contract is for the drilling and/or the rehabilitation of boreholes for Agricultural Projects and all Works associated therewith in accordance with:

(1) the Information Provided to the Bidder as per Section 1 of this document,

(2) any further details/instructions as may be ordered by the Employer or the Hydrogeological Consultant.

The drilling services are required for a period of three years from the date of award and no specific quantity of work has been identified. The Contract is based on a Schedule of Rates with payment to be made on the basis of measured quantities and the bided rates.

The Scope of Work to be actually executed by the Contractor will be as decided by the Engineer in consultation with the Employer, as provided for in the Conditions of Contract. The work to be carried out during the currency of the contract may be given as separate batches (referred to in the Conditions of Contract as "Works Segments"). Each Works Segment to be executed by the Contractor will, from time to time during the currency of the Contract, be detailed in a written instruction by the Consulting Hydrogeologist as provided for in the Conditions of Contract.

H1.4 Drilling Equipment and Materials

Further to the provisions of the Conditions of Contract, the Contractor shall furnish all the particulars requested in Section 3-0 (sub-section 5-0) of this document. The capacity shall be sufficient to cope with the work as specified for the project. It shall be kept at all times in full working order and good repair. The Hydrogeological Consultant will have the right to inspect the equipment to be used prior to the commencement of the Works. If the Hydrogeological Consultant considers that the plant in use on the site of the Works is in any way inefficient or inadequate in capacity, he shall have the right to call upon the Contractor to put such equipment in order within seven days or, alternatively, to remove such plant and replace it with other plant or equipment which he considers necessary to

meet the requirements of the Contract.

In the event of breach by the Contractor of this requirement, the Hydrogeological Consultant reserves the right to recommend to the Client to terminate the Contract in accordance with the provisions of Sub-Clause 58.(1)(b)(vi) of the Conditions of Contract.

Equipment brought onto the site may not be removed there from without the written permission of the Hydrogeological Consultant. It will be the responsibility of the Contractor to arrive on site with all staff, equipment, materials and chemicals required to complete the work without interruption.

Where existing equipped boreholes are to be rehabilitated, the Contractor must provide suitable plant to enable the installed pumping equipment to be removed and reinstalled. This includes the removal and reinstallation of hand pumps, wind pumps and motorised pumps. Rehabilitation of existing boreholes may include the recovery of existing pumping equipment that was previously dropped into a borehole.

H1.5 Borehole Construction -

Two borehole design options are shown in Drawings 2 and 3 in Section 6 of this document. The decision as to which of these designs or any other suitable and appropriate design to use will be made by the Hydrogeological Consultant.

Any variations from the drilling diameters specified in the Standard Specifications must be acceptable to the Hydrogeological Consultant.

The Contractor shall not use drilling media which in any way might compromise the integrity of the aquifer and/or the yield of the borehole. The Contractor must provide suitable and adequate tanks in which to mix and hold all drilling fluid.

Borehole straightness and verticality shall be judged according to the criteria set out in the Standard Specifications and Drawing 5 in Section 6 of this document.

The backfilling of boreholes will be undertaken in accordance with the criteria set out in the Standard Specifications and as illustrated in Drawings 7 in Section 6 of this document.

Formation stabiliser shall be used in accordance with the discussion presented in Standard Specifications and as illustrated in Drawing 3 in Section 6 of this document.

Each successful borehole shall be furnished with a concrete collar as described in the Standard Specifications and as illustrated in Drawing 6 in Section 6 of this document.

Unsuccessful and abandoned boreholes and lost boreholes shall be treated in the manner set out in these subsections.

Each successful borehole shall be furnished with a sanitary seal as described in the Standard Specifications and as illustrated in Drawings 2 and 3 in Section 6 of this document. The purpose of a sanitary seal is to prevent the ingress of potentially contaminated surface water into the borehole via the annular space between the borehole sidewall and the outside of the casing. Such sanitary seal shall be constructed in-the presence of the Geohydrologist or his representative. The seal shall extend to a minimum depth of 5 m below surface, and will entail the drilling of a 305 mm diameter hole, in which a 254 mm ID steel casing (TYPE 1 sanitary seal) or 215 mm ID steel casing (TYPE 2 sanitary seal) will be placed using centralisers at the bottom to ensure that the casing is placed in the centre of the hole. In exceptional cases the Engineer may decide to alter the drilling and casing diameters, but will not exceed the aforementioned diameters. Four equally spaced flat bars of appropriate size, welded to the sides of the casing can be used as centralisers. The seal must consist of Portland Cement (quick drying) mixed to slurry with bentonite and water, which is free of oil and organic matter. The bentonite and water should be thoroughly mixed prior to adding and mixing with cement. The Contractor is to use a suitable method in placing the sanitary seal to ensure complete filling of the void between the casing and borehole. Care should be taken not to leave any voids in the sanitary seal.

H1.6 Data Recording and Reporting

Data must be recorded on the borehole log and penetration rate log provided in Section 6 of this document. Penetration times per metre are to be recorded with a stopwatch, all water intersection depths and estimated yield, type of formation encountered as well as all details of both temporary and permanent casing installed in boreholes shall be recorded as a minimum requirement.

H1.7 Down-the-hole Loss of Equipment

The data shall be recorded on the borehole log and penetration rate log provided in Section 6 of this document.

H1.8 Rehabilitation of Existing Boreholes

Payment for additional casing inserted into the borehole shall be made as per the Schedule of Rates. This clause does not cover the return of the Contractor to a borehole previously drilled by the Contractor.

H1.9 Cessation of Drilling Activities

The termination, at any stage, of drilling operations on a borehole shall rest with the Consultant.

H1.10 Measurement and Payment

The Contractor appointed under this Contract is considered to be an expert in his field and is expected to organise and carry out the required work in an expert manner. Drilling problems encountered will be overcome entirely within the framework of the Specifications and the Schedule of Rates, and no claims for extra payments will be entertained for problems foreshadowed in the Specification or due to limitations imposed by the Specifications.

The measurement of and payment for all materials and work provided by the Contractor in the course of the project will be according to the criteria as set out and are applicable in respect of such as are variously specified in the Standard Specifications and hereunder:

H1.10.1 Standing Time

This will cover periods when the Contractor's drilling rig and crew or, if more than one rig and crew are fielded, when all rigs and crews are idle waiting for decisions by the Consultant where those decisions or whose presence is required before the commencement or continuation of the work. Under no circumstances will standing time be payable for any delays other than those incurred by the Hydrogeological Consultant's decisions. Except only for abnormal weather conditions as provided for in Sub-Clause 47.(2) of the Conditions of Contract, no standing time will be payable due to inclement weather or prevention of access to a site by the Contractor or Hydrogeological Consultant due to inclement weather. Further, no standing time will be payable to the Contractor in respect of any periods where the Contractor is not engaged in the execution of the Works as a result of the Consultant having failed to issue an instruction to commence with the works of any Works Segment and there being no other Contract Works on which the Contractor is required to carry out work.

The Contractor must make provision for one-hour standing time per borehole to allow for the measurement of groundwater levels and the determination of optimum casing installation (plain and slotted). Since no separate payment will be made for standing time (up to 1 hour) resulting from these activities, the Contractor must allow for this.

H1.10.2 Inter-hole Moves

Payment for inter-hole moves up to a distance of ten kilometres shall be made at the unit rate bided for in the Schedule of Rates. Inter-hole moves in excess of ten kilometres shall be remunerated for the first ten kilometres at the bided unit rate and, for each full kilometre thereafter, at the rate per kilometre bided in the Schedule of Rates.

H1.10.3 Reaming of Boreholes

Where a borehole has previously been drilled to a smaller diameter than that required, the original borehole should be reamed to the required diameter. Reaming of a borehole to larger diameters may also be required for borehole construction purposes. Remuneration for this work shall be according to the rates bided in the Schedule of Rates.

H1.10.4 Removal of Existing Pumping Equipment

This rate shall cover the removal of existing pumping equipment in a borehole to be rehabilitated and secure storage of removed existing equipment. Payment for removal up to an installed depth of 50 m shall be made at the unit rate bided for in the Schedule of Rates. Installed depths in excess of 50 m shall be remunerated for the first 50 m at the bided unit rate and, for each full metre thereafter, at the rate per metre bided in the Schedule of Rates. The Contractor is solely responsible for the secure storage of removed equipment to prevent theft of existing equipment from site.

H1.10.5 Re-installation of Existing Pumping Equipment

This rate shall cover the re-installation of existing pumping equipment in a borehole following rehabilitation of the borehole. Payment for installation up to a depth of 50 m shall be made at the unit rate bided for in the Schedule of Rates. Re-installation depths in excess of 50 m shall be remunerated for the first 50 m at the bided unit rate and, for each full metre thereafter, at the rate per metre bided in the Schedule of Rates. The existing pumping equipment shall be restored to its working condition as encountered before removal unless the Contractor is instructed otherwise by the Hydrogeological Consultant.

H1.10.6 Labour-based Methods to Prepare Access to Site

The use of labour-based methods required to prepare access to a site (bush clearing and/or limited road making) must be approved by the Hydrogeological Consultant. Labour required for such work must be employed from the local community with whom the number of man days required for the task is to be negotiated and finalised prior to gaining approval from the Hydrogeological Consultant. Contractors must always keep in mind that the minimum wages payable to labourers must at all times adhere to “Minimum Wage Legislation” for the particular area.

H2 STANDARD SPECIFICATIONS FOR BOREHOLE DRILLING

H2.1 Purpose and Scope

Simply stated, the purpose of this activity is to establish a means to access and tap groundwater resources. This is most often provided by the drilling of a borehole. It is not sufficient for this facility to represent just another hole in the ground. It is vital that the borehole be constructed and completed to certain minimum standards in order to secure the long-term viability and serviceability of the installation. This component of the project is served jointly by the Hydrogeological Consultant and the Drilling Contractor. It is therefore expected of these parties to function as a team within the framework of their individual briefs as set out in their respective contract agreements with the Implementing Authority.

H2.2 Approach and Responsibility

In general, it is required that the drilling of any borehole be approached with due diligence and care on the part of the appointed drilling contractor(s). Specifically, it is required that the drilling of each borehole be approached in a cost effective manner to establish a water supply. In some instances, boreholes may be drilled for exploration and/or resource monitoring purposes. Under normal circumstances, the pre-drilling of a 165 mm diameter exploration borehole is drilled and the borehole is reamed to larger diameters for construction purposes. In leached/cavernous carbonate rock areas drilling normally commences with larger diameters, to limit reaming of boreholes and allow for telescope borehole construction.

The Drilling Contractor(s) will function under the direct supervision of the Hydrogeological Consultant. This by no means implies that the Drilling Contractor(s) is absolved from any responsibility. All drilling activities will, therefore, be approached through communication and discussion between the Hydrogeological Consultant and the contractor(s) with a view to developing the most suitable and mutually acceptable finished product serving the best interests of the project. The fact that the Drilling Contractor is also appointed for the skills which he can offer the project and is often able to provide, from experience, practical approaches and solutions to specific problems must be recognised and accepted by the Hydrogeological Consultant.

Failure by the contractor(s) to timeously render advice and input where required will be regarded as a dereliction of duty. This responsibility extends to informing the Hydrogeological Consultant of serious reservations regarding any aspect of the work. The contractor(s) will also be required to maintain the aesthetic appearance of the site during drilling operations, including keeping the site neat, tidy and free of litter. More importantly, the contractor must ensure that safety standards are met and that the work site is kept free, as far as is possible, from vehicular and pedestrian traffic and from interested bystanders and onlookers not involved with the project.

In essence, the final responsibility for the finished water supply borehole and all actions and activities leading up thereto must be carried jointly by the Hydrogeological Consultant of the Executive Agency and the appointed Drilling Contractor(s).

H2.3 Techniques

The most common method employed for the sinking of a water supply borehole is that of rotary air percussion drilling employing a down-the-hole (DTH) hammer. This drilling technique is ideally suited to hard rock formations and therefore finds wide application in most of the geological environments encountered in South Africa. Other techniques which will be applied depending on site-specific circumstances include: (1) Odex drilling and (2) cable tool percussion drilling. Method (1) represent technically more sophisticated techniques, which find specific application in loose and unconsolidated materials. Method (2) employs the familiar jumper rig, its most useful application being the cleaning and rehabilitation of existing boreholes.

In light of the above, the preferred drilling technique to be employed on community water supply projects is that of rotary air percussion.

H2.4 Equipment and Materials

The equipment made available by the Drilling Contractor must be in good working order. It must also be maintained in good condition for the duration of the project. In order to achieve this, time should be set aside each week for the routine service and preventative maintenance of all equipment (subsection 5). The drilling equipment must include

a full air/foam pumping system. At the start of the project, the gauge diameter of the button drill bits to be employed with the rotary air percussion drilling technique must conform closely to their manufactured gauge and must also possess all of their tungsten carbide buttons.

The Hydrogeological Consultant will discuss with the Drilling Contractor the retirement of a bit due to excessive wear or damage incurred during the course of the project. Further, it is imperative that the equipment be of a suitable size and capacity to deal, on occasion, with: (1) deep boreholes (up to 300 m), (2) larger than average borehole diameters (up to 305 mm), (3) large quantities of groundwater and (4) potentially onerous drilling conditions. Since this capability is provided in large measure by the air compressor, it is considered that a compressor having a capacity of at least 2400 kPa (24 bar) and a volume of at least 750 cfm is appropriate for most water borehole drilling applications and conditions using the rotary air percussion technique. In order to maintain the straightness of a borehole, the Hydrogeological Consultant may insist that the Drilling Contractor employ at least an overshot sleeve (drill collar) fitted to the pneumatic DTH hammer. Further precautions to ensure this aspect might include the use of a stabiliser rod immediately behind the bit/hammer/overshot combination. All materials to be used on the project should be new and meet project specifications. This applies particularly to steel casing, which shall be: (1) of the seam-welded type, (2) round, (3) straight, (4) of uniform wall thickness and (5) have bevelled edges. Second-hand material such as steel casing recovered from an earlier borehole can be used provided that it has been refurbished to an acceptable condition (refer to subsection 5.6f). The Hydrogeological Consultant will have the right to reject, with motivation, any material (including casing) which is deemed inappropriate, substandard or otherwise unsuitable for the project.

H2.5 Workmanship and Performance

The standard of workmanship of the Drilling Contractor will be subject to close scrutiny by the Hydrogeological Consultant. Many aspects thereof are of a subjective nature and not readily quantifiable. Every attempt must, therefore, be made to render this beyond possible criticism. Judgment of the performance of the Drilling Contractor in the execution of assigned work is similarly of a subjective nature. Although it cannot be expected of the contractor to complete a specified number of boreholes in a given time period, it is reasonable to expect that "favourable progress" be made under normal circumstances and drilling conditions. An indication of what might be regarded as "favourable progress" is considered to fall in the range of 50 to 100 m of drilling advancement per day taking into consideration inter-hole moves and set-up time. Performance being related to efficiency and efficiency in turn being a function of, amongst other factors, the number of mechanical equipment breakdowns suffered by the contractor, it will be in the best interests of the contractor to set aside time for the routine preventative maintenance of equipment. If the contractor is inclined to work a 6 or 7-day week, it is preferred that maintenance activities be scheduled for the weekends. Such schedule must be communicated to the Hydrogeological Consultant. This party may insist that the Drilling Contractor does not start with the drilling of a borehole over a weekend. Although work-in-progress may be completed, the contractor shall under no circumstances vacate a site before the Hydrogeological Consultant has inspected the completed works and sanctioned the move to the next borehole.

H2.6 Borehole Construction

The extremely diverse nature of subsurface conditions, sometimes over very short distances, renders it virtually impossible to address this aspect in great or specific detail. This factor also rules out standardisation in this regard. It is possible, however, to address certain basic borehole construction practices which will contribute to final acceptance of the successfully finished product.

(a) Drilling Diameter

Drilling diameters will be 152 mm (6"), 165 mm (6,5"), 203 mm (8"), 254 mm (10") and 305 mm (12") for rotary air percussion drilling. Odex drilling diameters will be 194 mm, 219 mm or 273 mm OD. Any variations must be acceptable to the Engineer.

The minimum final cased diameter of a successful community water supply borehole shall not be less than 152 mm nominal.

The contractor will be remunerated for drilling per linear metre of depth at the rate bided for each relevant drilling diameter employed as set out in the Schedule of Rates.

(b) Steel Casing

Steel casing may either be used in a temporary manner or form a permanent part of the borehole infrastructure. Its temporary use is indicated in instances where, for example, the borehole is unsuccessful or the need for it to remain in place becomes redundant. Under these circumstances it is also referred to as a pre-collar, surface casing, starter casing, outer casing or soil casing generally to be removed (recovered) on completion of drilling. The removal of temporary/starter casing to a depth of 5 m will not be a payable item under recovery of steel casing. It will be left in place where the Hydrogeological Consultant is of the opinion that the unsuccessful borehole should be secured to serve a long-term groundwater monitoring purpose. In such instances, additional provision must be made to protect the borehole against actions, which may compromise this function.

More commonly, however, this casing constitutes the final casing with which a successful borehole is equipped/constructed. Its proper installation, therefore, is mandatory. It is installed from surface through unstable, unconsolidated or fractured materials usually occurring in the near surface. Under these circumstances, the function of steel casing includes one or more of: (1) supporting unstable materials against collapse into the borehole during drilling, (2) facilitating the installation or removal of other casing, (3) minimizing the erosion and widening of the unstable upper portions of the borehole sidewall caused by the return flow established during drilling and/or the passage of drilling equipment/tools and (4) facilitating the placement of a sanitary seal and/or gravel pack or formation stabilizer. The casing must conform to the specifications set out in subsection 5-4.

In order to ensure as far as is possible that the annular space between this casing and the borehole sidewall remains open for the later emplacement of a sanitary seal, the circumferential entrance to this space must be temporarily plugged. Hessian sacking packed around and lightly tamped into the surface entrance to this annular space can be used for this purpose. In instances where steel casing needs to be driven through unstable horizons (generally at greater depths in a borehole), it will also be required that such casing be fitted with a casing shoe to protect the “mouth” of the casing from damage (subsection 5-6.c). Irrespective of the casing used to facilitate the drilling of the borehole, the final cased diameter of the finished product must be sufficient for the borehole to easily accept a borehole pump. Since the outside diameter of the latter is generally in the order of 1 00 mm, it is required that the final cased diameter of the borehole be not less than 152 mm (6 in.) nominal where steel casing is used.

The Drilling Contractor will be remunerated for steel casing per linear metre thereof supplied, delivered and installed at the rate bided for each relevant casing diameter as set out in the Schedule of Rates.

(c) Casing Shoe

This item is fitted (welded) to the bottom end (foot) of a casing string in order to protect the “mouth” of the casing from damage due to forcing the casing through unstable horizons. Its use is therefore only warranted (indeed mandatory) in instances where such conditions reveal themselves to require securement through the emplacement of casing.

The Drilling Contractor will be remunerated for each casing shoe supplied and used at the rate bided for each relevant shoe diameter as set out in the Schedule of Rates.

(d) uPVC Casing

Also referred to as thermoplastic casing, the material generally comprises PVC (polyvinyl chloride) which, when treated to withstand ultraviolet radiation, is known as uPVC casing. Its application in the construction of community water supply boreholes is rather specific, being used mainly in instances where security against the collapse of a borehole sidewall is required and where steel casing does not already offer such security. In such instances, the casing is inserted the entire length of the borehole and will certainly be perforated for some portion of its length.

The diameter of this casing will also necessarily be smaller than that of the steel casing used which, in most instances, will have a nominal diameter of 165 mm. In order not to compromise too severely on the minimum nominal diameter requirement of 152 mm for successfully completed community water supply boreholes (subsection 5-6.b), the inside diameter of the uPVC casing shall not be less than 127 mm with a wall thickness of 6 mm. It is also common practice to leave the steel casing in place in order to provide protection for the uPVC casing. The decision to use uPVC casing in the final construction of a borehole shall be made by the Hydrogeological Consultant.

The Drilling Contractor will be remunerated for uPVC casing per linear metre thereof supplied and installed at the rate bided for each relevant casing diameter as set out in the Schedule of Rates.

(e) Perforated Casing

Also referred to as slotted casing, this is used in instances where a casing string inserted into a borehole will extend across a water-bearing horizon. The perforations or slots will allow the groundwater to enter the borehole. Perforations can be made in a number of ways ranging from prefabricated machine- or plasma-cut slots to hacksaw, angle grinder or oxyacetylene torch-cut slots made in the field. The latter type of slots are seldom satisfactory since it is difficult to produce perforations which are: (1) of uniform size, (2) clean, open and free of restrictions and (3) small enough to control the ingress of finer material into the borehole. It is therefore preferred that perforated casing used in the construction of community water supply boreholes be of a prefabricated type. As a general guideline, slots should be: (1) 300 mm in length, (2) 3 to 4 mm wide, (3) positioned in bands around the circumference of the casing, (4) spaced equally in each band, (5) each circumferential band of slots separated by 100 mm of plain pipe, (6) every second band of slots aligned with one another, and (7) a 300 mm section of plain pipe left at both ends of the casing. This slot pattern is illustrated in Drawing 4 (Section 6). Bearing in mind that the number of slots forming each circumferential band depends not only on the casing diameter but also impact on the strength of the casing, it is suggested that the guidelines presented in Table H-1 be adhered to in this regard.

Table H-1 Recommended number of slots per circumferential band for various steel casing diameters and associated percentage open area provided

NORMAL CASING DIAMETER	NUMBER OF SLOTS PER CIRCUMFERENTIAL BAND	PERCENTAGE OPEN AREA
152mm	6	3,0%
165 mm	8	3,7%
203 mm	10	3,7%

Also presented in this table is the approximate open area provided by the above slot pattern applied to each of the given casing diameters. In certain instances, however, it may be required to use more sophisticated and expensive slotted casing. Also known as screens, these include: (1) continuously wound wedge wire screens, (2) louvered screens or bridge-slotted screens and (3) screens pre¬coated with gravel. The decision to use such screens shall again be made by the Hydrogeological Consultant after providing motivation to and gaining acceptance from the Implementing Authority.

The Drilling Contractor will be remunerated for perforated casing per linear metre thereof supplied and installed at the rate bided for each relevant casing diameter as set out in the Schedule of Rates.

(f) Recovery of Steel Casing

The contractor shall make every effort to recover, only on instruction of the Hydrogeological Consultant, steel casing from unsuccessful or abandoned boreholes. This casing can also be refurbished to an acceptable condition for re-use.

The Drilling Contractor will be remunerated for the recovery of steel casing per linear metre thereof salvaged from a borehole as per the rate bided in the Schedule of Rates. The removal of temporary/ starter casing to a depth of 5 m not be a payable item to the contractors.

Payment for the proper refurbishment of such casing shall be made on a time basis against bided standing time rates subject to verification and certification of the amount/duration of this work by the Hydrogeological Consultant.

(g) Borehole Straightness

The straightness (alignment) of a borehole is defined by the degree to which it deviates along its length from an imaginary centre line drawn through the borehole. This is readily determined by passing a “dummy” or “dolly” through the borehole. The equipment comprises a rigid hollow steel pipe having an outside diameter which is smaller by not more than 20 mm than the inside diameter of the final casing. Caution should be exercised when conducting a straightness test in an uncased or partially cased borehole since irregularities in the borehole sidewall may cause the “dummy” to become jammed. Since the casing string is normally constructed from six-metre

lengths, it is required that the “dummy” itself have a length of at least six metres in order to adequately “straddle” casing joints. This equipment must form part of the standard equipment supplied by the Drilling Contractor. It must also be readily available since the Hydrogeological Consultant may request a straightness test at any stage during drilling. The “dummy”, suspended from a flexible steel rope (normally the hoist line with which most drilling rigs are equipped), is slowly lowered down the borehole.

The borehole will be considered straight if the “dummy” passes down the entire length of the borehole and can be withdrawn without it binding or becoming stuck in the borehole. The straightness test must be performed by the Drilling Contractor in the presence of the Hydrogeological Consultant and its success (or failure) recorded by this party.

A borehole which fails a straightness test will be deemed lost (subsection 5-6.1) and it will be required of the Drilling Contractor to drill a replacement borehole at own expense. In the event that a straightness test is made before completion of the borehole, then the contractor will be required to cease operations and facilitate access to the borehole for the duration of such activity. The contractor will recover the cost of production loss (incurred for the duration that drilling activities are interrupted) against the rate bided for standing time in the Schedule of Rates. It will be the responsibility of the Hydrogeological Consultant to verify and certify any claim by the Drilling Contractor in this regard.

(h) Borehole Verticality

This represents the plumb ness of the borehole as measured by the deviation of the centre of the borehole from the vertical at any depth within the bore. The deviation must not exceed two thirds of the borehole diameter (casing inside diameter) per 30 m of depth. Although the SABS 045-1974 standard code of practice for testing water boreholes (including for verticality) has been withdrawn, the nature and form of the apparatus to be used for this purpose remains valid. Drawing 5 in Section 6 of this document illustrates the equipment.

The equipment comprises a tripod (shear legs), a plumb-bob and a flexible wire line. The plumb-bob must be fitted with a centre-mounted spindle at one end and a centralising device on its circumference. The tripod is erected over the borehole such that its apex is above the centre of the borehole. The wire line is passed through a small pulley mounted at the apex. The plumb-bob, suspended from the wire line, must hang vertically from the pulley such that the wire line passes exactly through the centre of the borehole when the plumb-bob is centrally positioned within the mouth of the casing (tolerance 3 mm). The vertical distance from the pulley to the top of the casing must be measured accurately (tolerance 0,01 m). This distance must not be less than 2,4 m. The plumb-bob is then lowered in equal increments (generally 3 m) down the borehole. The deviation of the wire line measured in millimetres from the centre of the casing must be determined at each depth increment and the measurements recorded on a data sheet. This procedure must be continued for the entire length of the borehole. The measured deviation of the wire line from the centre of the mouth of the casing at each depth increment indicates the drift (Ø) of the plumb-bob. The measured deviation is used together with a deflection factor (Df) to calculate the actual deflection (Da) of the borehole from the vertical at each depth increment according to the equation:

$$Da = Ø\ (d + h)/h$$

where Ø = the measured drift (in millimetres) of the wire line at a given plumb-bob depth,
d = depth of plumb-bob below casing collar (in metres) for each drift (Ø) measurement,
h = vertical distance between the casing collar and the pulley (at the tripod apex) over which the wire line passes (in metres), and
(d + h)/h represents the deflection factor (Df).

The wire line deviation measurement is most accurately performed if a revolving template with a graduated radial slot is mounted directly over the collar of the casing. The slot is graduated in millimetres outwards from the centre of the template. The template is revolved until the wire line passing through the slot hangs free and straight in the slot and its deviation from the centre read off on the graduated slot.

The verticality test must be performed by the Hydrogeological Consultant in the presence of the Drilling Contractor. The consultant will therefore be required to provide the necessary equipment for conducting a verticality test. A borehole which fails a verticality test will be deemed lost (subsection 5-6.ℓ) and it will be required of the contractor to drill a replacement borehole at own expense. In the event that a verticality test is made before completion of the borehole, then the Drilling Contractor will be required to cease operations and facilitate access to the borehole for

the duration of such activity.

The contractor will recover the cost of production loss (incurred for the duration that drilling activities are interrupted) against the rate bided for standing time in the Schedule of Rates. It will be the responsibility of the Hydrogeological Consultant to verify and certify any claim by the Drilling Contractor in this regard.

(i) Backfilling

This entails filling the annular space between the borehole sidewall and the outside of the casing with suitable material. The purpose of annular backfilling includes: (1) the provision of a base on which to found a sanitary seal and (2) the provision of support for the sidewalls of the borehole and the casing. In instances where casing has been seated at a comparatively shallow depth in fresh material below a weathered near-surface horizon, all of the drill cuttings removed from the borehole whilst drilling represents suitable material for this purpose. Annular backfilling with this material is not advisable in instances where this is not the case, such as for example where the casing extends to a substantial depth and comprises slotted/perforated sections or where the water-bearing horizon is shallow and open to the borehole via slotted/perforated casing. In these instances, it will be required to insert a formation stabiliser into the annulus. The backfilling must extend to within approximately 5 m of the ground surface.

The Drilling Contractor will be remunerated for backfilling against the standing time rate (which shall include the supply and insertion of material required therefore) bided for in the Schedule of Rates.

(j) Formation Stabiliser

This comprises material which is placed in the annulus between the borehole sidewall and perforated/slotted sections of casing to stabilise the formation against collapse and ingress into the borehole. The drill cuttings and spoils removed from the borehole is not suitable material for this purpose. The stabiliser must comprise material which is: (1) well sorted, (2) well rounded, (3) low in calcareous content, and (4) graded such that the smallest grain size is larger than the casing perforations/slots. The stabiliser material can either be placed by hand or through a tremie pipe. Excessive bridging of stabiliser material in the annulus can be prevented: (1) through the use of centralisers on the casing or (2) by washing it in with clean water. The formation stabiliser should extend some 10 m above the top of the uppermost perforated/slotted section of casing before the borehole is developed.

The Drilling Contractor will be remunerated for formation stabiliser per 20 litre container supplied and installed at the rate bided for in the Schedule of Rates.

(k) Concrete Collar

The Drilling Contractor will construct a shallow circular concrete collar around each successfully completed borehole. This collar shall have the dimensions set out in Drawing 6 (Section 6) yielding a volume approaching 0,08 m3. The concrete mixture shall consist of water, Portland cement, stone aggregate (10 mm) and river sand. Quantities of these materials sufficient to make 0,1 m3 of concrete with the required strength of some 30 MPa after 28 days are: (1) 20 litre of water, (2) 42 kg (0,8 bag) of Portland cement, (3) 0,07 m3 of stone aggregate, and (4) 0,07 m3 of river sand. A similar collar may need to be constructed, on request off the Hydrogeological Consultant, over unsuccessful or abandoned boreholes as per Drawing 7, Section 6.

The contractor will be remunerated for a concrete collar per unit constructed at the rate provided in the Schedule of Rates, which rate shall include for the transport, supply, mixing and placement of all the materials required.

(l) Unsuccessful and Abandoned Boreholes

A borehole will be declared unsuccessful at the discretion of the Hydrogeological Consultant. The latter may also, at any time during the course of the work, order the abandonment of a borehole in progress.

In such instances, the Hydrogeological Consultant must instruct the Drilling Contractor on further actions to be taken. These may include either: (1) the salvage of any casing from the borehole and (2) the plugging of the borehole or (3) the securement of the borehole for long-term monitoring purposes, in which case it will be provided with a sanitary seal (subsection 5-6.n), concrete collar (5-6.k), protection (5-6.q) and marking (5-6.r).

Plugging (or finishing) of an unsuccessful or abandoned borehole is aimed at removing any danger or hazard such boreholes may present to the environment, e.g. as a conduit for the inflow or surface water into the groundwater

regime or as a danger to traffic (whether human, stock or vehicular) in the immediate vicinity thereof. This is achieved by shovelling the drill cuttings and other suitable natural material back into the unsuccessful borehole. In order to prevent this material from “hanging” in the borehole, it might be required to periodically wash it in with clean water during the infilling process. Once the infill material extends to the ground surface, it must be compacted by tamping it down manually and any subsidence topped up with fresh backfill material. The compacting and topping up activities should be repeated until assurance can be had that all reasonable precaution has been taken to prevent future subsidence. It will also be required to cast a concrete collar over the infilled borehole (subsection 5-6.m). This process is illustrated in Drawing 7 of Section 6.

The Drilling Contractor will be remunerated for an unsuccessful or abandoned borehole on the basis of bided rates in the Schedule of Rates for such of the following items as are relevant: (1) drilling per linear metre of depth for each relevant drilling diameter employed, (2) steel casing per linear metre thereof recovered excluding starter casing to a depth of 5 metres, (3) backfilling, (4) a sanitary seal, (5) borehole protection, and (6) borehole marking. Payment for any casing left behind in an unsuccessful or abandoned borehole will only be made, on the same basis as described in (2) above, on written certification by the Hydrogeological Consultant that the contractor has made every reasonable recovery attempt in this regard.

(m) Lost Boreholes

A borehole will be declared lost by the Hydrogeological Consultant in the event that it can not be completed satisfactorily due to factors such as: (1) the irrecoverable loss of drilling equipment, materials or tools therein, (2) accident to plant or heavy machinery, (3) failure to pass a straightness test, and (4) failure to pass a verticality test. A decision in this regard must be made after consultation with the Drilling Contractor, who will have the considered option to either attempt remediation of the situation to the satisfaction of the Hydrogeological Consultant or, alternatively, declare the situation irretrievable. No payment shall be made for any work done, materials used or time spent by the Drilling Contractor on a lost borehole. The cost of any materials recovered in a damaged state from a lost borehole will be borne by the contractor.

A borehole which is declared lost shall be replaced with a new borehole to be constructed by the Drilling Contractor in the vicinity of the lost borehole and at a position indicated by the Hydrogeological Consultant. Payment for a new borehole constructed under these circumstances shall be made on the same basis as for any other successfully completed borehole. Materials recovered in good condition may, however, be re-used by the contractor.

(n) Sanitary Seal

The purpose of a sanitary seal is to prevent the ingress of potentially contaminated surface water into the borehole via the annular space between the borehole sidewall and the outside of the casing. It is required, therefore, that every successful community water supply borehole be provided with a sanitary seal. The seal must consist of Portland cement mixed to slurry with bentonite and water, which is free of oil and other organic matter. The bentonite and water should be thoroughly mixed in the ratio of 2 kg bentonite to 25 litre water prior to adding and mixing in 50 kg (one bag) cement. The final grout seal must extend to a depth of at least 5 m below ground surface. The seal is preferably placed at the beginning of the drilling process after a 5 m deep 305 mm hole has been drilled and cased with 254 mm ID steel casing (type 1 sanitary seal) or with a 215 mm ID steel casing (type 2 sanitary seal. After placing the casing and centring the hole, an amount of bentonite, cement and water grout, adequate to fill the entire annulus between the casing and the wall of the borehole, is tremied into the casing. The slurry can be gravity-fed into the annulus through a small diameter tube (tremie pipe) extending to the depth of emplacement. The tremie pipe should be withdrawn slowly as the slurry fills up the annulus.

Care should be taken not to leave voids in the sanitary seal. These may result from: (1) channelling caused by casing which is not centred in the borehole, (2) an improperly mixed slurry which contains lumps and (3) an annular space which is too small to assure a uniform thickness of seal.

The Drilling Contractor will be remunerated for a sanitary seal per linear metre thereof against the rate bided in the Schedule of Rates. This rate will include for the supply, delivery, mixing and installation of all material for type 1 and type 2 sanitary seals.

(o) Borehole Development

This activity entails flushing all loose material from the borehole upon the completion of drilling. This material might comprise one or more of: (1) drill cuttings resting on the bottom, (2) loose material forming insecure portions of the

borehole sidewall, (3) clayey material “plastered” to the borehole sidewall during the drilling process, and (4) fine material which has collected behind screened portions of the borehole. The removal of this potentially “clogging” material often leads to an improvement in the yield of the borehole. The most common borehole development technique used simply entails repeatedly running the drill bit up and down in sequential passes across portions of the borehole with the compressed air turned open. The length of each pass will be dictated by the length of the drill rods used by the contractor. The process is normally performed from the bottom up, one drill rod being removed from the drill string upon development of the preceding (lower) section.

The borehole will be deemed sufficiently developed when very little or no material is brought to the surface in the return flow from the borehole as evidenced by collecting a portion of this flow in a bucket placed at the borehead during development. Other methods, which may be employed, for borehole development include: (1) surge plunging using a surge block and (2) jetting using a purpose-built jetting tool. This activity must be concluded with the collection of a one-litre representative water sample obtained from the return flow during development.

The Drilling Contractor will be remunerated for borehole development on a time basis against the work time rate bided in the Schedule of Rates. It will be the responsibility of the Hydrogeological Consultant to verify and certify any claim by the contractor in this regard.

(p) Borehole Disinfection

Also known as sterilisation, the purpose hereof is to disinfect the borehole and its contents of any bacteria, and particularly coliform bacteria, introduced into the borehole during drilling operations. Sterilisation is most readily accomplished by introducing chlorine (or chlorine-yielding compounds) into the borehole. On completion of development the borehole shall be disinfected with a solution of 0.5 kg of HTH mixed in 250 litres of water.

The Drilling Contractor will be remunerated for borehole disinfection per single application at the cost (which shall include for all materials supplied and used and the time spent) bided for one such application as set out in the Schedule of Rates.

(q) Borehole Protection

This entails sealing the borehole from the introduction of foreign material directly through the casing. It is often achieved by means of a lockable cap fitted to the borehole collar. Experience suggests, however, that a 3 to 4 mm thick steel plate (lid) welded onto the borehole collar ensures better security. Of course, it will later be required of the Testing Contractor to remove this plate in order to gain access to the borehole for testing purposes. In order to provide the Hydrogeological Consultant with ready access to the borehole for water level measuring purposes, it is required that a small hole be drilled in the lid. This hole must be furnished with a tamper-proof plug such as a “dead-end” threaded into a water pipe connector welded on the hole. The final diameter of the hole providing access to the borehole must be sufficient to allow a “normal” dipmeter probe to pass through it. It is considered that a diameter of at least 10 mm and not more than 20 mm is suitable for this purpose.

The Drilling Contractor will be remunerated for borehole protection per single installation at the cost (which shall include for all materials supplied and used and the time spent) bided for one such installation as set out in the Schedule of Rates.

(r) Borehole Marking (in the field)

For all Community Water Supply and Sanitation projects, the borehole identifying number will be provided by the Directorate Geohydrology of the DWAF, or else by the Implementing Authority. It is the responsibility of the Hydrogeological Consultant to ensure that the correct number is provided to the contractor for this purpose. The consultant will be responsible for securing a batch of numbers and pass these on to the Contractor as is deemed fit and appropriate.

The activity itself represents marking the borehole by: (1) script-welding its assigned and unique identifying number onto the lid of the borehole and (2) planting a concrete block with dimensions of 200 mm x 200 mm x 200 mm - (also bearing the number of the borehole) in the ground at a distance of five metres to the north of the borehole.

The Drilling Contractor will be remunerated for borehole marking per single application at the cost (which shall include for all materials supplied and used and the time spent) bided for one such application as set out in the Schedule of Rates.

(s) Site Finishing

The activities associated with this task must include the repair of construction scars on the work site resulting from drilling activities, as well as the general clean-up of the site of waste materials, debris and oil spills. The latter must be shovelled over and worked into the ground wherever possible. The Drilling Contractor will be remunerated for site finishing per single application at the cost (which shall include for the time spent) bided for one such application as set out in the Schedule of Rates.

H2.7 Data Recording and Reporting

It is imperative that a detailed and accurate record of all information arising from the borehole drilling activity be recorded with care and diligence. Much of this information can be collected by the Drilling Contractor. It must be recorded on a driller's log such as is provided in Section 6. This must be kept current and available for inspection at request of the Hydrogeological Consultant. The contractor will include the cost of these activities as a single sum per borehole in the Schedule of Rates. It will be the responsibility of the Hydrogeological Consultant to verify receipt of this information prior to certifying a claim by the Drilling Contractor in this regard. The following items of information represent the minimum number of parameters, which must be monitored and recorded by the contractor.

(a) Penetration Rate

This represents the time taken, as measured with a stopwatch, to advance the borehole a specific depth (generally one metre). In broad terms, the harder the rock formation the slower the penetration rate and vice versa. Since the hardness (or softness) of a rock formation is a characteristic which can be associated with specific rock types, an accurate record of penetration rates serves as an additional means of identifying changes in rock type with depth. Although a slow penetration rate may be of hydrogeological significance, it can also be caused by worn equipment or difficult drilling conditions such as are presented by loose, unstable material. The measured penetration rate must, therefore, not include time spent overcoming technical problems or remedying mechanical breakdowns encountered during drilling.

(b) Formation Sampling and Description

This entails a brief description of the visual appearance of the rock formation being drilled. It is performed by inspection of the rock chips (also known as drill cuttings) brought to the surface during drilling. A spade full of chips should be collected at the mouth of the borehole for each metre drilled. The "samples" should be placed as sequential piles in ordered rows at a cleared and visible location away from the immediate area of activity and traffic around the borehole being drilled. If instructed by the Hydrogeologist a fist full of each sample should be bagged in individual plastic bags labelled with the borehole number and sample depth. These samples should be kept at a pre-arranged location for description at a later stage. The samples should be described by a suitably qualified geotechnician/earth scientist according to the guidelines set out by the South African Institute for Engineering Geologists (SAIEG, 1 995). The driller's description must include, as a minimum, a note on the colour of the formation, the relative size of the drill cuttings and, if possible, an identification of the possible rock type.

(c) Water Strike Depth

This information relates to the depth at which any water, including seepage, is encountered in a borehole during drilling. It is possible for water to be encountered at more than one depth as drilling advances. The depth(s) at which water is encountered must be determined to an accuracy of one metre and recorded. It is also necessary to record the nature of the formation associated with the water strike(s). This may, for example, be represented by a single fracture of fissure, a system of such features or a noticeably softer or more weathered horizon.

(d) Blow Yield

Water which is encountered in a borehole being drilled by the rotary air percussion method is blown out of the borehole during drilling. The amount of water being blown from the borehole provides an indication of the possible yield of the borehole. The blow yield must not be guestimated, even though a fair visual estimate based on experience can often be provided by the Drilling Contractor. Also, since water may be encountered at more than depth, it is necessary to measure and record the blow yield immediately following each water strike. These measurements should be repeated as drilling continues until constancy is revealed by at least four consecutive

measurements each representing a further metre of drilling.

The accurate measurement of the blow yield does not require the use of sophisticated equipment. The most acceptable and preferred means of measurement is provided by the use of a 90° V-notch weir, details of which are provided in Drawing 8, Section 6. The use of a 90° V-notch weir entails channelling all of the water being blown from the borehole through such a weir, which has been placed level in the channel (or ditch) leading the return water flow away from the borehole being drilled. The height of water flowing over the notch is translated into a flow rate or yield as indicated in Table H-2. It is imperative that the height of water flowing over the weir is not measured within the notch itself but at and from a position in the weir upstream and to the side of the notch and which corresponds exactly in height to the inverted apex of the notch.

Table H-2 Tabulation of height vs flow rate data for a 90° V-notch weir

HEIGHT (mm)	FLOW RATE (l/s)	FLOW RATE (l/s) FOR				
		HEIGHT + 2 mm	HEIGHT + 4 mm	HEIGHT + 5 mm	HEIGHT + 6 mm	HEIGHT + 8 mm
10	0,01			0,04		
20	0,08			0,15		
30	0,23			0,04		
40	0,47	0,53	0,60		0,67	0,74
50	0,80	0,88	0,97		1,06	1,16
60	1,26	1,36	1,47		1,59	1,71
70	1,84	1,97	2,11		2,25	2,40
80	2,55	2,71	2,88		3,05	3,23
90	3,41	3,60	3,80		4,00	4,21
100	4,42	4,64	4,87		5,10	5,34
110	5,59	5,85	6,11		6,38	6,65
120	6,94	7,22	7,,52		7,83	8,14
130	8,46	8,79	9,12		9,46	9,81
140	10,17	10,53	10,90		11,28	11,67
150	12,07	12,47	12,88		13,30	13,73
160	14,17	14,61	15,07		15,53	16,00
170	16,48	16,96	17,46		17,96	18,48
180	19,00	19,53	20,07		20,62	21,18
190	21,75	22,32	22,91		23,50	24,11
200	24,72	25,34	25,97		26,61	27,26
210	27,92	28,59	29,26		29,95	30,65
220	31,36	32,08	32,80		33,54	34,28
230	35,04	35,81	36,58		37,37	38,17
240	38,97	39,79	40,62		41,45	42,30

Another common but less preferred method in use is the “drum-and-stopwatch” technique. This requires only that all of the water blown from the borehole be channelled to a point where the concentrated flow can be collected in an open-ended drum of known volume (generally 20 litres) and the time taken to fill the container measured with a stopwatch for accuracy. Dividing the full volume of the drum (in litres) by the time taken (in seconds) to fill the drum gives the blow yield in litres per second (/Is). It is cautioned, however, that this method is only effective and reliable for yields of less than approximately 2 I/s.

(e) Groundwater Rest Level

This parameter represents the depth, as measured from surface, to the level of standing water in the borehole. This measurement can be made with the use of any liquid level indicating device, the most common of which is an electrical contact meter (dip-meter). The groundwater level measurement must be accurate to the nearest 0,01 metre (one centimetre). The measurement reference point, which may either be the ground level or the collar of the

borehole, should be identified against the measured depth value. The latter reference point will generally be represented by the top of the casing with which the borehole has been equipped. In these instances, it will also be necessary to measure the height by which the casing extends above ground level. If the borehole is drilled and completed on the same day, then a groundwater level measurement must be taken immediately before leaving the site.

If drilling and borehole construction extends over two or more days, then such measurements must also be taken before daily drilling activities commence, provided that water, including seepage water, has been encountered in the borehole. A groundwater level measurement must be referenced to the date on which it is made and, if more than one such measurement is made per day, then also the time of each such measurement must be recorded.

H2.8 Down-the-hole Loss of Equipment

Drilling equipment, materials or tools may be lost down a borehole during drilling operations. Since this can often result in the irretrievable loss of a borehole, substantial efforts are generally employed by the Drilling Contractor to recover such material. This activity is also referred to as fishing. The Hydrogeological Consultant will afford the contractor every opportunity and reasonable time to fish for lost equipment. The Drilling Contractor must, in turn, keep the Hydrogeological Consultant informed of progress and the likelihood of success in this regard. The contractor will have no claim against any other party for any losses incurred in this regard. Further, the fate of a borehole which cannot be continued or completed due to the presence of lost equipment, materials or tools therein will finally be decided by the Hydrogeological Consultant. It may either be declared successful or lost.

(a) Borehole declared Successful

Circumstances under which a borehole may be declared successful include: (1) the borehole has encountered significant water or is drilled for resource monitoring purposes, (2) pumping equipment can be installed to an acceptable depth in the borehole and (3) the lost equipment does not pose a threat to the present and future quality of the groundwater. In the event that a borehole is declared successful despite the irrecoverable loss of drilling equipment, materials or tools therein, then the exact nature and position of the equipment lost in the borehole must be recorded and appear in relevant project documentation. The Drilling Contractor will be remunerated for a borehole declared successful under these circumstances on the same basis as for any other successfully completed borehole.

(b) Borehole declared Lost

Although the circumstances under which a borehole will be declared lost are varied and diverse, the criteria which should apply include: (1) the borehole has not yet encountered water irrespective of the depth reached, (2) the borehole has not yet encountered water even though the geological and hydrogeological indications are positive, (3) the borehole has encountered water but in too small a quantity to warrant the installation of pumping equipment, yet the geological and hydrogeological indications are positive that more water can be obtained, and (4) the borehole has encountered a significant quantity of water but the lost equipment prevents the installation of pumping equipment to an acceptable depth. In the event that a borehole is declared lost under these circumstances, then the criteria set out in subsection 5-6.1 for further actions, payment, etc, shall apply.

H2.9 Down-the-hole Borehole Measurements

This activity is more commonly referred to as borehole logging. The measurements are carried out by manually or mechanically lowering tools or instruments of various technical sophistication down a borehole. Borehole logging is useful in instances where:
(1) surface geophysical data need to be calibrated against subsurface information,
(2) geological information for a borehole is absent or suspect,
(3) borehole construction information is absent or suspect, and
(4) information is required for the proper and effective stimulation by various means of borehole yields.

Although down-the-hole borehole measurements may be made at any time during the construction of a borehole, they are generally performed on completion thereof. In the event that such measurements need to be made before completion of the borehole, then the Drilling Contractor will be required to cease operations and facilitate access to the borehole for the duration of such activity. The contractor will be able to recover the cost of production loss (incurred for the duration that drilling activities are interrupted) against the rate specified for standing time in the Schedule of Rates, any claim in this regard to be verified and certified by the Hydrogeological Consultant.

The nature of the information to be gathered dictates the technique(s) to be used and the time required to complete these measurements. Basic information such as the depth of the borehole and the amount of steel casing installed therein is readily and cheaply determined by means of straightforward and uncomplicated instruments. Geophysical and geological information, on the other hand, requires the more costly application of specialized borehole logging instrumentation including the use of video cameras. It is required that the more sophisticated of these investigations: (1) be motivated to and authorised by the Implementing Authority prior to their execution and (2) be applied judiciously at the discretion of the Hydrogeological Consultant.

(a) Borehole Construction Information

This includes information such as: (1) the depth and diameter(s) of the borehole, (2) the depth and diameter(s) of casing installed in the borehole and (3) the integrity of the casing. This information can be used to verify/check the documented construction details of a borehole. The depth of a borehole can be determined simply by plumbing with a weighted line. A calliper tool can be used to determine borehole and casing diameters and the length and integrity of the casing string. The length of steel casing can also be determined more simply with a sensor operating on electromagnetic principles.

(b) Geological Information

This covers aspects such as identifying: (1) the nature of different rock formations occurring at various depths within a borehole on the basis of their geophysical (geo-electrical) properties and (2) the presence and size of fractures and/or fissures intersected by a borehole. This information can be used to: (1) calibrate surface geophysical data obtained from similar geological environments, (2) determine the optimum depth at which a borehole pump should be installed in a borehole and (3) direct the application of borehole yield stimulation activities such as hydro fracturing.

(c) Hydrogeological Information

This includes information such as (1) the porosity of rock formations and (2) the rate of groundwater movement. These measurements generally require the use of more sophisticated and costly instrumentation.

(d) Hydro-chemical Information

This covers aspects such as the variation of groundwater quality with depth in a borehole. These measurements again require the use of generally more sophisticated instrumentation. Not quite in the same vein as these measurements, yet of probably greater importance, is the representative water sample obtained from a borehole during its development (subsection 5-6.o).

The water sample must be submitted to a laboratory as soon as is reasonably possible for chemical analysis of: (1) the electrical conductivity, (2) the nitrate concentration and (3) the fluoride concentration. These results will provide an early indication of whether the groundwater quality is acceptable or not and, if not, whether test pumping is warranted.

H2.10 Rehabilitation of Existing Boreholes

The scope of this work may vary from the basic cleaning out and redevelopment of an existing borehole to the recovery of casing, the reaming and subsequent reinstallation of casing. As far as it is possible, the nature of the rehabilitation required in each individual instance should be identified prior to undertaking this activity since this will indicate which equipment will most suitably complete the task. This is illustrated in the following examples. The straight-forward cleaning out and redevelopment of an existing borehole can readily be accomplished using a rotary air percussion drilling rig. On the other hand, the recovery of casing and the removal of unnatural material from a borehole are more readily accomplished using a cable tool (jumper) drilling rig.

It is particularly helpful to both the Hydrogeological Consultant and the Drilling Contractor undertaking the rehabilitation to know as much about the original construction (e.g. depth, diameter, length and type of casing, geology, etc) of the borehole as possible. This is impossible in instances where original records are lost, deficient, vague or poorly documented/archived. It will be required in such cases to obtain as much information as can reasonably be gleaned from an in situ inspection of the borehole. This might include such basic measurements as plumbing the current depth of the borehole and establishing, by means of a casing detector, the length of casing

(steel) installed, to carrying out various of the more sophisticated down-the-hole borehole measurements and observations (subsection 5-9).

The rehabilitation of an existing borehole should preferably be carried out under the supervision of the Hydrogeological Consultant. In any event, the execution of such work will be subject to the same degree of data collection and record keeping as is required of a new borehole.

The Drilling Contractor will be remunerated for this service on the basis of the rates bided in the Schedule of Rates. It will be expected of the contractor to have assessed the potential technical risks involved with such work and, as a consequence, the contractor shall have no claim against any other party for the loss of equipment, materials or tools incurred in the course of such work.

H2.11 Final Acceptance

The Hydrogeological Consultant shall accept a successfully finished water supply or monitoring borehole by certifying the Drilling Contractor's invoice for such borehole as true and correct for payment by the Implementing Authority. At this stage, the Hydrogeological Consultant will have established that all aspects pertaining to the work and the final product meet, at least, those of the various criteria and requirements set out above which have been imposed.

PART J: TEST PUMPING OF BOREHOLES

J1 PROJECT SPECIFICATIONS

J1.1 Application and Status

These Project Specifications describe the Works to be executed by the Contractor under the Contract and set out the requirements for the Works as well as the minimum standards to be achieved by the Contractor.

These Project Specifications are supplementary to the Standard Specifications for Test Pumping of Boreholes (hereinafter referred to as the "Standard Specifications") and set out variations, additions and omissions to the Standard Specifications and as such, shall be construed and interpreted in conjunction with such Standard Specifications.

These Project Specifications set out the variations, additions and omissions which shall be applicable in the Contract to the Standard Specifications and should there exist any discrepancy, conflict or inconsistency between any part of the Standard Specifications and any part of these Project Specifications, the provisions of these Project Specifications shall take precedence and prevail in the Contract.

J1.2 Interpretation

Wherever reference is made within the Standard Specifications and/or these Project Specifications to the "Geohydrological Consultant" and/or the "geohydrologist" and/or the "Consultant", it shall be deemed to mean the "Engineer" as defined in the Conditions of Contract.

Wherever reference (if any) is made within the Standard Specifications and/or these Project Specifications to the "Implementing Agent", the "Department of Agriculture", "LDA" or any party not being the "Employer", the Contractor, the Engineer, the Geohydrological Consultant o the Consultant, it shall be deemed to mean the Employer.

J1.3 Purpose and Scope

The Contract is for the test pumping of boreholes at agricultural projects and all Works associated therewith in accordance with:

(1) the Information Provided to Tenderer as per Section 1 of this document,

(2) any further detailed instructions as may be ordered by the Employer or the Hydrogeological Consultant.

The borehole test pumping services are required for a period of three years from the date of award and no specific quantity of work has been identified. The Contract is based on a Schedule of Rates with payment to be made on the basis of measured quantities and the tendered rates.

The Scope of Work to be actually executed by the Contractor will be as decided by the Engineer in consultation with the Employer, as provided for in the Conditions of Contract. The work to be carried out during the currency of the contract may be given as separate batches (referred to in the Conditions of Contract as "Works Segments"). Each Works Segment to be executed by the Contractor will, from time to time during the currency of the Contract, be detailed in a written instruction by the Consulting Hydrogeologist as provided for in the Conditions of Contract.

J1.4 Test Pumping Equipment and Materials

The Contractor shall provide all labour, transport, plant, tools, materials and appurtenances, and shall perform all work necessary to satisfactorily complete the Works in accordance with the Standard Specifications.

The Contractor shall furnish all the particulars requested in Section 3-0 (Sub-section 5-0) of this document. The capacity shall be sufficient to cope with the work as specified for the project. It shall be kept at all times in full working order and good repair. The Hydrogeological Consultant and I or the Client will have the right to inspect the equipment to be used prior to the commencement of the Works. If the Hydrogeological Consultant and / or Employer considers that the plant in use on the site of the Works is in any way inefficient or inadequate in capacity,

he shall have the right to instruct the Contractor to put such equipment in order within seven days or, alternatively, to remove such plant and replace it with other plant or equipment which he considers necessary to meet the requirements of the Contract.

In the event of breach by the Contractor of this requirement, the Hydrogeological Consultant reserves the right to recommend to the Client to terminate the Contract in accordance with the provisions of Sub-Clause 58.(1)(b)(vi) of the Conditions of Contract. Equipment brought onto the site may not be removed there from without the written permission of the Hydrogeological Consultant. It will be the responsibility of the Contractor to arrive on site with all staff, equipment, materials and chemicals required to complete the work without interruption.

Where existing equipped boreholes are to be tested, the Contractor must provide suitable plant to enable the installed pumping equipment to be removed and reinstalled. This includes the removal and reinstallation of hand pumps, wind pumps and motorised pumps and may also include the recovery of existing pumping equipment that was previously dropped into a borehole.

J1.5 Data Recording and Reporting

In addition to a site diary stating daily activities, borehole and pump test data as well as installed borehole equipment is to be recorded on forms 1, 5a to 5f and 6 and 6a which are included in Section 6 of the Contract Documents.

J1.6 Measurement and Payment

The Contractor appointed under this contract is considered to be an expert in his field and is expected to organise and carry out the required duties in an expert manner. Problems encountered during testing will be overcome entirely within the framework of these Specifications and the Schedule of Rates, and no claims for extra payments will be entertained for problems foreshadowed in the Specification or due to limitations imposed by this Specification.

The measurement of and payment for all materials and work provided by the Contractor in the course of the project will be according to the criteria as set out and are applicable in respect of such as are variously specified in the Standard Specifications and hereunder:

J1.6-1 Standing Time

This will cover periods when the test pumping rig and crew or, if more than one rig and crew are fielded, when all rigs and crews are idle waiting for decisions by the Consultant where those decisions or whose presence is required before the commencement or continuation of the work. Under no circumstances will standing time be payable for any delays other than those incurred by the Hydrogeological Consultant’s decisions. Except only for abnormal weather conditions as provided for in Sub-Clause 47.(2) of the Conditions of Contract, no standing time will be payable due to inclement weather or prevention of access to a site by the Contractor or Hydrogeological Consultant due to inclement weather. Further, no standing time will be payable to the Contractor in respect of any periods where the Contractor is not engaged in the execution of the Works as a result of the Consultant having failed to issue an instruction to commence with the works of any Works Segment and there being no other Contract Works on which the Contractor is required to carry out work.

J1.6-2. Inter-hole Moves

Payment for inter-hole moves up to a distance of ten kilometres shall be made at the unit rate tendered for in the Schedule of Rates. Inter-hole moves in excess of ten kilometres shall be remunerated for the first ten kilometres at the tendered unit rate and, for each full kilometre thereafter, at the rate per kilometre tendered in the Schedule of Rates.

J1.6-3. Removal of Existing Pumping Equipment

This rate shall cover the removal of existing pumping equipment in a borehole to be tested. Payment for removal up to an installed depth of 50 m shall be made at the unit rate tendered for in the Schedule of Rates. Installed depths in excess of 50 m shall be remunerated for the first 50 m at the tendered unit rate and, for each full metre thereafter, at the rate per metre tendered in the Schedule of Rates.

J1.6-4. Re-installation of Existing Pumping Equipment

This rate shall cover the re-installation of existing pumping equipment in a borehole following test pumping of the borehole. Payment for installation up to a depth of 50 m shall be made at the unit rate tendered for in the Schedule of Rates. Re-installation depths in excess of 50 m shall be remunerated for the first 50 m at the tendered unit rate and, for each full metre thereafter, at the rate per metre tendered in the Schedule of Rates. The existing pumping equipment shall be reinstalled and left in working condition as it was found before removal unless the Contractor is instructed otherwise by the Hydrogeological Consultant.

J2 STANDARD SPECIFICATIONS FOR THE TEST PUMPING OF BOREHOLES

J2.1 Purpose and Scope

The efficient operation and utilisation of a borehole requires insight into and an awareness of its productivity and that of the groundwater resource from which it draws water. Such insight and awareness is provided by borehole testing. This activity, which is also known as test pumping, provides a means of identifying potential constraints on the performance of a borehole and on the exploitation of the groundwater resource. The recognition and understanding of these constraints promotes the proper, judicious and optimum exploitation of the groundwater resource. Ignorance and disregard of these constraints can lead, at best, to the uneconomical operation of the borehole and, at worst, to over-exploitation of the resource.

The Test Pumping Contractor (Testing Contractor) may be required to test either:
(1) newly drilled boreholes which have not yet been equipped, (2) existing “older” boreholes which may or may not already be equipped with pumping installations, or (3) a mixture of the aforementioned.

Test pumping serves two primary objectives. The first of these is an assessment of the productive capacity (yield potential) of the borehole. The second objective addresses the productivity of the groundwater resource. These objectives are met by various types of borehole tests performed separately and often sequentially. These are identified as:
(1) the slug test, (2) the calibration test, (3) the stepped discharge test, (4) the constant discharge test and (5) the recovery test. Factors determining which of these tests must be performed include: (1) the potential yield of the borehole and (2) the amount of water which it will be required to supply.

(a) The Slug Test

The slug test provides a rapid means of assessing the potential yield of especially low yielding (less than 0.5 ℓ/s) boreholes (Vivier et. al, 1995). The results may indicate whether it is feasible and warranted to perform other tests on the borehole. As with any of the other tests, a slug test can be executed in any borehole and not necessarily only newly drilled boreholes.

The test involves measuring the water level response in a borehole to the rapid displacement of water therein. This displacement might cause either: (1) a rise in water level as would result from the introduction of a slug below the rest water level or (2) a drop in water level, as would be caused by the removal of a quantity of water from the borehole.

In instances where a slug is introduced, the water level will recede to its original level. The sudden removal of a quantity of water from the borehole will cause the water level to rise to its original level. The rate of recession or rise provides an indication of the yield of the borehole. In qualitative terms the more rapid this is, the higher the potential yield of the borehole.

(b) The Calibration Test

A calibration test requires that water be pumped from the borehole at three or more different rates over short (15 minutes), sequential periods of time. The response of the water level to each known pumping rate is measured and recorded. The calibration test provides a means of assessing the yield potential of borehole according to the magnitude of the water level decline associated with each pumping rate. This information is used to select appropriate pumping rates at which to perform a stepped discharge test or a pumping rate at which to perform a constant discharge test.

(c) The Stepped Discharge Test

Also known as a step drawdown test, it is performed to assess the productivity of a borehole. It also serves to more clearly define the optimum yield at which the borehole can be subjected to constant discharge testing if required. The test involves pumping the borehole at three or more sequentially higher pumping rates each maintained for an equal length of time, generally not less than 60 minutes and seldom longer than 120 minutes. The magnitude of the water level drawdown in the borehole in response to each of these pumping rates must be measured and recorded in accordance with a prescribed time schedule. The actual pumping rate maintained during each “step” must also be measured and recorded. As a rule, the rate of water level recovery for a period of time immediately following the period of pumping should also be monitored according to the same time schedule as during pumping.

(d) The Constant Discharge Test

A constant discharge test is performed to assess the productivity of the aquifer according to its response to the abstraction of water. This response can be analysed to provide information in regard to the hydraulic properties of the groundwater system and arrive at an optimum yield for the medium to long-term utilisation of the borehole. This test entails pumping the borehole at a single pumping rate, which is kept constant for an extended period of time. The test duration shall not be less than 12 hours and, in some instances, might last up to 72 hours or more. The duration is generally determined by the importance, which is attached to the borehole and groundwater resource not only in terms of its yield potential but also in terms of its intended application.

The pumping rate is set at a yield, which it is considered the borehole and groundwater system will be able to maintain for the entire planned duration of the test and, in the process, utilising better than 70 per cent but not exhausting the available drawdown. It is critical that the pumping rate during the entire duration of the test be kept as constant as possible. The drawdown in water level in the borehole during the course of the test is again measured and recorded according to a prescribed time schedule. In the case of this type of test, it is imperative that water level measurements be made during the recovery period following the end of pumping.

(e) The Recovery Test

This test provides an indication of the ability of a borehole and groundwater system to recover from the stress of abstraction. This ability can again be analysed to provide information with regard to the hydraulic properties of the groundwater system and arrive at an optimum yield for the medium to long-term utilisation of the borehole. Although referred to as a test, it rather represents a period of monitoring activity following a period of pumping. The rate at which the water level in the tested borehole (or any other borehole affected by the abstraction) recovers towards its starting level (the groundwater rest level before pumping started) is monitored in this period. The duration of this monitoring is generally equal to that of the preceding period of pumping unless the rate of recovery is sufficiently rapid so that the starting water level is reached in a shorter period of time.

J2.2 General Approach and Methodology

As mentioned in subsection 4-I, various factors determine which type of pumping test (or tests) might need to be performed. It is the responsibility of the Hydrogeological Consultant to formulate a test pumping schedule for each successful borehole.

All project-related test pumping activities will also be carried out under the direct supervision of the Hydrogeological Consultant. The execution of a pumping test in accordance with established scientific protocols must be undertaken by a suitably experienced and equipped Testing Contractor. It will be the task of the Hydrogeological Consultant to evaluate and analyse the data, draw conclusions with regard to the productivity of the borehole and the aquifer, and make recommendations with regard to a suitable operating schedule for the borehole and the optimum exploitation of the groundwater resource.

Both the practical and analytical aspects of test pumping benefit greatly from prior information regarding the borehole and the aquifer which it taps into. This information is gleaned during the drilling and the construction of the borehole. It includes knowledge of: (1) the amount of water blown out of the borehole during drilling operations, (2) the depth(s) at which water was struck in the borehole, (3) the construction of the borehole in terms of the setting of especially perforated (slotted) casing and (4) the nature of the rock formation at the depth(s) where water was struck. This information should be communicated to the Testing Contractor by the Hydrogeological Consultant. If not, the contractor has the right to request and expect to receive this information from the Hydrogeological

Consultant prior to the testing of any borehole.
The Testing Contractor must keep a full record of the test pumping which was undertaken and provide this on completion of the test. This record must include the following basic information: (1) the depth to water level before the start of testing, (2) the depth at which the test pump was installed, (3) the type, make and model of the test pump used, (4) the pumping rate as measured at regular intervals during the test and (5) the water level in the borehole as measured according to a prescribed time schedule both during and after pumping, (6) the depth to which steel casing was installed in the borehole. The contractor must be sufficiently well equipped to gather this information with acceptable accuracy.

J2.3 Equipment and Materials

These represent the test unit and all ancillary equipment and materials needed to accurately and efficiently perform borehole testing. Details are provided as follows.

(a) Test Unit

The test unit must comprise a positive displacement (PD) type pump element and a pump head driven by a motor fitted with an accelerator, gearbox and clutch. The unit must be in good working order and capable of maintaining a minimum of 72 hours of continuous operation.

The unit must be capable of delivering water at a rate in excess of the expected maximum yield of the borehole to be tested.

(b) Discharge Piping

This comprises both the pipe (rising main or pump column) which brings the water to surface and the pipe (discharge hose) used to lead the pumped water away from the borehole being tested. The Testing Contractor must supply sufficient rising main to set the test pump at a depth of at least 100 m below the surface. It may, however, be required under certain circumstances to set the test pump at a greater depth in the borehole. The pump column must be of uniform diameter throughout. The contractor must also provide discharge piping in the amount of at least 50 m. This must be free of leaks for its entire length. It may again, under certain circumstances, be required to discharge the pumped water at a point further away than 50 m (possibly in excess of 300 m) from the borehole being tested. In such instances, a similar procedure to that discussed above in regard to the rising main must be followed.

(c) Discharge Measuring Equipment/Instrumentation

This must be adequate to accurately measure the pumping rate within the range of yields expected from successful project boreholes. If volumetric methods are used, a stopwatch for measuring time to an accuracy of at least one-tenth of a second is required. The full capacity of each container must be determined accurately. The contractor must also ensure that a container stands level when it is being used for discharge measurements. Guidelines regarding the use of different size containers for volumetric discharge rate measurements in specific yield ranges are given below:

YIELD RANGE	**CONTAINER SIZE**
Less than 2 ℓ/s	20 ℓ
2 ℓ/s to 5 ℓ/s	50 ℓ
5 ℓ/s to 20 ℓ/s	210 ℓ
20 ℓ/s 30 ℓ/s	500 ℓ

It is recognized that some water leakage will generally occur especially at the borehead during pumping. This is acceptable provided that: (1) such leakage does not interfere with any water level monitoring and (2) the total amount of leakage to the end of the discharge pipeline does not exceed one per cent of the pumping rate as measured at the end of this pipeline.

(d) Water Level Measuring Equipment/Instrumentation

The contractor must provide at least three water level measuring devices which are each capable of providing an accuracy of at least 0,01 m (10 mm) and are of sufficient length to match the pump installation depth. If ungraduated electrical contact meters (dip-meters) are used for this purpose, each such instrument must be

equipped with a measuring tape of an acceptable length and approved standard and which is graduated to an accuracy of at least 0,01 m (10 mm). These instruments must be in good working order and number at least one spare for each two on site

The contractor must further provide conduit tubing of sufficient length to match the pump installation depth. The diameter of this tube must be large enough (minimum 15 mm) to allow free movement of the dip-meter probe and cable therein. The tubing must be made of material strong enough to withstand reasonable pressure on its sidewall which might cause a constriction. The tube must be open at its lower end to allow the free entrance of water into the tube. This is facilitated by perforating the bottom section of the conduit tube sidewall. Precautions should also be taken to prevent the dip-meter probe from passing beyond the bottom end of the conduit tube and, as a result of entanglement, not able to be withdrawn.

(e) Other Materials

No pumping test should commence without field data sheets on which to record all data and information relevant to the test pumping activities in an acceptable format. The examples provided in Section 6 of the Contract Documents indicate the format and level of detail which is required of these data sheets. The contractor must also provide backup measuring equipment and instrumentation which is immediately available to replace any similar item which may become damaged or broken during the course of the test such that measurements are no longer accurate or reliable.

J2.4 Arrival-on-site Actions

The contractor must firstly establish whether the borehole is equipped or not. If so, the contractor will be required to: (1) remove the equipment taking care not to damage either it or the installation, (2) inspect the equipment for defects and (3) note down all particulars regarding the equipment and the installation. The latter includes but should not be limited to the manufacture and type of pump (and motor if motorised), the depth to which the pump was installed, the power rating of the motor and the diameter, length and quantity of pump column sections. The contractor must next establish whether there are any other boreholes in the vicinity of that to be tested. If so, then the following information must be gathered and recorded for each: (1) the straight-line distance (in metres) between each such borehole and that to be tested, (2) whether the borehole is equipped, open or sealed and, if equipped (3) whether the installation is operational or not. Depending on the degree of access allowed by such a borehole, the contractor must establish whether there is water in the borehole and if so, measure and record: (1) the depth to the groundwater rest level, (2) the height of the borehole collar above ground level and where possible also (3) the depth of the borehole.

The final activities to be carried out prior to the actual installation of the test pump into the borehole to be tested must involve measuring and recording: (1) the diameter of the borehole, (2) the depth of the borehole as determined by means of a weighted line or plumb bob and (3) the depth to the groundwater rest level in the borehole, again referenced to a date.

An example of a field data sheet for recording the above information is presented in Section 6 of the Contract Documents. Payment for this work shall be incorporated into that for data recording.

J2.5 Test Pump Installation

The conduit tube should be attached and secured to the first section of pump column behind the pump element and the test pump installed to the required depth, attaching and securing the conduit tube to the riser main every 2 to 3 m.

The Testing Contractor will be remunerated for the installation of a test pump per linear metre of depth installed at the rate tendered as set out in the Schedule of Rates. The rate tendered for this activity shall also apply to the withdrawal of the test pump from the borehole on completion of all testing activities.

J2.6 Equipment Set-up and pre-test Actions

Where possible, the discharge pipe must be laid out in a downhill direction from the borehole to be tested unless this will take it in the direction of or past another borehole located in the vicinity of that to be tested. In such instances, lay the discharge pipe out in a downhill direction which will take its furthest end as far as possible away

from any other borehole in the vicinity.

In field situations where the terrain is extremely flat, the length of the discharge pipe must be extended from 50 m to at least 300 m if any possibility exists that the discharged water may infiltrate to the groundwater resource within the radius of influence of the test. A final decision in this regard must be made by the Hydrogeological Consultant and communicated to the contractor. The dip-meter should be inserted into the installed conduit tube and run down this tube to the bottom to make sure that it passes freely along the full length of the tube. If the dip-meter used is not graduated to an accuracy of 0,01 m, mark the position on the dip-meter cable where it indicates the depth to the groundwater rest level and attach the end of the graduated tape at this position on the cable ensuring that the zero mark of the graduated tape corresponds exactly to this mark. Slowly lower the dip-meter and graduated tape down the conduit tube, in the process securing the tape to the dip-meter cable every 2 to 3 m. Ensure that there is no slack between each point where the tape is secured to the dip-meter cable. Also make sure that the dip-meter cable and graduated tape combination passes freely along the full length of the conduit tube.

The Testing Contractor shall be remunerated for this work per set-up at the rate tendered for one such activity as set out in the Schedule of Rates.

J2.7 Final pre-test Measurements

The Contractor shall ensure that all the basic information required on the field data sheet has been collected and recorded as completely as possible. The basic information data entry fields can be used as a checklist for information to be measured/collected and recorded. The Contractor shall not guess at any information which has not been measured.

Payment for this work shall be incorporated into that for data recording and reporting.

J2.8 Data Recording

(a) Discharge Measurements

The measurement of discharge (yield or pumping rate) must be consistently accurate and reliable. The method of measurement must be appropriate to meet this requirement. Where volumetric calculation methods are applied, time will be measured using a stopwatch and the container volume must be accurately known. The volumetrically measured yields recorded on the field data sheets must be based on the average obtained from a set of three sequential measurements.

(b) Water Level Measurements

The periodicity of water level measurements for each type of test are given in the data recording forms in Section 6 of this document. This information must be filled in as a record of all data collection activities carried out for a pumping test. The type of water level measurement values required to be recorded on the field data sheet are the actual (or true) drawdown values. These represent measurements which reflect the depth of the water level below the groundwater rest level depth, i.e. which already take into account the groundwater rest level depth below the reference measuring point. It should be noted that the more basic type of measurement which reports the depth of the dynamic water level as a distance below the reference measuring point, ie which combines the depth of the water level below the groundwater rest level depth and the depth of the groundwater rest level below the reference measuring point, gives only an apparent (or false) drawdown value. All water level measurements must be measured to an accuracy of at least 0,01 m (10 mm). The water level data must be plotted on the semi-logarithmic graph paper provided with each set of field data sheets. The plotting of these data must take place as the test proceeds, i.e. each water level measurement must be plotted on the graph as soon as possible after it was measured. The field data sheets and accompanying water level graphs must be shown to any authorised supervisory personnel at request and will be up-to-date at the time of such request.

(c) Other Information

The Testing Contractor must also record any extraordinary observations made during the test. These may include: (1) changes in the colour of the discharged water, (2) changes in the turbidity of the discharged water, (3) the presence of air in the discharged water, and (4) rainfall events which occur during a test. Remuneration for all data collection and recording activities by the Contractor in the course of a pumping test shall be incorporated into an hourly rate as set out in the Schedule of Rates.

J2.9 Groundwater Sampling

Sampling for Macro-Element Analysis

A water sample should be collected from the end of the discharge pipeline no sooner than 15 minutes before the scheduled end of a pumping test whether this be of a calibration, stepped discharge or constant discharge nature. This will ensure that a water sample is collected in case testing does not proceed to include either one or both of the latter two types of test. The standard amount of sample normally collected is in a clean, sterilised plastic bottle of capacity 240 millilitre or greater and equipped with a watertight screw-on cap. This is the standard issue sample bottle provided by the DWAF. Depending on the analysing laboratory's requirements, however, a sample of up to two litres in volume may have to be collected. The Hydrogeological Consultant will advise on this matter in instances where the contractor is required to collect samples, in which case the consultant will provide ampoules containing preservative chemicals if required. All other materials such as sample bottles, tie-on labels and sample custody are to be provided by the contractor.

(a) Sampling Procedure

Wash hands thoroughly and rinse the sample bottle three times with the water to be sampled, i.e. that being pumped from the borehole. Fill the bottle so that a space of five to ten millimetres is left at the top. Add the preservative as instructed in (b).

(b) Sample Preservation

Gently tap the bottom of an ampoule of preservative on a firm surface so that all the chemical flows to below the constriction. Hold the ampoule firmly upright with thumbs placed either side of the constriction, flex off the neck, turn the ampoule upside down and place it in the bottle together with the broken-off neckpiece. Firmly screw on the cap of the sample bottle after rinsing it well with water from the borehole. Shake the capped sampled bottle well. Caution should be exercised when handling the preservative since this chemical is poisonous.

(c) Sample Custody

Place the sample bottle in a cooler or icebox and keep it stored under chilled conditions. The water sample will be collected by the Hydrogeological Consultant.

J2.10 Aborted Tests and Breakdowns

The Hydrogeological Consultant may at any stage during the execution of a pumping test request the Testing Contractor to abort a test if, in the opinion of the consultant, continuation of the test is not in the interests of the project. Factors which might contribute to such a decision by the Hydrogeological Consultant are: (1) sufficient data having been collected for an adequate scientific evaluation thereof, (2) the execution of the test not meeting project criteria and requirements (such as for constancy of yield, accuracy of yield measurements or accuracy of water level measurements, sufficiency of discharge line length, etc) or (3) a mechanical breakdown occurring during pumping which causes a test to be interrupted or aborted.

(a) Tests aborted due to sufficiency off data

In such instances, the Testing Contractor will be remunerated for the actual duration of testing (including recovery testing) at the hourly rates set out in the Schedule of Rates.

(b) Tests aborted due to incorrect execution

The Testing Contractor will be required to remedy the cause(s) for an abort decision by the Hydrogeological Consultant. The test shall be restarted, as if it were the first attempt, after the water level has recovered to within five per cent of the pre-test rest water level or the contractor is instructed thereto by the Hydrogeological Consultant. The Testing Contractor shall not be entitled to remuneration for any test which is aborted under these circumstances irrespective of the time elapsed up to receipt of the instruction to abort.

(c) Tests aborted due to breakdowns

The following procedures are recommended when a mechanical breakdown occurs during pumping which causes a test to be interrupted or aborted.

Calibration Test:
Start immediately with the measurement and recording of the water level recovery rate according to the periodicity given in reporting forms. Irrespective of how long after the start of pumping the breakdown occurs or how rapidly the breakdown can be fixed, continue with water level recovery measurements until the water level is within five per cent of the pre-test rest water level or, at the discretion of the Hydrogeological Consultant, may be discontinued. Restart the calibration test as if it is the first attempt. The Testing Contractor shall not be entitled to remuneration for a calibration test which is aborted under such circumstances.

Stepped discharge test:
Record the time of the breakdown and start immediately with the measurement and recording of the water level recovery according to the periodicity given in reporting forms. If the breakdown occurs during the first or second steps of the test, continue with water level recovery measurements until the water level is within five per cent of the start rest water level and then restart the stepped discharge test as if it is the first attempt. If the breakdown occurs during the third step of the test, can be fixed and the pump restarted to produce the same yield (as before the breakdown) within five minutes of the breakdown occurring, continue with the test at this yield after measuring and recording the water level immediately before restarting the pump. Only one such breakdown event is allowed.

If a second breakdown occurs, proceed as described for a first step breakdown. If the breakdown occurs during the fourth or later step of the test, can be fixed and the pump restarted to produce the same yield (as before the breakdown) within five minutes of the breakdown occurring, continue with the test and complete it at this yield after measuring and recording the water level immediately before restarting the pump. If a breakdown at this stage cannot be fixed within five minutes, continue with water level recovery measurements as if the test has been fully completed. The Contractor shall not be entitled to remuneration for a stepped discharge test, which is aborted:

(1) within the first or second step, or (2) within the third step and can not be restarted within the time allowed for repair.

Constant discharge test:
Note the time of the breakdown and start immediately with the measurement and recording of the water level recovery according to the periodicity given in reporting forms. If the breakdown occurs within the first two hours after the start of pumping, continue with water level recovery measurements until the water level is within five per cent of the pre-test (start) rest water level and then restart the test. If the breakdown occurs later than two hours into the test, can be fixed and the pump restarted to produce the same yield as before the breakdown within the time periods (after the breakdown occurring) given in Table 5-10-1, continue with the test at this yield after measuring and recording the water level immediately before restarting the pump.

If the breakdown cannot be fixed and the pump started within one hour of the breakdown occurring, continue with water level recovery measurements until the water level is within five per cent of the pre-test rest water level and then restart the constant discharge test as if it is the first attempt unless the following condition has been met. If the breakdown occurs after approximately 80 per cent of the planned duration of the constant discharge test has been successfully completed, continue with water level recovery measurements as if the test has been fully completed. The allowable elapsed time (in hours) in regard to selected constant discharge test total durations in order for this specification to be acceptable is given in Table 5-10-2.

Table J1 Period allowed for breakdown repair and continuation of testing

TIME BREAKDOWN AFTER START	PERIOD ALLOWED FOR REPAIR OF TEST
2 hours to 4 hours	6 minutes
4 hours to 6 hours	12 minutes
6 hours to 8 hrs hours	18 minutes
8 hours to 10 hours	24 minutes
10 hours to 12 hours	30 minutes
12 hours to 14 hours	36 minutes
14 hours to 16 hours	42 minutes

16 hours to 18 hours	48 minutes
18 hours to 20 hours	54 minutes
Longer than 20hrs	60 minutes

Table J2 Period after which a constant discharge test may be considered completed in the event of a breakdown

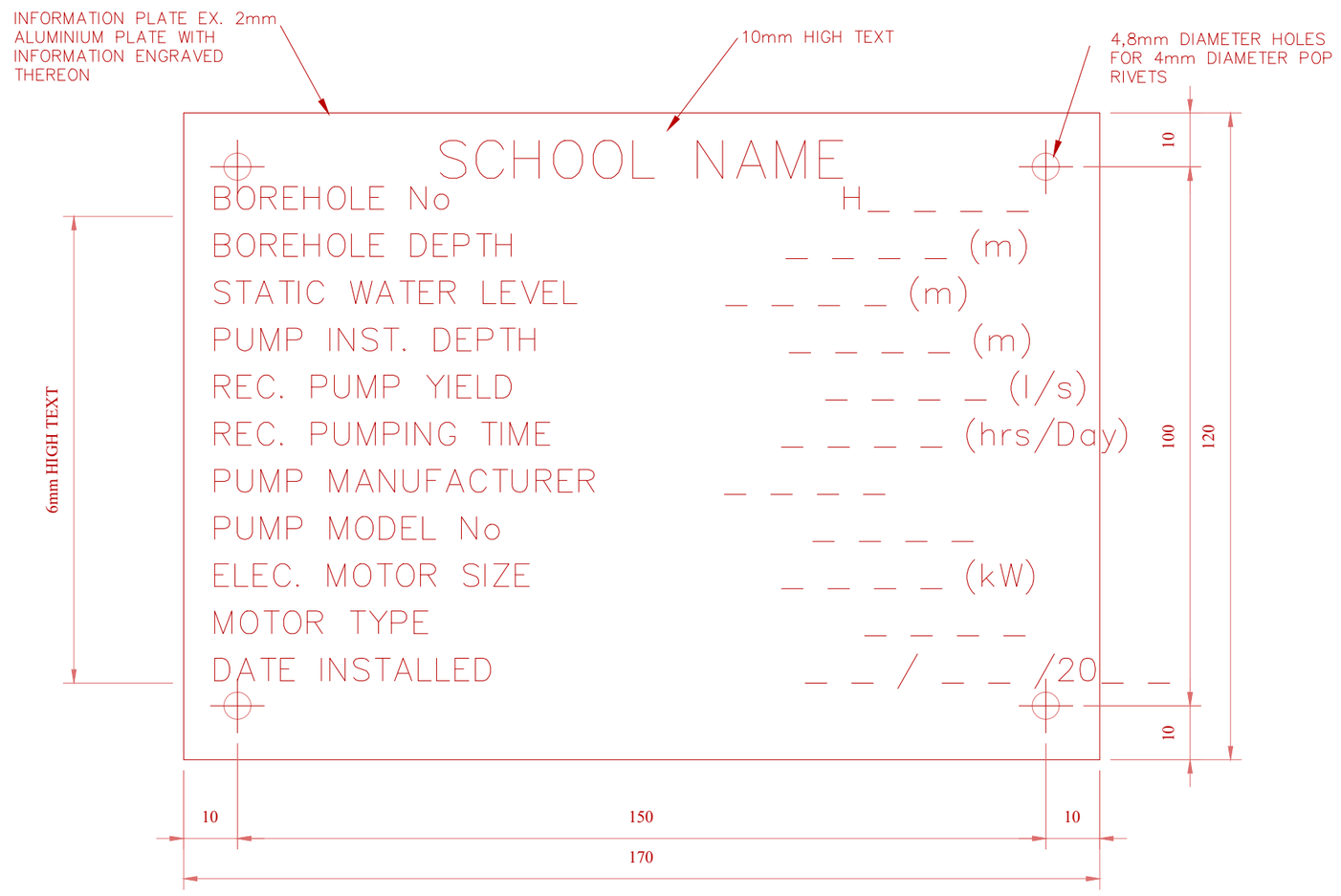
CONSTANT DISCHARGE TEST DURATION	ALLOWABLE TIME ELAPSED TO BREAKDOWN
24 hours	20 hours (equivalent to 80% of total time)
36 hours	30 hours (equivalent to 83% of total time)
48 hours	38 hours (equivalent to 79% of total time)
72 hours	60 hours (equivalent to 77% of total time)

The Testing Contractor shall not be entitled to remuneration for a constant discharge test, which is aborted under circumstances, which preclude its restart within the time allowable for repair and continuation. The contractor will, however, be entitled to remuneration for a constant discharge test which is aborted after approximately 80 per cent of the planned duration of the constant discharge test (refer to Table 5-10-1) has been successfully completed, payment being made for the actual duration of the test (including the recovery test) at the hourly rates set out in the Schedule of Rates.

PART C 4: SITE INFORMATION

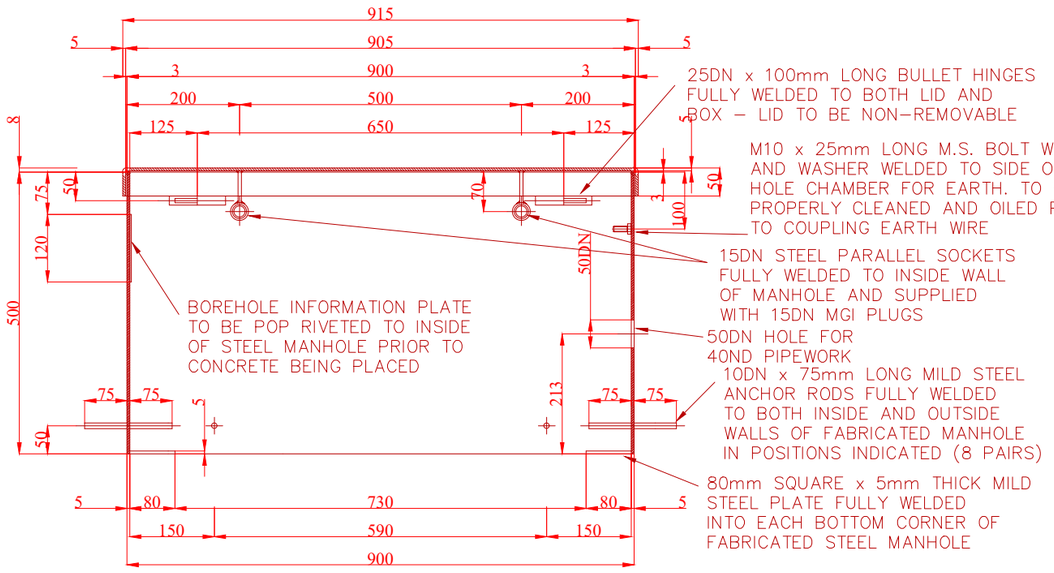
C4.1: LOCALITY PLAN

(The Site Information will be issued during the stage with the request to give quotations for a specific project.)



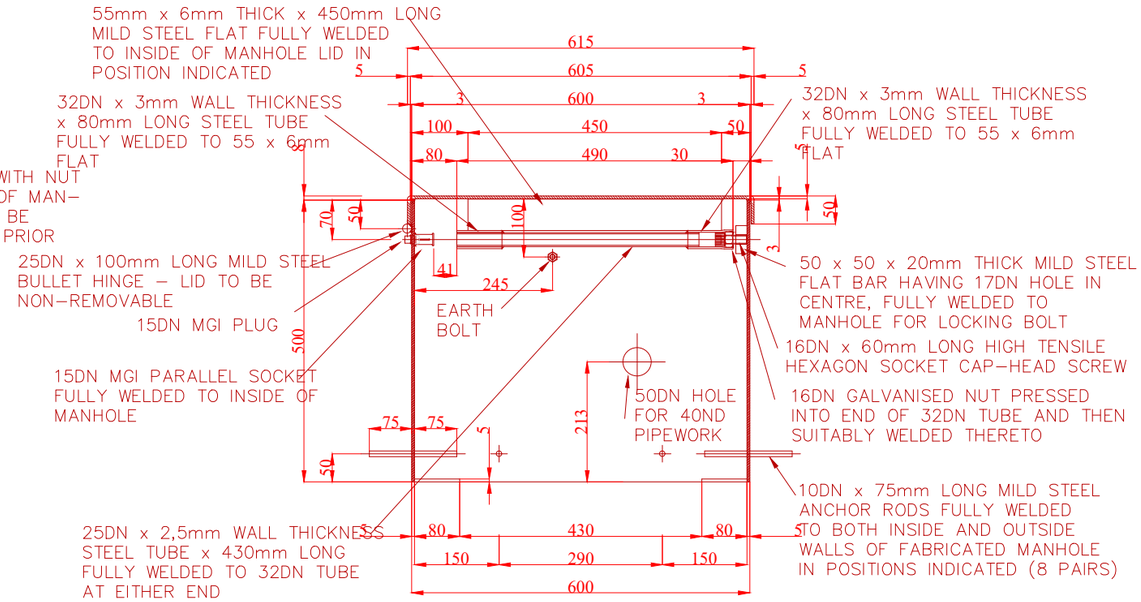
INFORMATION PLATE

	CLIENT	IMPLEMENTING AGENT	PROJECT	AMENDMENTS	DATE	DRAWING TITLE			SCALE:	DATE:
				TENDER DRAWINGS		INFORMATION PLATE DETAIL	DESIGNED	T.M	1–1	NOV 2018
							DRAWN	S.C		
							CHECKED	K.E	DRAWING No: 1701321–TY–04	REV: 0
							APPROVED			



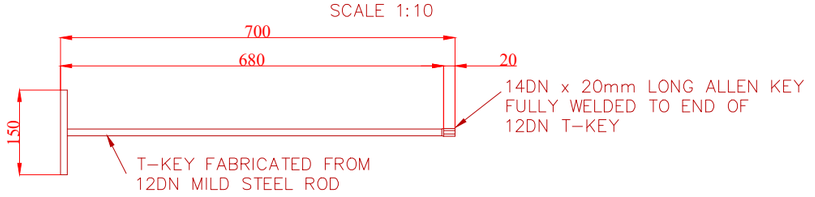
SECTION A–A

SCALE 1:10



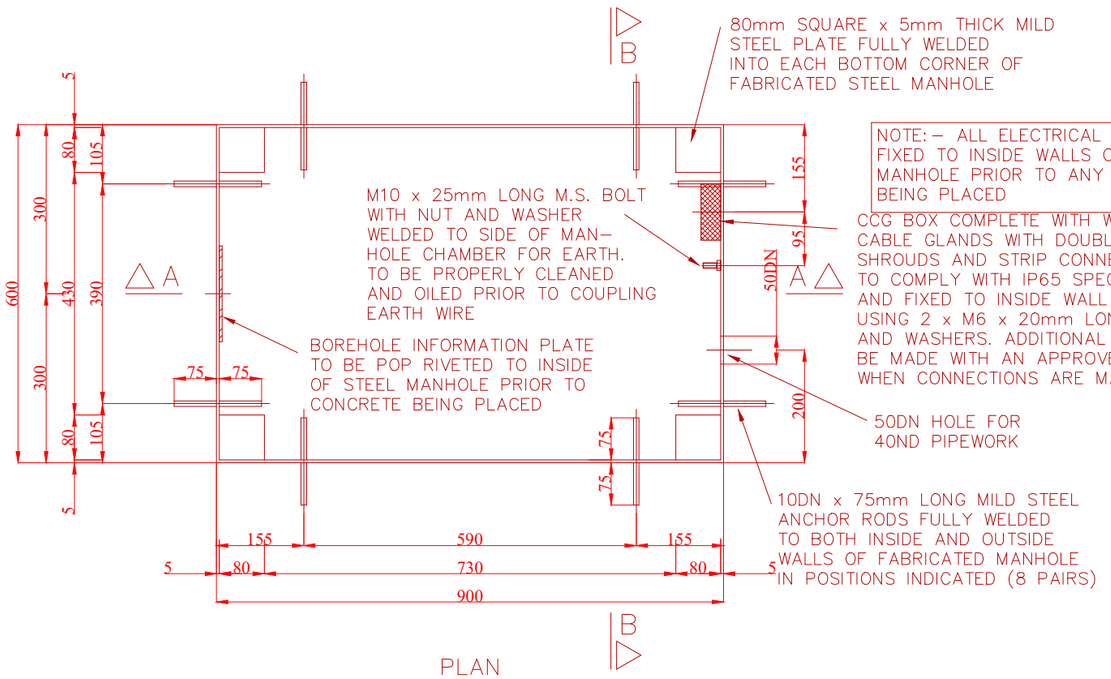
SECTION B–B

SCALE 1:10



LOCKING DEVICE KEY

SCALE 1:10



PLAN

SCALE 1:10

GENERAL NOTES

I) 900 x 600 x 500mm DEEP MANHOLE TO BE FABRICATED FROM 5mm THICK HOT ROLLED SHEET METAL AND ALL WELDED CONSTRUCTION

ii) BULLET HINGES TO BE INSTALLED WITH COPPER GREASE AND TO BE FITTED IN OPPOSING DIRECTIONS SO THAT MAN–HOLE LID MAY NOT BE REMOVED

iii) THIS PLAN TO BE READ IN CONJUNCTION WITH PLAN No 0310A.20

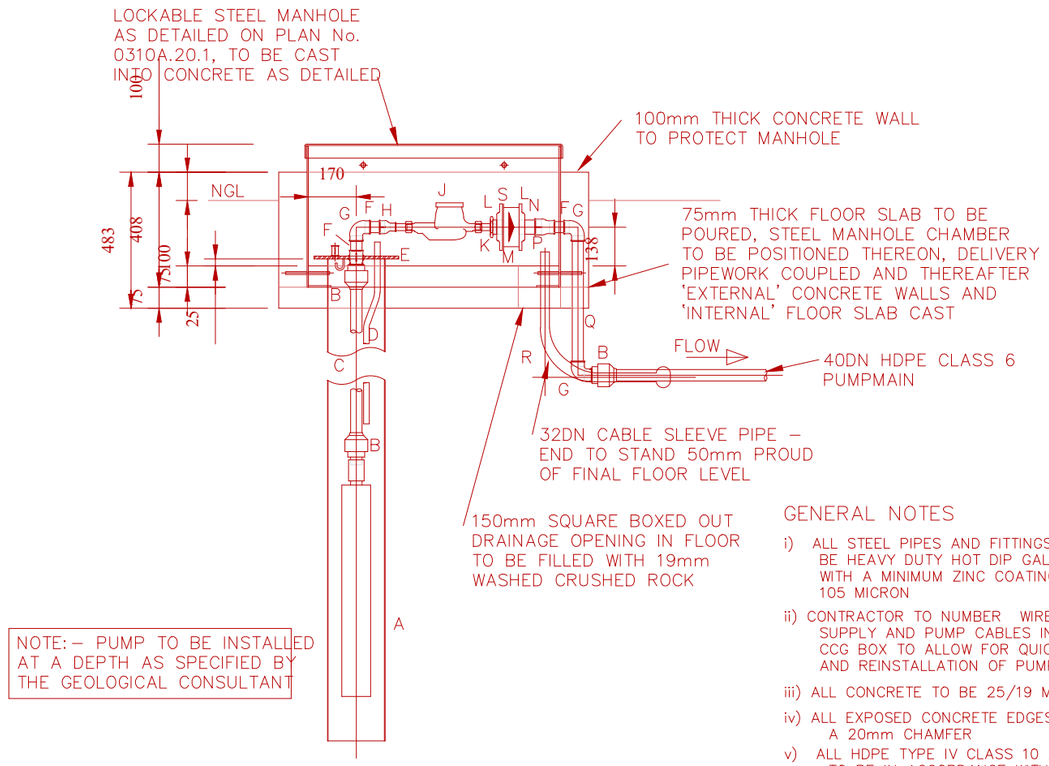
CORROSION PROTECTION:

i) PAINTWORK IN WORKSHOP:
EPOXY COATING SHALL BE AN APPROVED TWO COMPONENT, POLYAMIDE CURED PIPE COATING. IT SHALL BE APPLIED IN THE WORKSHOP BY SPRAYING TO A FINAL THICKNESS OF NOT LESS THAN 300 MICRON.

ii) PAINTWORK AFTER ERECTION:
a) AFTER INSTALLATION ANY CHIPS OR SCRATCH MARKS SHALL BE MADE GOOD ON SITE WITH BRUSH APPLIED EPOXY PAINT.
b) AN INTERIM LAYER ACCORDING TO SABS 681 TYPE I SHALL BE APPLIED TO A FINAL THICKNESS OF 25 MICRON.

iii) FINAL FINISHING LAYER:
A FINAL ENAMEL LAYER ACCORDING TO SABS 630 GRADE 1 SHALL BE APPLIED WITHIN 24 HOURS AFTER THE INTERIM LAYER HAS BEEN APPLIED, TO A FINAL THICKNESS OF 25 MICRON (COLOUR TO BE DARK ADMIRALTY GREY)

CLIENT	IMPLEMENTING AGENT	PROJECT	AMENDMENTS	DATE	DRAWING TITLE			SCALE:	DATE:
			TENDER DRAWINGS		LOCKABLE FABRICATED STEEL MANHOLE FOR SUBMERSIBLE PUMP	DESIGNED	T.M	1–10	NOV 2018
						DRAWN	S.C		
						CHECKED	K.E	DRAWING No: 1701321–TY–05	REV: 0
						APPROVED			



GENERAL NOTES

i) ALL STEEL PIPES AND FITTINGS TO BE HEAVY DUTY HOT DIP GALVANISED WITH A MINIMUM ZINC COATING OF 105 MICRON

ii) CONTRACTOR TO NUMBER WIRES OF SUPPLY AND PUMP CABLES INSIDE CCG BOX TO ALLOW FOR QUICK REMOVAL AND REINSTALLATION OF PUMP

iii) ALL CONCRETE TO BE 25/19 MPa

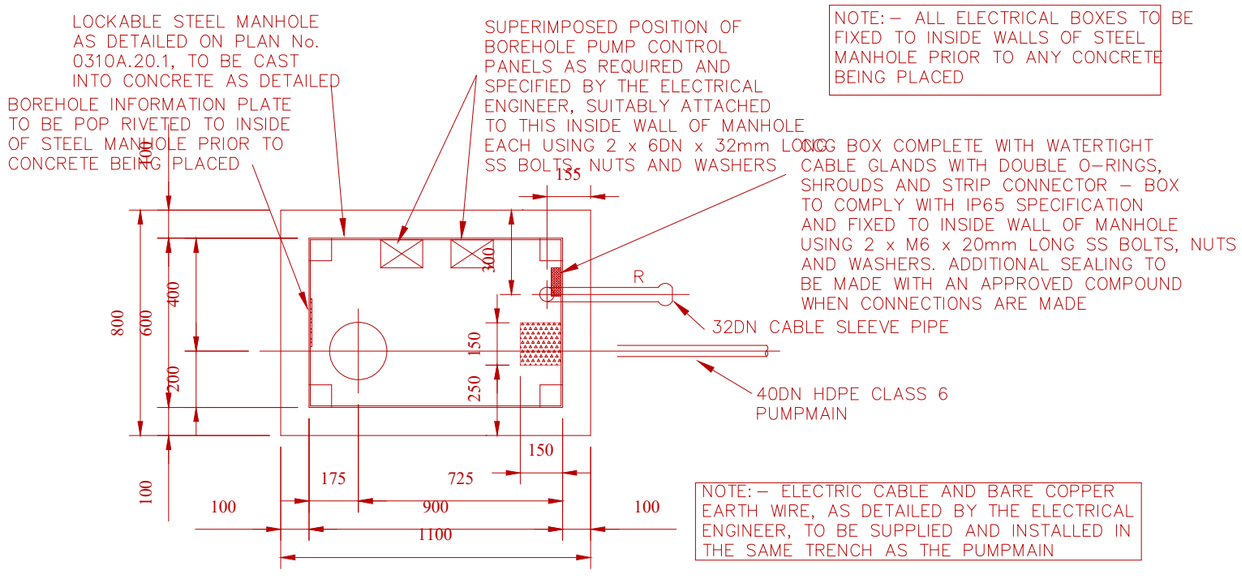
iv) ALL EXPOSED CONCRETE EDGES TO HAVE A 20mm CHAMFER

v) ALL HDPE TYPE IV CLASS 10 AND 6 PIPING TO BE IN ACCORDANCE WITH SABS ISO 4427 SPECIFICATIONS

vi) THIS PLAN TO BE READ IN CONJUNCTION WITH PLAN No 0310A.20.1

SCHEDULE OF FITTINGS

REF	NB	DESCRIPTION	WALL 't' mm	FLANGE DRILLING	TREATMENT: GALVANISED	TREATMENT: EPOXY RESIN PAINT	QTY
A	40	'CRI S4S 1–18' OR SIMILAR STAINLESS STEEL TYPE SUBMERSIBLE B/H PUMP WITH FRANKLIN MOTOR COMPLETE WITH IN–LINE NON–RETURN VALVE, PVC COOLING TUBE, LEAD–OUT CABLE AND 8 DN NYLON SUPPORT ROPE (AS SUPPLIED BY HOWDEN PUMPS)					1set
B	40	'PLASSON' MALE ADAPTOR AND RELEVANT REDUCER					3no
C	40	HDPE TYPE IV CLASS 10 RISER COLUMN (LENGTH ACCORDING TO GEOLOGICAL CONSULTANTS SPECIFICATION) (PROVISIONAL)					30m
D	20	HDPE TYPE IV CLASS 10 DIPPER TUBE STRAPPED TO 40 DN RISER COLUMN AT 1,5 m CENTRES WITH CABLE TIES AND PROTRUDING 100 mm THROUGH BOREHOLE COVER PLATE INTO MANHOLE (PROVISIONAL)					30m
E		300 mm DIA x 10 mm THICK MILD STEEL BOREHOLE BASE PLATE HAVING 1 x 40 DN STEEL PARALLEL SOCKET WELDED CENTRALLY INTO CENTRE OF PLATE, 1 x 20 DN STEEL SOCKET WELDED OVER 20 DN HOLE IN PLATE FOR ELECTRIC CABLE (COMPLETE WITH CABLE GLAND) AND 1 x 20 DN HOLE IN PLATE FOR 20 DN DIP TUBE TO PASS THROUGH. 20 DN HOLES TO BE AT 180 DEGREES TO ONE ANOTHER AND ON A 50 mm RADIUS FROM THE CENTRE OF THE PLATE. A 20 mm DIA EYE FABRICATED FROM 6 mm M.S. ROD (FOR SECURING SUPPORT ROPE) IS TO BE WELDED TO THE UNDERSIDE OF THE BASE PLATE				*	1set
F	40	MGI BARREL NIPPLE			*		3no
G	40	90 DEGREE MGI FEMALE ELBOW			*		3no
H	40 x 25	40 x 25 DN MGI REDUCING SOCKET			*		1no
J	25	'INVENSYS' TYPE M–N MULTIJET–FANWHEEL–METER, WET DIAL DOMESTIC WATER METER COMPLETE WITH 25 DN TAILS FITTED TO BOTH UPSTREAM AND DOWNSTREAM SIDES OF METER					1set
K	50 x 25	50 x 25 DN MGI REDUCING BUSH			*		1no
L	50	GALVANISED STEEL SCREWED BOSS FLANGE		SABS 10	*		2no
M	50	'CHECK–RITE' WAFER PATTERN NON–RETURN VALVE SUITABLE FOR 1 000 kPa PRESSURE. NOTE: VALVE TO FIT BETWEEN SABS 1123 TABLE 1000/4 FLANGES		SABS 10		*	1no
N	50	MGI BARREL NIPPLE			*		1no
P	50 x 40	50 x 40 DN MGI RECUDING SOCKET			*		1no
Q	40	465 mm LONG GALVANISED STEEL PIPE THREADED BOTH ENDS	4.5		*		1no
R	32	90 DEGREE uPVC LONG RADIUS BEND					1no
S	–	165mm DIA x4,5 mm THICK 316 SS ORIFICE PLATE OF TYPE: " SHARP EDGED AT FLOW ENTRANCE WITH A C–VALUE = 0.61". – ORIFICE DIA ACCORDING TO ENGINEERS INSTRUCTION		SABS 10			1no



NOTE:– ALL ELECTRICAL BOXES TO BE FIXED TO INSIDE WALLS OF STEEL MANHOLE PRIOR TO ANY CONCRETE BEING PLACED

CORROSION PROTECTION:

i) PAINTWORK IN WORKSHOP:
EPOXY COATING SHALL BE AN APPROVED TWO COMPONENT, POLYAMIDE CURED PIPE COATING. IT SHALL BE APPLIED IN THE WORKSHOP BY SPRAYING TO A FINAL THICKNESS OF NOT LESS THAN 300 MICRON.

ii) PAINTWORK AFTER ERECTION:
a) AFTER INSTALLATION ANY CHIPS OR SCRATCH MARKS SHALL BE MADE GOOD ON SITE WITH BRUSH APPLIED EPOXY PAINT.
b) AN INTERIM LAYER ACCORDING TO SABS 681 TYPE I SHALL BE APPLIED TO A FINAL THICKNESS OF 25 MICRON.

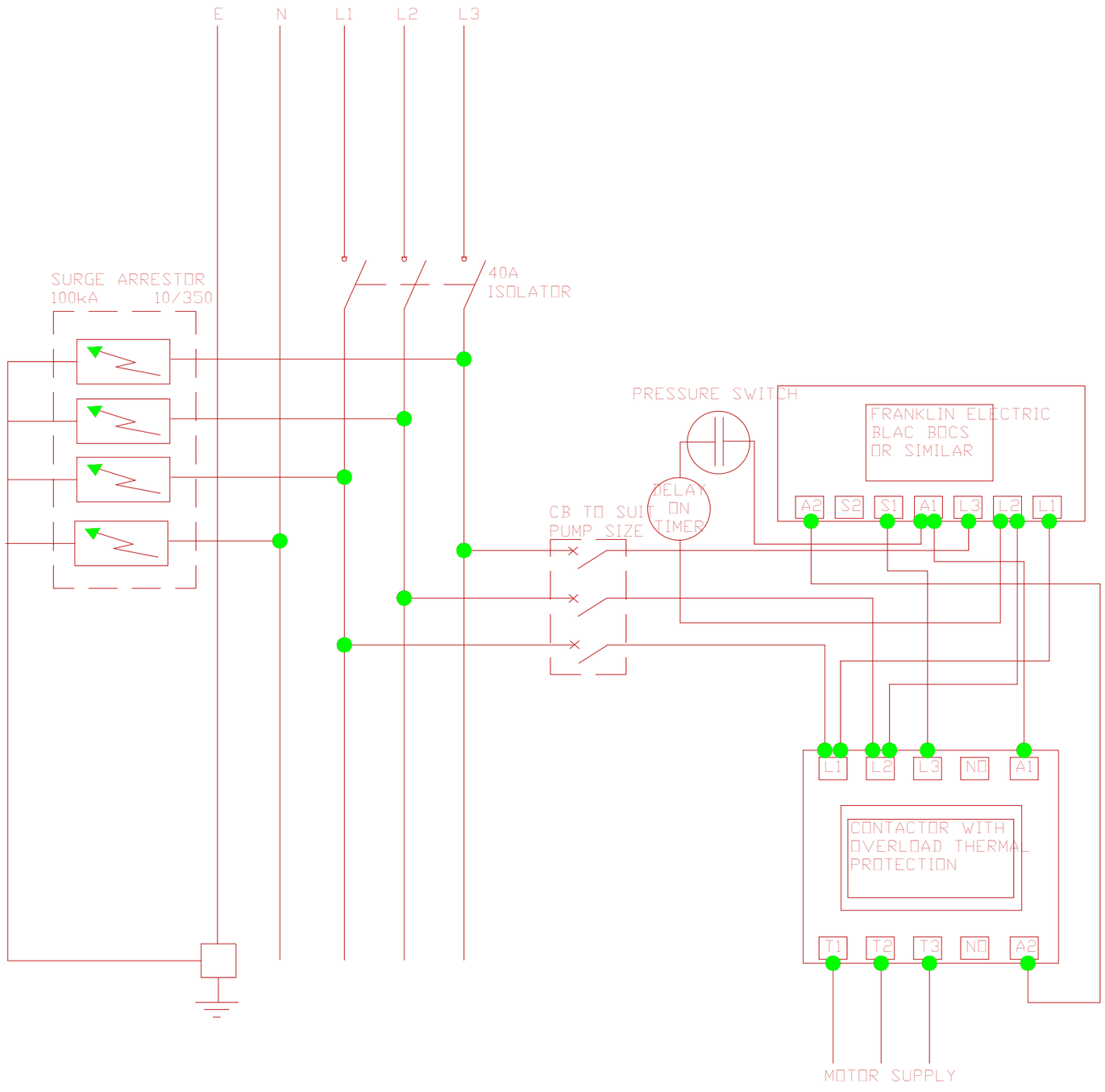
iii) FINAL FINISHING LAYER:
A FINAL ENAMEL LAYER ACCORDING TO SABS 630 GRADE 1 SHALL BE APPLIED WITHIN 24 HOURS AFTER THE INTERIM LAYER HAS BEEN APPLIED, TO A FINAL THICKNESS OF 25 MICRON (COLOUR TO BE DARK ADMIRALTY GREY)

THIS PLAN TO BE READ IN CONJUNCTION WITH SABS 0299 PART 5 OF 2002 AND SABS 0299 PART 6 OF 1998

CLIENT	IMPLEMENTING AGENT	PROJECT	AMENDMENTS	DATE
			TENDER DRAWINGS	

DRAWING TITLE: LOCKABLE MANHOLE AND SUBMERSIBLE PUMP DETAILS

DESIGNED	T.M	SCALE: 1–10	DATE: NOV 2018
DRAWN	S.C		
CHECKED	K.E	DRAWING No: 1701321–TY–06	REV: 0
APPROVED			



	CLIENT	IMPLEMENTING AGENT	PROJECT	AMENDMENTS	DATE	DRAWING TITLE			SCALE:	DATE:
			ASIDI–SCHOOL–WATER&SANITATION	TENDER DRAWINGS		PUMP CONTROL PANEL TYPICAL LAYOUT DIAGRAM	DESIGNED	T.M	N.T.S	NOV 2018
							DRAWN	S.C		
							CHECKED	K.E	DRAWING No: 1701321–TY–07	REV: 0
							APPROVED			

SBD 3.2

PRICING SCHEDULE – NON-FIRM PRICES (PURCHASES)

NOTE: PRICE ADJUSTMENTS WILL BE ALLOWED AT THE PERIODS AND TIMES SPECIFIED IN THE BIDDING DOCUMENTS.

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

Name of Bidder……Bid number……

Closing Time 11:00 …… Closing date……..

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

ITEM NO.	QUANTITY	DESCRIPTION	BID PRICE IN RSA CURRENCY **(ALL APPLICABLE TAXES INCLUDED)

- Required by: ……
- At: ……..……
- Brand and model ……..……
-
- Country of origin ……..……
- Does the offer comply with the specification(s)? *YES/NO
- If not to specification, indicate deviation(s) ……
- Period required for delivery ……
- Delivery: *Firm/not firm

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

*Delete if not applicable

SBD 3.2

PRICE ADJUSTMENTS

A NON-FIRM PRICES SUBJECT TO ESCALATION

1. IN CASES OF PERIOD CONTRACTS, NON FIRM PRICES WILL BE ADJUSTED (LOADED) WITH THE ASSESSED CONTRACT PRICE ADJUSTMENTS IMPLICIT IN NON FIRM PRICES WHEN CALCULATING THE COMPARATIVE PRICES

2. IN THIS CATEGORY PRICE ESCALATIONS WILL ONLY BE CONSIDERED IN TERMS OF THE FOLLOWING FORMULA:

$$Pa = (1-V)Pt\left(D1\frac{R1t}{R1o} + D2\frac{R2t}{R2o} + D3\frac{R3t}{R3o} + D4\frac{R4t}{R4o} \right) + VPt$$

Where:

Pa	=	The new escalated price to be calculated.
(1-V)Pt	=	85% of the original bid price. **Note that Pt must always be the original bid price and not an escalated price.**
D1, D2..	=	Each factor of the bid price eg. labour, transport, clothing, footwear, etc. The total of the various factors D1, D2…etc. must add up to 100%.
R1t, R2t……	=	Index figure obtained from new index (depends on the number of factors used).
R1o, R2o	=	Index figure at time of bidding.
VPt	=	15% of the original bid price. This portion of the bid price remains firm i.e. it is not subject to any price escalations.

3. The following index/indices must be used to calculate your bid price:

STATS SA Statistical Release

Index *P0141 Table A* Dated *2024/05* Index *P0151.1 Table 4* Dated *2024/05* Index… Dated…

Index *P0151.1 Table 2* Dated *2024/05* Index *P0142.1 Table 1* Dated *2024/05* Index… Dated…

4. FURNISH A BREAKDOWN OF YOUR PRICE IN TERMS OF ABOVE-MENTIONED FORMULA. THE TOTAL OF THE VARIOUS FACTORS MUST ADD UP TO 100%.

FACTOR (D1, D2 etc. eg. Labour, transport etc.)	PERCENTAGE OF BID PRICE
D1 Labour	25
D2 Contractors Equipment	15
D3 Material	45
D4 Fuel	15
Total	100

SBD 3.2

B PRICES SUBJECT TO RATE OF EXCHANGE VARIATIONS

1. Please furnish full particulars of your financial institution, state the currencies used in the conversion of the prices of the items to South African currency, which portion of the price is subject to rate of exchange variations and the amounts remitted abroad.

PARTICULARS OF FINANCIAL INSTITUTION	ITEM NO	PRICE	CURRENCY	RATE	PORTION OF PRICE SUBJECT TO ROE	AMOUNT IN FOREIGN CURRENCY REMITTED ABROAD
				ZAR=		
				ZAR=		
				ZAR=		
				ZAR=		
				ZAR=		
				ZAR=		

2. Adjustments for rate of exchange variations during the contract period will be calculated by using the average monthly exchange rates as issued by your commercial bank for the periods indicated hereunder: (Proof from bank required)

AVERAGE MONTHLY EXCHANGE RATES FOR THE PERIOD:	DATE DOCUMENTATION MUST BE SUBMITTED TO THIS OFFICE	DATE FROM WHICH NEW CALCULATED PRICES WILL BECOME EFFECTIVE	DATE UNTIL WHICH NEW CALCULATED PRICE WILL BE EFFECTIVE