



KING CETSHWAYO DISTRICT MUNICIPALITY TENDER DOCUMENT

TENDER REFERENCE: KCDM-06-2023

TENDER FOR THE APPOINTMENT OF A PANEL OF MECHANICAL AND ELECTRICAL CONTRACTORS FOR PROVISION OF MAINTENANCE SERVICES (WATER AND SANITATION) FOR PERIOD OF 3 YEARS ENDING IN JUNE 2026 IN KING CETSHWAYO DISTRICT MUNICIPALITY

TENDER CLOSING:

TUESDAY, 20 JUNE 2023 @12H00

The Tender Document (which includes the Form of Offer and Acceptance) completed in all respects, plus any additional supporting documentation required, must be addressed to the Municipal Manager and submitted in a sealed envelope with the legal name and address of the Tenderer, the Tender No. and tender title as well as the closing date indicated on the envelope. The sealed envelope must be inserted into the Tender Box situated in the foyer of Prince Mangosuthu Buthelezi House, Corner of Kruger Rand & Barbados Bay Road, CBD, Richards Bay before closing time. If the tender offer is too large to fit into the abovementioned Tender Box or the Box is full, please enquire at the reception counter as to where the SCM (Tender Office) is for alternative instructions. The onus remains with the Tenderer to ensure that the tender is placed in either the Tender Box or as alternatively instructed.

SERVICE PROVIDER'S DETAILS

Name of Service Provider:	
CSD Supplier Number	
Contact Person:	
E-mail Address:	
Telephone Number:	()Code
Fax Number:	()Code
Physical Address:	
Postal Address:	

NOTE:

The Service Provider shall be deemed to have satisfied himself/herself/themselves as to all the conditions and circumstances affecting this tender, including the physical aspects of working areas, and by the submission of a tender, will confirm acceptance of the conditions and circumstances applicable to any subsequent contract.

Enquiries relating to this tender must be directed as indicated below:

Tender Queries:	Technical Queries:
Contact Name: Mr. Z. Mkhwanazi	Contact Name: Mr. S. Mkhize
Telephone: 035 – 799 2790	Telephone: 035 – 799 2690

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T1.1 Tender Notice and Invitation to Tender**KING CETSHWAYO DISTRICT MUNICIPALITY****TENDER REFERENCE: KCDM-06-2023**

**TENDER FOR THE APPOINTMENT OF A PANEL OF MECHANICAL AND ELECTRICAL
CONTRACTORS FOR PROVISION OF MAINTENANCE SERVICES (WATER AND
SANITATION FOR PERIOD OF 3 YEARS ENDING IN JUNE 2026 IN KING
CETSHWAYO DISTRICT MUNICIPALITY**

Interested parties must collect tender documents from the SCM Unit at Prince Mangosuthu House, Suite No. 8, Corner of Krugerrand & Barbados Bay Road, CBD, Richards Bay (035 799 2500) where you will be charged per page, or alternatively download the document from www.kingcetshwayo.gov.za. Tenderers must also have a **CIDB grading of 3ME/3EP or Higher**. The tenderer that fails to meet the stipulated criteria will be regarded as non-responsive.

Any tender submitted by a person(s) who is in the service of the state or if that person(s) is not a natural person, of which any director, manager, principal shareholder or stakeholder is a person in the service of the state or who is an advisor or consultant contracted with the Municipality shall not be considered in terms of regulation 44 of the Municipal Supply Chain Regulations. National Treasury has introduced the Central Supplier Data Base (CSD), where all suppliers are required to register. For more information, please contact Mr. Z. Mkhwanazi on (035) 799 2790 or visit the CSD website at www.csd.gov.za. Only tenderers who are registered with CSD can apply for this tender, all Suppliers applying for this tender must register on the Municipal Data base.

Completed tenders in sealed envelopes bearing the tender number must be deposited in the Municipality's tender box in the foyer of Prince Mangosuthu Buthelezi House, Corner of Krugerrand & Barbados Bay Road, CBD, Richards Bay on or before **12:00 on Tuesday, 20 June 2023**, when tenders will be opened and be published on notice board and KCDM website. Tenders received after the due date and time will not be considered.

"King Cetshwayo District Municipality will strive to achieve the specific goals in line with PPPFA regulations 2022 and the RDP"

		<50 million
No	Categories	80/20
1	An EME or QSE which is at least 100% owned by black people	10
2	BBBEE level 1	10
	Total	20

Prospective service providers are required to ensure full completion and correctness of information when responding to MBD and all other required declarations in the document. The municipality reserves the right to validate the correctness of the declarations through various databases inclusive of the Central Supplier Database (CSD). Failure to fully complete and/or provision of incorrect information in the declaration will be regarded by the employer as a non-responsive tender.

Functional Evaluation Criteria:

Functionality will be performed per criteria as outlined below. A service provider who scores less than 70%, in respect of “functionality” will be regarded as submitting a non-responsive tender and will be disqualified.

The following criteria will be applicable and the maximum weight of each criterion is indicated in brackets:

Criteria		Weight
a.	Tenderer’s experience in similar projects (No project experience will lead to disqualification)	25
b.	Contractors Resources – Personnel and Plant	30
c.	Quality control procedures	10
d.	Technical Approach and Methodology :Proposed methodology to the assignment, the level of details in the proposal, resource capabilities, innovative approaches and ideas.	15
e.	Tenders commitment to health and safety	10
g.	Geographical location of tenderer	10
TOTAL		100

It will be the tenderer’s responsibility to check the document on receipt for completeness and to notify the employer of any discrepancies or omissions. It is the tenderer’s responsibility to provide all the data and information requested in the form required, failure to do so may be regarded by the employer as a non-responsive tender. Submissions may only be done on documentation supplied by the Municipality.

All communication between the employer and the tenderer shall be in a form that can be read, copied and recorded. All writing shall be in the English Language. The employer shall not take any responsibility for non-receipt of communications from a tenderer.

All tender enquiries which are non-technical must be directed to Zamo Mkhwanazi at Tel. 035-799 2790, Technical queries must be directed to Mr. S . Mkhize at Tel. 035-753 Tel. 035 799 2690.

Tenderers who do not hear from the King Cetshwayo Municipality within 90 days of the closing date of the tender should consider their tender unsuccessful. Please note that no tender will be accepted by fax or e-mail.

Mr. P.P. Sibiya
Municipal Manager
King Cetshwayo District Municipality
Private Bag X1025
RICHARDS BAY
3900

T1.1.1 Summary for Tender Opening Purposes

1. To facilitate the reading out of tender parameters at the opening of tenders, the Tenderer shall complete this form and submit it with his tender. This form which does not replace the Form of Offer, C1.1, must be completed and signed by Employer's Agent at the opening of the tender.
2. Legal Name of Tenderer submitting the Bid:
3. Tender amount (*as stated in the Form of Offer, including VAT*): R:
4. Indicate preferred area of operation

Table 1 Area of operation

Table 2 Area of operation

	Local Municipality	Urban Area		Network Size	Tick (the preferred Area)
1	Mfolozi		KwaMbonambi	<ul style="list-style-type: none"> • 1 x Sewer Pump Stations • 14 x Water Pump Stations • 1 x Package Plant • 12 x Borehole schemes 	
2	Umlalazi	2.1	Eshowe	<ul style="list-style-type: none"> • 10 x Sewer Pump Stations • 6 x Waste Water Treatment Stations • 27 x Water Pump Stations • 8 x Water Treatment Plants • 32 x Borehole schemes 	
		2.2	Gingindlovu		
		2.3	Mtunzini		
3	Mthonjaneni		Melmoth	<ul style="list-style-type: none"> • 2 x Waste Water Treatment Stations • 3 x Water Pump Stations • 2 x Water Treatment Plants • 15 x Borehole schemes 	
4	Nkandla		Nkandla	<ul style="list-style-type: none"> • 3 x Sewer Pump Stations • 3 x Waste Water Treatment Stations • 24x Water Pump Stations • 10 x Water Treatment Plants • 40 x Boreholes and Protected Springs schemes 	

Note: In the event of conflict between the data provided in this summary and that given in the Form of Offer, C1.1, the latter shall prevail.

5. Is the Form of Offer signed by Tenderer and Witnesses?

YES	NO
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7. Details of the Bidder's contact person at the tender opening session who confirms the above:

Name (*Print*):

Designation:

Tel:

Fax:

Cell Phone:

Email address:

Date:

8. Indicate whether this document is an original copy or a photocopy:

ORIGINAL	COPY
----------	------

9. Employers Representative(s) or Agent(s) at the Tender opening meeting:

9.1

Name

Signature

Date

9.2

Name

Signature

Date

T1.2 Tender Data

The conditions of Tender are the Standard Conditions of Tender as contained in Annex F of the CIDB Standard for Uniformity in Construction Procurement. (See www.cidb.org.za) which are reproduced without amendment or alteration are, for the convenience of Tenderers attached as an Annex to this 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 data given below is cross-referenced to the clause in the Standard Conditions of Tender to which it mainly applies.

Clause**Number Tender Data**

F.1.1 The employer is the King Cetshwayo District Municipality

F.1.2 The Tender documents issued by the employer comprise:

T1.1 Tender Notice and Invitation to Tender

T1.2 Tender Data

T2.1 List of Returnable Documents

T2.2 Returnable Schedules

Part 1: Agreements and contract data

C1.1 Form of Offer and Acceptance

C1.2 Contract Data

C1.3 Conditions of Contract

C1.4 Contractual Documentation

Part 2: Scope of work

C2.1 Scope of Work

Part 3: Annexures

Pricing data is not for evaluation purpose but failure to complete may lead to tender disqualification.

Annexures

F.1.4 The Employer's agent for the purposes of any communication between the employer and tenderer, is:

Queries	Tender queries		Technical Queries	
Name:	Mr. Z Mkhwanazi		Mr S.Mkhize	
Postal Address:	Private Bag X1025 Richards Bay 3900		Private Bag X1025 Richards Bay 3900	
Physical Address	Mangosuthu House, Corner Kruger Rand & Barbados Bay Road, Richards Bay CBD		Mangosuthu House, Corner Kruger Rand & Barbados Bay Road, Richards Bay CBD	
Tel /Fax No.:	035 799 2790	086 514 9772	035 799 2690	082 908 7265
E-mail:	mkhwanaziz@kingcetshwayo.co.za		mkhizesp@kingcetshwayo.gov.za	

- F.2.1 Only those Tenderers who are registered with the CIDB, **Three Electrical/Mechanical Engineering Works (3ME/EP) or higher** class of construction work and are registered with the CIDB as having a track record, are eligible to submit Tenders.

Add the following to F.2.1.1

- a) Only Tenderers that can furnish proof of extensive previous experience in projects of similar nature, value, complexity, construction methods and similar contract period should submit bids.
- b) The Tenderer need to meet the minimum score for functionality being **70%**
- c) The Tenderer does comply with the legal requirements stated in the Employer's procurement policy;
- d) The Tenderer can demonstrate that he possesses the necessary professional and technical qualifications and competence, financial resources, equipment and other physical facilities, managerial capability, personnel, experience and reputation to perform the contract;
- e) The Tenderer can 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.
- f) The Tenderer can demonstrate that he will have in his employ during the contract period the necessary personnel satisfying the requirements of the Scope of Work for labor-intensive competencies for management and supervisory personnel.
- g) The appointed Contractors shall be governed as follows;
 - i. Contractors shall only proceed with work associated with a batch/task/package when given an official order to do so.
 - ii. Work will be assigned to Contractors by issuing the Request for Quotation (RFQ) for predetermined scope by the Employer or Employer's Engineer (Representative) unless is in the cases of emergencies where the Contractor will be issued with Letter of Intent or official instruction by the Employer to proceed with the work. In circumstances of emergency the Contractor will be expected to attend to the problem immediately and bill the Employer for the work done.
- h) The District Municipality will register each batch/task/package in the CIDB Register of Projects to ensure compliance with CIDB Regulations
- i) Acceptance of any tender shall constitute a binding contract between the Employer and the successful Tenderer in terms of the rates provided by the bidder. However, the quantities contained herein may vary due to the uncertainties associated with the scope of work.
- j) The District Municipality may conduct a due diligence on any Tender, which may include interviewing customer references or other activities to verify a Tenderer or other information and capabilities.
- k) The District Municipality will evaluate the Tenders with reference to set and approved evaluation criteria. The District Municipality reserves the right to appoint a specialist/consultant to assist in performing such evaluations.
- l) The mandatory requirements evaluation will be carried out by the appointed committee of the District Municipality to determine which Tender responses are compliant or non-compliant with the Tender specifications issued by the District Municipality as part of the Tender process.
- m) Where there is failure to comply with the mandatory requirements Criteria or the District Municipality is for any reason unable to verify whether the mandatory requirements are fully complied with, the District Municipality will disqualify the tender.
- n) The Tenderer must take cognizance of the fact that quantities contained herein are not the complete representation of the complete scope. Quantities may vary as and when the need arise and this will be at the discretion of the Employer.

- F.2.7 The arrangements for a compulsory clarification meeting are as stated in the Tender Notice and Invitation to Tender.

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

F.2.12 If a Tenderer wishes to submit an alternative Tender offer, the only criteria permitted for such alternative Tender offer is that it demonstrably satisfies the Employer's standards and requirements, the details of which may be obtained from the Employer's Representative.

Calculations, drawings and all other pertinent technical information and characteristics as well as modified or proposed Pricing Data must be submitted with the alternative Tender offer to enable the Employer to evaluate the efficacy of the alternative and its principal elements so as to take a view on the degree to which the alternative complies with the Employer's standards and requirements and to evaluate the acceptability of the pricing proposals. Calculations must be set out in a clear and logical sequence and must clearly reflect all design assumptions. Pricing Data must reflect all assumptions in the development of the pricing proposal.

3 Acceptance of an alternative Tender offer will mean acceptance in principle of the offer. It will be an obligation of the contract for the Tenderer, in the event that the alternative is accepted, to accept full responsibility and liability that the alternative offer complies in all respects to the Employer's standards and requirements.

F.2.13.3 Each Tender offer communicated on paper shall be submitted as an original, plus 0 copies.

F.2.13.5 The employer's address for delivery of Tender offers and identification details to be shown on each Tender offer package are:

Location of Tender box:		In the foyer of the offices of the King Cetshwayo District Municipality, Corner of Krugerrand & Barbados Bay Road, CBD, Richards Bay
Identification details	Reference Number	Reference No.: KCDM/06/2023
	Title of Tender	TENDER FOR THEAPPOINTMENT OF A PANEL OF MECHANICAL AND ELECTRICAL CONTRACTORS FOR PROVISION OF MAINTENANCE SERVICES (WATER AND SANITATION) FOR A PERIOD OF 3 YEARS ENDING IN JUNE 2026 IN THE KING CETSHWAYO DISTRICT MUNICIPALITY.
	Closing Date	Tuesday, 20 JUNE 2023
	Time	12h00
Postal address:		Private Bag X1025, Richards Bay, 3900

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

F.2.16 Telephonic, telegraphic, telex, facsimile or e-mailed Tender offers will not be accepted.

F.2.17 The Tender offer validity period is 90 days

F.2.18 The tenderer must submit to the Employer 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 requirement.

F.3.4 Tenders will be opened immediately after the closing time for Tenders.

F.3.8 Test for responsiveness

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

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

F.3.11.4 Scoring preference

All tenderers will be evaluated on compliance and functionality

F3.11.9 Scoring Quality

Substitute the word 'quality' wherever it appears with the word 'functionality'.

The table below lists the scoring criteria and weighting for the score achieved against the relevant schedule:

#	DESCRIPTION OF FUNCTIONALITY CRITERIA	WEIGHT	
1.	Tenderer's experience in similar contracts (in nature and value) in last 5 years. With minimum annual contract value of R3million (Contract to be based on mechanical or Electrical maintenance for water infrastructure)		
	<ul style="list-style-type: none"> i. No Information supplied (0) (disqualification) ii. One (1) year in electrical and mechanical construction (10) iii. Two (2) year in electrical and mechanical construction (17) iv. Three (3) year in electrical and mechanical construction (23) v. Four (4) or more years in electrical and mechanical construction (25) Returnable Schedule: RS009	25	
2.	Contractors Resources – Personnel and Plant		
2.1	Organization and staffing proposal /schedule and CVs .		
	<ul style="list-style-type: none"> i. No information supplied (disqualification) ii. Contract Manager (Mechanical/Electrical Engineering qualifications – National Diploma) - Minimum of 7 years' experience in water infrastructure maintenance (5) iii. Contract Manager (Mechanical/Electrical Engineering qualifications – National Diplom) - Minimum of 10 years' experience in water infrastructure maintenance (10) 	10	20
	<ul style="list-style-type: none"> i. No information supplied (disqualification) ii) Supervisor (Mechanical/Electrical Engineering qualification – Trade Tested Artisan with 5 years' Supervisory experience (5) iii) Supervisor (Mechanical/Electrical Engineering qualification – Trade Tested Artisan with 7 years Supervisory experience (10) 	10	

#	DESCRIPTION OF FUNCTIONALITY CRITERIA	WEIGHT	
	(Experience must be in water sector)		
2.2	Plant and equipment(refer to page C35)		
	<ul style="list-style-type: none"> i. No information supplied (0) ii. Tenderer does not own any key major equipment and tools and cannot assure the use of equipment hire during the Contract period. (3) iii. Tenderer does not own key major equipment but can assure the use of equipment hire during the Contract period. (6) iv. Tenderer owns some key major equipment and can assure the use of equipment hire for the balance during the Contract period. (9) v. Tenderer owns majority of key major equipment (10) Returnable Schedule: RS010	10	
3.	Technical Approach and Methodology: Proposed methodology to the assignment, the level of details in the proposal, resource capabilities, innovative approaches and ideas.		
	<ul style="list-style-type: none"> i. No Methodology (0) (disqualification) ii. Detailing the method of collecting assets information and timeline to developing maintenance plans for the said assets. (4) iii. Demonstration of resource capacity with a clear description of how each resource will be used including its availability over 24hour period (8) iv. And Outlining the procedure for quality monitoring, work planning and allocation, supervision and reporting; (12) v. Availability and application of Standard Operating Procedure (15) Returnable Schedule: RS017	15	
4.	Quality Control Procedures		
	<ul style="list-style-type: none"> i. Failure to respond or address the Employer's requirements (0) (disqualification) ii. Tenderer has provided information, but quality control procedures are unlikely to ensure compliance with the stated Employer's requirements (3) iii. The Tenderer has provided most of the required information; the quality control procedures are possibly able to ensure compliance as per the Employer's requirements. (6) iv. The Tenderer has provided most of the required information and has shown that the quality control procedures are likely to ensure compliance with the Employer's requirements. (9) v. The Tenderer has provided all information required and quality control procedures are most likely to ensure compliance with the Employer's requirements. (10) 	10	

#	DESCRIPTION OF FUNCTIONALITY CRITERIA	WEIGHT
	Returnable Schedule: RS0014	
5.	Competency in Implementing Health and Safety on a Construction project	
	i. Failure to respond or address the Employer's requirements (0) (disqualification) ii. Tenderer has provided information, but health and safety plans are not in compliance with the Occupational health and safety Act requirement. (3) iii. Tender has provided most of the required information; the quality control procedures are detailed and demonstrate how they will be monitored on implementation (6) iv. The Tenderer has provided most of the required information and has shown that the quality control procedures are compliance to ISO 9001 and health and safety requirement are in compliance to OHS Act (10) Returnable Schedule: RS0015	10
6.	Locality of the tenderer	
	i) Offices outside KZN (4) ii) Offices outside King Cetshwayo District Municipality but within KZN (6) iii) Offices within King Cetshwayo District Municipality (10)	10
	TOTAL	100

The tenderer needs to score a minimum of 60% to be considered responsive.

F.3.13.1 Tender offers will be accepted if:

- a) The Tenderer complies with the legal requirements stated in the Tender Data and Returnable Schedule.
- b) The Tenderer is registered with the Construction Industry Development Board in an appropriate contractor grading designation;
- c) The Tenderer or any of its directors is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector;
- d) The Tenderer has not:
 - i) abused the Employer's Supply Chain Management System; or
 - ii) failed to perform on any previous contract and has been given a written notice to this effect;
- e) has completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the Tenderer's ability to perform the contract in the best interests of the Employer or potentially compromise the Tender process.

F.3.17 The number of paper copies of the signed contract to be provided by the employer is one.

F.3.18 Tenderers who submit the fraudulent documentation will be automatically disqualified from the bidding process and will also be black listed by the King Cetshwayo District Municipality and will be included into the National Treasury Fraud Database.

T1.2.1 CONDITIONS OF TENDER

A. GENERAL

1. King Cetshwayo Municipality does not bind itself to accept the lowest or any tender, and reserves the right to accept the whole or any part of a tender.
2. The conditions of tender are based on Standard Conditions of Tender as contained in Annex F of Board Notice 86 of 2010 in Government Gazette No.33239 of 10 July 2015, Construction Industry Development Board (CIDB) Standard for Uniformity in Construction Procurement (see www.cidb.org.za) which are reproduced without amendment or alteration for the convenience often there as an Annex to this Tender Data.
3. The Standard Conditions of Tender make several references to the Tender Data for details that specifically to this tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the standard conditions of tender. Each item of data given below is cross-referenced to the clause in the Standard Conditions of Tender to which it mainly applies.
4. This contract will be governed by King Cetshwayo District Municipality “Conditions of TENDER” as outlined in this document only and not any condition supplied by the Tenderer.
5. The quantities called for in this tender are an estimated quantity and King Cetshwayo District Municipality reserves the right to take more or less than the quantity specified.
6. Full details of items offered and or drawings / pamphlets etc. must be supplied together with the return documents. All additional drawings / pamphlets returned with the tender documents must be firmly bound and marked as “Additional” to the specific tender reference number.
7. All items offered on this tender must be new and of the latest design.
8. Only tenders on King Cetshwayo District Municipality official tender document will be accepted and the original document must be returned, fully completed and signed, in the form presented. Failure to do so will invalidate such tender.
9. It must be clearly understood by the Tenderer, that no order/s for such commodities or services required by the King Cetshwayo District Municipality will be recognized by the Tenderer unless an King Cetshwayo District Municipality official order is issued and it is further understood that King Cetshwayo District Municipality will not accept responsibility for any payment to the Tenderer unless the delivery notes and invoices for such goods or services quote the relevant order number and is sent to King Cetshwayo District Municipality, Financial Department, Private BagX1025, RICHARDS BAY, 3900.
10. Should it be considered necessary by the Tenderer, in the interest of design, quality or inspection for whatever reason that a King Cetshwayo District Municipality official should proceed to other centers for inspection purposes, such costs shall be for the account of the Tenderer.
11. Only tenders received by 12h00 on the given closing date will be considered. No late tender by post, e-mail, fax, courier or delivered by hand will be accepted after this time.
12. No telegraphic, e-mail or faxed tenders will be accepted and all posted or tenders sent by couriers, must be clearly marked with the postal address.
13. No correction fluid/ tape should be used on this tender document. Any alterations on the document should be signed by the responsible person completing the document; failing to adhere to this will disqualify your tender.
14. ALL PRICES QUOTED MUST INCLUDE VALUE ADDED TAX AND MUST BE FIRM FOR A PERIOD OF (90) NINETY DAYS FROM CLOSING DATE OF THIS TENDER.
15. SERVICE PROVIDER (SP) TAX STATUS WILL BE VERIFIED ON CSD.

16. B. DEMONSTRATIONS AND INSPECTIONS

17. All Tenderers must be prepared to demonstrate where required, free of charge and obligation, at the King Cetshwayo District Municipality or any other area within the boundary of the King Cetshwayo District Municipality, any items offered in this tender.
18. Where officials are required to attend demonstrations or inspections outside the District Municipality boundary of Richards Bay, all costs to attend such demonstration must be borne by the Tenderer.

C. DELIVERIES, COMPLETION AND PENALTIES

19. Delivery date to be negotiated on placing the order.
20. Tenderers shall furthermore note that goods or services will not be considered acceptable and consequently their obligations not fulfilled should goods or services fail to comply with the specifications in the tender document.
21. Where the supplier fails to deliver within the scope of the specifications of this tender, the Municipality reserves the right to obtain services from any other supplier that complies with the specifications and the tenderer will be held responsible for all costs involved.

D. PAYMENTS

22. Payment will be made within 30 days from statement invoice date subject to satisfactory execution of the contract conditions and provided that the statement/invoice is without error.
23. Tenders must clearly state all settlement and trade discounts.
24. Any additional payment for extra work carried out on a contract will only be made provided that the contractor is issued with a variation order by the Municipal Manager or delegated official of the King Cetshwayo District Municipality.
25. The tenderer hereby indemnifies King Cetshwayo District Municipality from any claims whatsoever, which may arise as a result of loss of income suffered by the Tenderer for any reason directly or indirectly during the course of this tender unless such loss has arisen as a result of negligence on the part of King Cetshwayo District Municipality

Annex F: Standard Conditions of Tender

As published in *Annexure F of the CIDB Standard for Uniformity for Construction Procurement Board Notice 136* Government Gazette No 38960 of 10 July 2015

F.1 General F.1.1 Actions

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

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

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

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

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

F.1.2 Tender Documents

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

F.1.3 Interpretation

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

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

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

- a) **conflict of interest** means any situation in which:
 - i) someone in a position of trust has competing professional or personal interests which make it difficult to fulfil his or her duties impartially;
 - ii) an individual or organisation is in a position to exploit a professional or official capacity in some way for their personal or corporate benefit; or
 - iii) Incompatibility or contradictory interests exist between an employee and the organisation which employs that employee.
- b) **Comparative offer** means the price after the factors of a non-firm price and all unconditional discounts it can be utilised to have been taken into consideration;
- c) **Corrupt practice** means the offering, giving, receiving or soliciting of anything of value to influence the action of the employer or his staff or agents in the tender process;
- d) **Fraudulent practice** means the misrepresentation of the facts in order to influence the tender process or the award of a contract arising from a tender offer to the detriment of the employer, including collusive practices intended to establish prices at artificial levels;

- e) **Organization** means a company, firm, enterprise, association or other legal entity, whether incorporated or not, or a public body;
- f) **Functionality** means the measurement according to the predetermined norms of a service or commodity designed to be practical and useful, working or operating, taking into account quality, reliability, viability and durability of a service and technical capacity and ability of a Tenderer.

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

F.1.5 Cancellation and Re-Invitation of Tenders

F1.5.1 An organ of state may, prior to the award of the tender, cancel a tender if-

- (a) due to changed circumstances, there is no longer a need for the services, works or goods requested; or
- (b) Funds are no longer available to cover the total envisaged expenditure; or (c) no acceptable tenders are received.

F1.5.2 The decision to cancel a tender must be published in the CIDB website and in the government Tender Bulletin for the media in which the original tender invitation was advertised.

F.1.6 Procurement Procedures

F.1.6.1 General

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

F.1.6.2 Competitive negotiation procedure

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

F.1.6.2.2 All responsive Tenderers, or not less than three responsive Tenderers that are highest ranked in terms of the evaluation method and evaluation criteria stated in the tender data, shall be invited in each round to enter into competitive negotiations, based on the principle of equal treatment and keeping confidential the proposed solutions and associated information. Notwithstanding the provisions of F.2.17, the employer may request that tenders be clarified, specified and fine-tuned in order to improve a Tenderer's competitive position provided that such clarification, specification, fine-tuning or additional information does not alter any fundamental aspects of the offers or impose substantial new requirements which restrict or distort competition or have a discriminatory effect.

F.1.6.2.3 At the conclusion of each round of negotiations, Tenderers shall be invited by the employer to make a fresh tender offer, based on the same evaluation criteria, with or without adjusted weightings. Tenderers shall be advised when they are to submit their best and final offer.

F.1.6.2.4 The contract shall be awarded in accordance with the provisions of F.3.11 and F.3.13

F.1.6.3 Proposal procedure using the two stage-system

F.1.6.3.1 Option 1

Tenderers shall in the first stage submit technical proposals and, if required, cost parameters around which a contract may be negotiated. The employer shall evaluate each responsive submission in terms of the method of evaluation stated in the tender data, and

in the second stage negotiate a contract with the Tenderer scoring the highest number of evaluation points and award the contract in terms of these conditions of tender.

F.1.6.3.2 Option 2

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

F.1.6.3.2.2 The employer shall evaluate tenders received during the second stage in terms of the method of evaluation stated in the tender data, and award the contract in terms of these conditions of tender.

F.2 Tenderer's obligations

F.2.1 Eligibility

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

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

F.2.2 Cost of Tendering

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

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

F.2.3 Check documents

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

F.2.4 Confidentiality and copyright of documents

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

F.2.5 Reference documents

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

F.2.6 Acknowledge addenda

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

F.2.7 Clarification meeting

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

F.2.8 Seek clarification

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

F.2.9 Insurance

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

F.2.10 Pricing the tender offer

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

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

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

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

F.2.11 Alterations to documents

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

F.2.12 Alternative tender offers

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

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

F.2.12.3 An alternative tender offer may only be considered in the event that the main tender offer is the winning tender.

F.2.13 Submitting a tender offer

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

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

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

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

F.2.13.5 Seal the original tender offer. The 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 Accept that the employer will not assume any responsibility for the misplacement or premature opening of the tender offer if the outer package is not sealed and marked as stated.

F.2.13.7 Accept that tender offers submitted by facsimile or e-mail will be rejected by the employer, unless stated otherwise in the tender data.

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

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

F.2.15 Closing time

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

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

F.2.16 Tender offer validity

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

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

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

F.2.16.4 Where a tender submission is to be substituted, submit a substitute tender in accordance with the requirements of F.2.13 with the packages clearly marked as "SUBSTITUTE". This can only be applicable before the tender closing date.

F.2.17 Clarification of tender offer after submission

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

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

F.2.18 Provide other material

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

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

F.2.19 Inspections, tests and analysis

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

F.2.20 Submit securities, bonds and policies

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

F.2.21 Check final draft

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

F.2.22 Return of other tender documents

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

F.2.23 Certificates

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

F.3 The employer's undertakings

F.3.1 Respond to requests from the Tenderer

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

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

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

F.3.2 Issue Addenda

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

F.3.3 Return late tender offers

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

F.3.4 Opening of tender submissions

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

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

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

F.3.5 Two-envelope system

F.3.5.1 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 functionality of the technical proposals offered by Tenderers, then advise Tenderers who remain in contention for the award of the contract of the time and place when the financial proposals will be opened. Open only the financial proposals of Tenderers, who score in the functionality evaluation more than the minimum number of points for functionality stated in the tender data, and announce the score obtained for the technical proposals and the total price and any points claimed on BBBEE status level. Return unopened financial proposals to Tenderers whose technical proposals failed to achieve the minimum number of points for functionality.

F.3.6 Non-disclosure

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

F.3.7 Grounds for rejection and disqualification

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

F.3.8 Test for responsiveness

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

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

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

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

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

F.3.9 Arithmetical errors, omissions and discrepancies

F.3.9.1 Check the highest ranked tender or Tenderer with the highest number of tender evaluation points after the evaluation of tender offers in accordance with F.3.11 for:

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

F.3.9.2 The employer must correct the arithmetical errors in the following manner:

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

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

F.3.10 Clarification of a tender offer

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

F.3.11 Evaluation of tender offers

F.3.11.1 General

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

F.3.11.2 Method 1: Price and Preference

In the case of a price and preference:

- 1) Score tender evaluation points for price
- 2) Score points for BBBEE contribution
- 3) Add the points scored for price and BBBEE.

F.3.11.3 Method 2: Functionality, Price and Preference in the case of a functionality, price and preference:

- 1) Score functionality, rejecting all tender offers that fail to achieve the minimum number of points for functionality as stated in the Tender Data.
- 2) No tender must be regarded as an acceptable tender if it fails to achieve the minimum qualifying score for functionality as indicated in the tender invitation.
- 3) Tenders that have achieved the minimum qualifications score for functionality must be evaluated further in terms of the preference point system prescribed in paragraphs 4 and 5 below.

The 80/20 preference point system for acquisition of services, works or goods up to Rand value of R50 million

- 4) (a)(i) The following formula must be used to calculate the points for price in respect of tenders (including price quotation) with a rand value equal to or above R30000 and up to Rand value of R50 000 000 (all applicable taxes included):

$$P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where

P_s = Points scored for comparative price of tender or offer under consideration; P_t = Comparative price of tender or offer under consideration; and P_{\min} = Comparative price of lowest acceptable tender or offer.

- (4) (a)(ii) An employer of state may apply the formula in paragraph (i) for price quotations with a value less than R30000, if and when appropriate:
- (4) (b) Subject to subparagraph (4) (c), points must be awarded to a tender for attaining the B-BBEE status level of contributor in accordance with the table below
- (4) (c) A maximum of 20 points may be allocated in accordance with subparagraph (4)(b)
- (4) (d) The points scored by tender in respect of B-BBEE contribution contemplated in subparagraph (4) (b) must be added to the points scored for price as calculated in accordance with subparagraph (4)(a).
- (4) (e) Subject to paragraph 4.3.8 the contract must be awarded to the tender whose score the highest total number of points.

The 90/10 preference points system for acquisition of services, works or goods with a Rand value above R50 million

- (5) (a) The following formula must be used to calculate the points for price in respect of tenders with a Rand value above R50 000 000 (all applicable taxes included):

$$P_s = 90 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where

P_s = Points scored for comparative price of tender or offer under consideration; P_t = Comparative price of tender or offer under consideration; and P_{\min} = Comparative price of lowest acceptable tender or offer.

offer under consideration; and P_{min} = Comparative price of lowest acceptable tender or offer

- (5) (b) A maximum of 10 points may be allocated in accordance with subparagraph(5)(a).
- (5) (c) The points scored by tender in respect of B-BBEE contribution contemplated in subparagraph(5)(a) must be added to the points scored for price as calculated in accordance with subparagraph(5)(a).
- (5) (d) Subject to paragraph 4.3.8 the contract must be awarded to the tender who scores the highest total number of points.

F.3.11.6 Decimal places

Score price, preference and functionality, as relevant, to two decimal places.

F.3.11.7 Scoring Price

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

$$N_{FO} = W_I \times A$$

Where: N_{FO} is the number of tender evaluation points awarded for price.

W_I is the maximum possible number of tender evaluation points awarded for price as stated in the Tender Data.

A is a number calculated using the formula and option described in Table F.1 as stated in the Tender Data.

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

Formula	Comparison aimed at achieving	Option1	Option2
1	Highest price or discount	$A = \frac{(1 + (P - P_m))}{P_m}$	$A = P/P_m$
2	Lowest price or percentage commission/ fee	$A = \frac{(1 - (P - P_m))}{P_m}$	$A = P_m/P$
P_m is the comparative offer of the most favorable comparative offer. P is the comparative offer of the tender offer under consideration.			

F.3.11.8 Scoring preferences

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

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

F.3.11.9 Scoring functionality

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

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

$$NQ = W_2 \times SO / MS$$

Where: *SO* is the score for quality allocated to the submission under consideration; *MS* is the maximum possible score for quality in respect of a submission; and *W₂* is the maximum possible number of tender evaluation points awarded for the quality as stated in the tender data

F.3.12 Insurance provided by the employer

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

F.3.13 Acceptance of tender offer

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

- a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement,
- b) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract,
- c) has the legal capacity to enter into the contract,
- d) is not insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act, 2008, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his business activities, or is subject to legal proceedings in respect of any of the foregoing,
- e) complies with the legal requirements, if any, stated in the tender data, and
- f) is able, in the opinion of the employer, to perform the contract free of conflicts of interest.

F.3.14 Prepare contract documents

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

- a) addenda issued during the tender period,
- b) inclusion of some of the returnable documents, and
- c) Other revisions agreed between the employer and the successful

Tenderer.

F.3.14.2

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

F.3.15 Complete adjudicator's contract

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

F.3.16 Notice to unsuccessful Tenderers

F.3.16.1 Notify the successful Tenderer of the employer's acceptance of his tender offer by completing and returning one copy of the form of offer and acceptance before the expiry of the validity period stated in the tender data, or agreed additional period.

F.3.16.2 After the successful Tenderer has been notified of the employer's acceptance of the tender, notify other Tenderers that their tender offer have not been accepted.

F.3.17 Provide copies of the contracts

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

F.3.18 Provide written reasons for actions taken

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

F3.19 Transparency in the procurement process.

F3.19.1 The CIDB prescripts require that tenders must be advertised and be registered on the CIDB Tender system.

F3.19.2 The employer must adopt a transparency model that incorporates the disclosure and accountability as transparency requirements in the procurement process.

F3.19.3 The transparency model must identify the criteria for selection of projects, project information template and the threshold value of the projects to be disclosed in the public domain at various intervals of delivery of infrastructure projects.

F3.19.4 The client must publish the information on a quarterly basis which contains the following information:

- ① Procurement planning process
- ① Procurement method and evaluation process
- ① Contract type
- ① Contract status
- ① Number of firms tendering
- ① Cost estimate
- ① Contract title
- ① Contract firm(s)
- ① Contract price
- ① Contract scope of work
- ① Contract start date and duration
- ① Contract evaluation reports

F3.19.5 The employer must establish a Consultative Forum which will conduct a random audit in the implementation of the Transparency requirements in the procurement process.

F3.19.6 Consultative Forum must be an independent structure from the bid committees.

F3.19.7 The information must be published on the employer's website.

F3.19.8 Records of such disclosed information must be retained for audit purposes.

T2.1 List of Returnable Documents

The Tenderer must complete the following returnable documents:

1 Returnable Schedules

- RS001 : Record of Addenda to Tender Documents
- RS002 : Compulsory Enterprise Questionnaire
- RS003 : Contractor Registration with the Construction Industry Development Board
- RS004 : An original/certified copy of a valid Letter of Good Standing
- RS005 : Municipal Account Statement
- RS006 : Preferential Procurement – Optional MBD6.1
- RS007 : Authority for Signatory
- RS008 : Proposed Amendment and qualification
- RS009 : Tenderers Experience
- RS010 : Key Personnel
- RS011 : Declaration of Tenderers Past Supply Chain Management Practices
- RS012 : Declaration of Interest
- RS013 : Certificate of Independent Bid Determination
- RS014 : Quality assurance and Environmental Management
- RS015 : Declaration of Competency on Health and Safety
- RS016 : Form of Acceptance and Declaration
- RS017 : Technical Approach and Methodology

Record of Addenda to Tender documents**RS001**

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

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

Attach additional pages if more space is required.

Compulsory Enterprise Questionnaire**RS002**

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.

Failure to do so may lead to your Tender being disqualified.

Section1: **Name of enterprise:**

Section2: **VAT registration number, if any:**

Section3: **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 6 partners

Section 5: **Particulars of companies and close corporations**

Company registration number	
Close corporation number	
Tax reference number	

Attach a certified copy of valid CIPRO / CIPC Certificate to this page.

Section 6: Record of 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:

<input type="checkbox"/> a member of any municipal council	<input type="checkbox"/> 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)
<input type="checkbox"/> a member of any provincial legislature	<input type="checkbox"/> a member of an accounting authority of any national or provincial public entity
<input type="checkbox"/> a member of the National Assembly or the National Council of Province	<input type="checkbox"/> an employee of Parliament or a provincial legislature
<input type="checkbox"/> a member of the board of directors of any municipal entity	
<input type="checkbox"/> an official of any municipality or municipal entity	

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:

<input type="checkbox"/> a member of any municipal council	<input type="checkbox"/> 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)
<input type="checkbox"/> a member of any provincial legislature	<input type="checkbox"/> a member of an accounting authority of any national or provincial public entity
<input type="checkbox"/> a member of the National Assembly or the National Council of Province	<input type="checkbox"/> an employee of Parliament or a provincial legislature
<input type="checkbox"/> a member of the board of directors of any municipal entity	
<input type="checkbox"/> an official of any municipality or municipal entity	

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

*insert separate page if necessary

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

- i) authorizes the Employer to obtain a tax clearance certificate from the South African Revenue Services that my / our tax matters are in order;
- ii) confirms that neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;
- iii) confirms that no partner, 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;
- v) confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

Signed _____

Date _____

Position _____

Tenderer _____

Contractor Registration with Construction Industry Development Board

RS003

Name of entity registered with CIDB: _____

Registration CRS number: _____

Registration category and class: _____

Failure to do so may lead to your Tender being disqualified.

Workmen's Compensation Letter of Good Standing

RS004

PAGE TO WHICH A VALID CERTIFICATE NUMBER OF THE WORKMEN'S COMPENSATION COMMISSIONER LETTER OF GOOD STANDING MUST BE ATTACHED.

Please provide a valid certificate number of the Workmen's Compensation if registered with the department of labour, or attach valid original (or valid certified copy) of the Workmen's Compensation commissioner letter of good standing from applicable agencies e.g, FEM, RAM etc, if not registered with the department of labour.

Workmen's Compensation registration number: _____

Workmen's Compensation certificate number: _____

OR

In the case where it is not possible for an applicant to obtain the above letter of good standing from the Workmen's Compensation Commissioner, an affidavit is to be submitted advising that the business has registered with the Workmen's Compensation Commissioner.

OR

In the case where a business does not employ any employees an affidavit Together with a Letter from the Workmen's Compensation Commissioner addressed to the business, confirming that registration is not required, must be submitted.

FAILURE TO DO SO MAY LEAD TO YOUR TENDER BEING DISQUALIFIED.

Municipal Account Statement

RS005

PAGE TO WHICH ANY OF THE FOLLOWING MUST BE ATTACHED

IN THE CASE WHERE:

A. TENDERER IS PROPERTY OWNER FOR PURPOSE OF CONDUCTING BUSINESS FROM IT PREMISES**A.1**

In the case where the tenderer owns the property from which the tenderer's business operates from, an original or certified copy of the tenderer's business municipal account not older than 3 months) indicating the status of payment of all municipal rates and taxes i.e. property rates, electricity, water, refuse & sewer from the Municipality in which jurisdiction the said property is situated, must be submitted.

☐

OR

A.2

In the instance where the tender occupies Tribal land an original/certified affidavit from commissioner of oaths, confirming that the tenderer is residing in the area where no municipal accounts are billed. If the property rates, electricity, water, refuse is charged by the municipality, the original or certified copy of the statement not older than three (3) months in the name of the service provider or any of its directors must be attached.

☐

NB: Should there be separate tax invoices from the municipality for property rates and services (taxes), you are required to submit the most recent of each of these invoices.

OR

B. TENDERER IS THE TENANT FOR PURPOSE OF CONDUCTING ITS BUSINESS FROM PREMISES☐**B.1**

In the case where the tenderer does not own property and is a tenant for the purpose of its business establishment, the tenderer to provide an original or certified copy of a certificate from its landlord certifying that all the tenant's payments in respect of all municipal rates and taxes i.e. property rates, electricity, water, refuse & sewer are paid up to date, or

☐**B.2**

In the case where the tenderer as tenant is responsible for its own municipal accounts with the municipality then tenderer must attach the letter from the landlord certifying the above together with original or certified copies of all most recent relevant municipal invoices i.e. property rates, electricity, water refuse & sewer.

☐**B.3**

In the case where the tenderer operates in the property owned by relative and does not pay rent or rates, an affidavit from the relative confirming such must be attached. Also the up to date original or certified copy municipal rates statement of the relative must be attached or letter from the councilor in case of the Traditional Authority

☐**B.4**

In case where the potential service provider is under incubation programme an original or certified copy of the letter from the incubator confirming that the service provider is using their facilities (property). The incubator is to provide their original or certified copy of rates account or letter from the landlord.

☐

Please select the relevant option by ticking below

Failure to do so may lead to your tender being disqualified.

MBD 6.1

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

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

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

1. GENERAL CONDITIONS

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

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

1.2 To be completed by the organ of state

(delete whichever is not applicable for this tender).

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

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

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

1.4 To be completed by the organ of state:

The maximum points for this tender are allocated as follows:

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

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

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

2. DEFINITIONS

(a) **"tender"** means a written offer in the form determined by an organ of state in response to an invitation to tender.

provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;

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

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

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

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

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

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

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

3.2.1. POINTS AWARDED FOR PRICE

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

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

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmax = Price of highest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

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

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

(Note to 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)
Ownership: BBBEE Level 1		10		
An EME and QSE which is at least 100% owned by black people		10		
Total		20		

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:	.....

Please attach, to this page, an original or certified copy of the valid B-BBEE status level verification certificate, issued by either:

- A Verification Agency that was accredited by the South African National Accreditation System (SANAS).
- Sworn Affidavit downloaded from DTI website in case of an EME or QSE

Failure to do so may lead to your tender being disqualified.

Certificate of authority for signatory	RS007
---	--------------

This Returnable Schedule is to be completed by companies and close corporations.

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. **Failure to do so may lead to your Tender being disqualified.**

A Company	B Joint Venture	C Close Corporation
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A. Certificate for company

I,, managing director of the board of directors of
....., hereby confirm that by resolution of
the board taken on 20. . ., Mr/Ms, has been duly authorized to
sign all documents in connection with this tender and any contract resulting from it on behalf of the company.

As witnesses:-

1.
Managing director

Date**B. 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 and any contract resulting from it on our behalf.

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

C. Certificate for close corporation

We, the undersigned, being the key members in the business trading as
.hereby authorize Mr/Ms
., to sign all documents in connection with the tender and any contract resulting from it on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

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

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

The Tenderer's attention is drawn to Clause F.3.3 of the Standard Conditions of Tender referenced in the Tender Data regarding the Employer's handling of material deviations and qualifications.

These amendments and qualifications, if accepted by the Employer, will be incorporated in the Acceptance Form as Deviations.

Page	Clause or item	Proposal

Tenderer's Experience

RS009

RS009.1 LIST OF PROJECTS OF SIMILAR PROJECT CARRIED OUT OVER THE PAST 5 YEARS :3MILLION

1. Tenderers must take care to provide accurate information in this return. Incorrect contact details of references listed will have a negative impact on scoring.
2. Table RS009.1.1 is a statement of similar work successfully executed by the Tenderer. If the space provided is insufficient, add more projects on a separate sheet by photocopying this template.
3. The Tenderer must indicate the numerical list number out of a given total number of lists submitted on the right top corner of each list.
4. The Tenderer should also indicate duration of each project in weeks as this will be used to calculate the number of years of relevant experience.
5. The total number of weeks will be converted by the number of years by dividing by 52.

Table RS009.1.1: List of Contracts of similar nature with annual contract value greater than R3 million over the past 5 years

Employer:	Contact person (Employer's Agent)	Description of contract (name of project)	Project Value (incl. VAT)	Completion Date	Duration (weeks)
1. Employer's name:	Consultant's name:				
Contact:	Contact:				
Tel:	Tel:				
Cell:	Cell:				
Fax:	Fax:				
2. Employer's name:	Consultant's name:				
Contact:	Contact:				
Tel:	Tel:				
Cell:	Cell:				
Fax:	Fax:				
3. Employer's name:	Consultant's name:				
Contact:	Contact:				
Tel:	Tel:				
Cell:	Cell:				
Fax:	Fax:				
4. Employer's name:	Consultant's name:				
Contact:	Contact:				
Tel:	Tel:				
Cell:	Cell:				
Fax:	Fax:				
5. Employer's name:	Consultant's name:				
Contact:	Contact:				
Tel:	Tel:				
Cell:	Cell:				
Fax:	Fax:				
Total duration in number of weeks (for official use only)					

Key personnel**RS010****RS010.1 LIST OF KEY PERSONNEL ASSIGNED TO THE CONTRACT**

1. Provide relevant information as prescribed below for the following Key Persons proposed in the tender to fulfil the following positions:
2. Curriculum Vitae of all proposed staff need to be attached.

Table RS010.1.1: *List of personnel to be assigned to this project*

Name	ID No.	Current Position	No. of Years Employed	Qualifications / Experience
CATEGORY 1 – CONTRACTS MANAGER AND SITE SUPERVISOR				
1.				
2.				
3.				
4.				
CATEGORY 2 – HEALTH AND SAFETY STAFF				
5.				
6.				
7.				
CATEGORY 3 – ELECTRICIAN				
8.				
9.				
10.				
CATEGORY 4 – SUPPORT STAFF				
11.				
12.				
13.				
14.				
CATEGORY 5 – ARTISANS				
15.				
16.				
17.				

3. The undersigned, who warrants that he / she is duly authorized to do so on behalf of the Tenderer, confirms that the contents of this schedule are within his / her personal knowledge and are to the best of his / her belief both true and correct.
4. Attach a proposed organogram to this page.

RS010.2 CURRICULUM VITAE OF KEY PERSONNEL

CV's and certified qualifications and ID of each key personnel member must be submitted,

CV's and Certified Qualifications of each key personnel member must be submitted.

- Contracts Manager/Site Agent
- Electrician
- Artisan
- Health and Safety Staff

Contractors shall employ in labour-intensive works only those supervisory and management staff that have completed the required Skills Programme in terms of Appendix C of the "Guidelines for the implementation of labour intensive infrastructure projects under the Expanded Public Works Programme (EPWP) Third Edition 2015":

- Foremen / Supervisors at NQF level 4 "National Certificate: Supervision of Civil Engineering Construction Processes";
- Site Agent / Construction Manager at NQF level 5 "Manage Labour-Intensive Construction Processes" or equivalent Quality Council for Trades and Occupations (QCTO) qualifications at NQF level 5 or 7.

Evaluation Schedule 4: Plant and equipment

Tenderers to furnish with their tenders a complete list of the major items of plant and equipment which they propose to use in the work. After his tender has been accepted, the Contractor must satisfy the Project Manager at all times that such plant and equipment, or its equivalent, is available for use.

TYPE OF PLANT	MAKE & DESCRIPTION	NUMBER	
CATEGORY 1 – PLANT		Owned	Hired
CATEGORY 2 – EQUIPMENT		Owned	Hired

Failure to do so may lead to no points being allocated.

Declaration of Tenderer's Past Supply Chain Management Practices

RS011

- 1 This Municipal Tendering Document must form part of all Tenders invited.
- 2 It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.
- 3 The Tender of any tenderer may be rejected if that tenderer, or any of its directors have:
 - a. abused the municipality's / municipal entity's supply chain management system or committed any improper conduct in relation to such system;
 - b. been convicted for fraud or corruption during the past five years;
 - c. willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
 - d. been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).
- 4 In order to give effect to the above, the following questionnaire must be completed and submitted with the Tender.

Item	Question	Yes	No
4.1	Is the tenderer or any of its directors listed on the National Treasury's database as a company or person prohibited from doing business with the public sector? (Companies or persons who are listed on this database were informed in writing of this restriction by the National Treasury after the <i>audi alteram partem</i> rule was applied).	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.1.1	If so, furnish particulars:		
4.2	Is the tenderer or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)? (To access this Register enter the National Treasury's website, www.treasury.gov.za , click on the icon "Register for Tender Defaulters" or submit your written request for a hard copy of the Register to facsimile number (012) 3265445).	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.2.1	If so, furnish particulars:		
4.3	Was the tenderer or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?	Yes <input type="checkbox"/>	No <input type="checkbox"/>

4.3.1	If so, furnish particulars:		
4.4	Does the tenderer or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.4.1	If so, furnish particulars:		
4.5	Was any contract between the tenderer and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.5.1	If so, furnish particulars:		

CERTIFICATION

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

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

.....
Signature

.....
Date

.....
Position

.....
Name of Tenderer

Declaration of Interest

RS012

1. No bid will be accepted from persons in the service of the state¹.
2. Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in service of the state, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority.
3. In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.
 - 3.1 Full Name of bidder or his or her representative:.....
 - 3.2 Identity Number:
 - 3.3 Position occupied in the Company (director, trustee, shareholder²):.....
 - 3.4 Company Registration Number:
 - 3.5 Tax Reference Number:.....
 - 3.6 VAT Registration Number:.....
 - 3.7 The names of all directors / trustees / shareholders members, their individual identity Numbers and state employee numbers must be indicated in paragraph 4 below.
 - 3.8 Are you presently in the service of the state? **YES / NO**
 - 3.8.1 If yes, furnish particulars.....

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

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

² Shareholder” means a person who owns shares in the company and is actively involved in the management of the company or business and exercises control over the company.

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

3.9.1 If yes, furnish
particulars.....

3.10 Do you have any relationship (family, friend, other) with persons in the service of the state and who
may be involved with the evaluation and or adjudication of this bid? **YES / NO**

1.10.1 If yes, furnish
particulars.....

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

3.11.1 If yes, furnish
particulars.....

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

3.12.1 If yes, furnish particulars.....

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

3.13.1 If yes, furnish particulars.....

3.14 Do you or any of the directors, trustees, managers, principle shareholders, or stakeholders of this
company have any interest in any other related companies or business whether or not they are bidding
for this contract. **YES / NO**

3.14.1 If yes, furnish
particulars.....

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

Full Name	Identity Number	State Employee Number

.....
Signature

.....
Date

.....
Capacity

.....
Name of Tenderer

Certificate of Independent Bid Determination

RS013

I, the undersigned, in submitting the accompanying bid:

(Bid number and description)

In response to the invitation for the bid made by:

(Name of Municipality/ Municipal Entity)

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

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

1. I have read and I understand the contents of the certificate;
2. I understand that the accompanying bid will be disqualified if this certificate is found not to be true and complete in every respect;
3. I am authorized by the bidder to sign this certificate, and to submit the accompanying bid, on behalf of the bidder;
4. each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of and to sign the bid. On behalf of the bidder;
5. for the purposes of this certificate and the accompanying bid, I understand that the word “competitor” shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:
 - (a) Has been requested to submit a bid in response to this bid invitation;
 - (b) Could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
 - (c) Provides the same goods and services as the bidder and/or is in the same line of business as the bidder.
6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium³ will not be construed as collusive bidding.
7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement with any competitor regarding:
 - (a) Prices
 - (b) Geographical area where product or service will be rendered (market allocation)
 - (c) Methods, factors or formulas used to calculate prices;
 - (d) The intention or decision to submit or not to submit a bid;
 - (e) The submission of a bid which does not meet the specifications and conditions of the bid; or
 - (f) Bidding with the intention not to win the bid.
8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.

9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
10. 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.
11. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the competition Act No. 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the prevention and combating of Corrupt Activities Act No. 12 of 2004 or any other applicable legislation.

Signature

Date

Position

Name of Tenderer

Quality Assurance and Environmental Management**RS014**

1. Quality assurance systems employed by the Bidder in his office in order to ensure compliance with stated employer's requirements ISO 9001: 2008 Certification: Bidders who are certified as being compliant to the International Organization for Standardization's ISO 9001: 2008 quality management standard, will score higher in the functionality. Proof of certification or application with evidence of previously started process must be attached in order to qualify for functionality points. The extent of the use of this system must be attached in order to qualify for higher scores.
2. Bidders who are following a quality management standard as set out by CESA/SAB TACO will be deemed to be adequate if they indicate the extent of the use of this system which must be attached in order to qualify for satisfactory score.
3. Proof of certification of the tendering entity and it sub-contractor(s) or JV partner(s) must be submitted with the tender.
4. Note: Where the entity Tendering is a joint venture, provided one of these parties is ISO 9001: 2000 certified, and it has been indicated on the work plan submitted that the party will take responsibility for quality management.

5. Does the Tenderer have a quality management system which is certified in terms of ISO 9001: 2008

.....

YES	NO
-----	----

.....

6. If "yes", Tenderer to supply brief summary of structure of system

.....

.....

.....

.....

.....

.....

.....

7. If "no", does the Tenderer intend to apply for certification?

By when?.....

YES	NO
Date	

OR

8. If "no", does the Tenderer have its own system?

YES	NO
-----	----

9. If "yes", please supply details of the system

.....

.....

.....

.....

.....

11. Does the Tenderer have an environmental management system which is certified in terms of

ISO 14 000

YES	NO
-----	----

12. If “yes”, Tenderer to supply brief summary of structure of system:

.....

.....

.....

.....

.....

13. If “no”, does the Tenderer intend to apply for certification?

By when?.....

OR

YES	NO
Date	

14. If “no”, does the Tenderer have its own system?

YES	NO
-----	----

15. If “yes”, please supply details of the system

.....

.....

.....

.....

16. *If the Tenderer does not intend to apply for certification it shall submit details of the quality / environmental management system presently in place.*

17. *[The Tenderer shall insert here a copy of the company’s quality assurance plan, control procedures and the relevant documentation supporting its commitment to environmental management. In the event of these documents being too extensive to be included in the procurement document, an abbreviated version of the master document will be included, referring to the master document.]*

Name: Signature: Date:

Position:Tenderer:

.....

Declaration of Competency on Health and Safety Requirements

RS015

Tenderer to provide a declaration on his competencies in establishing and maintaining a Health and Safety plan as required in terms of the Construction Regulations of 2014.

In order to demonstrate these competencies, the Tenderer is to provide with his tender (and attached to this page as a separate document) brief statements as to a safety plan and how the safety management systems will work and what control procedures they plan on using to ensure safety on the construction site.

The following generic aspects should be covered in the safety plan:

- What administrative procedures the Contractor envisage to use in the implementation and maintenance of the safety plan with reference to the construction site.
- How continuous assessment of the safety plan will be assessed and implemented with respect to construction site.
- What control systems the Contractor envisage to implement on site to support his safety program.
- How the Contractor will ensure that he adheres to the construction regulations in respect of competent persons for appointments.
- What external resources the Contractor envisage on using to ensure successful implementation and sustainability of the safety plan.
- What training to employees the Contractor envisage and how he would go about to execute it.
- The Contractor should indicate which competent (as described in the OSH Act) persons he currently has in his employ or he plans on employing and attach abbreviated Curriculum Vitae of these persons.

DECLARATION BY TENDERER

We further declare that we have the competence and necessary resources to carry out work safely in compliance with the Construction Regulations 2014 and that an approved Health and Safety Plan will be submitted prior to commencing with this contract.

Signature

Date

Form of Acceptance& Declaration

RS016

The Municipal Manager
King Cetshwayo District Municipality
Private Bag X1025
RICHARDS BAY
3900

I/We.....
..... **(To be completed) (Representative or Company name)**

The undersigned, having examined the Specification, hereby offer to supply the Municipality with the requirements called for on the Municipality's Form of Tender "Part T" and the Contract "Part C", in accordance with the conditions of this tender.

I/We further undertake that this offer shall not be retracted or withdrawn from the closing date of this Tender up to the order date.

I/We further undertake, in the event of the acceptance of this Tender, either wholly or in part, to enter into a formal contract, if required, and to provide a good and sufficient surety for the due fulfillment of the contract to the satisfaction of the Municipality.

I/We also agree:

- (a) that if the Tender be accepted, the acceptance may be communicated to us by letter through the post and that in such case the Post Office shall be regarded as our agents and delivery of such acceptance to the Post Office shall be treated as delivery to us;
- (b) The Municipality chooses as its "domicilium citandi et executandi" for the purpose of the contract, the following address:

King Cetshwayo District Municipality
Private Bag X 1025
RICHARDS BAY
3900
- (c) the law of South Africa will govern the contract created by acceptance of our Tender and we agree to submit to the jurisdiction of the South African Courts;
- (d) that if our Tender be accepted by the Municipality either wholly or in part, and the acceptance be notified to us, we undertake to be bound by the term of the agreement constituted by our said Tender and the acceptance thereof by the said Municipality, until a formal contract has been executed between us and the Municipality, and that if we are not required by the Municipality to execute such formal contract, we undertake to be bound by the terms of the agreement constituted by our said Tender and the acceptance thereof by the said Municipality.

I/WE ALSO DECLARE THAT:

- 1) the information provided is true and correct;
- 2) the signatory to the Tender document is duly authorized;
- 3) I/we are registered for Workmen's Compensation and the valid original (or valid certified copy) of the Workmen's Compensation Commissioner's Letter of Good Standing is attached. When applicable the option to submit an original or certified copy of the letter from the agent authorized by Workmen's Compensation Commissioner will be accepted

In the case where it is not possible for a tenderer to obtain the above letter of good standing from the Workmen's Compensation Commissioner, an affidavit is to be submitted advising that the business has registered with the Workmen's Compensation Commissioner.

In the case where a business does not employ any employees an affidavit together with a letter from the Workmen's Compensation Commissioner addressed to the business, confirming that registration is not required, must be submitted.

- 4) documentary proof regarding any tendering issue will, when required, be submitted to the satisfaction of the relevant organ of state;
- 5) My municipal rates and taxes are paid up to date and the required proof is attached:

A. TENDERER IS LANDOWNER FOR PURPOSE OF CONDUCTING BUSINESS FROM ITS PREMISES

- A.1 In the case where the tenderer owns the property from which the tenderer's business operates from, an original or certified copy of the tenderer's business most recent municipal account indicating the status of payment of all municipal rates and taxes i.e. property rates, electricity, water, refuse & sewer from the Municipality in which jurisdiction the said property is situated, must be submitted.

NB: Should there be **separate** tax invoices from the municipality for property rates and services (taxes), you are required to submit the most recent of each of these invoices.

OR

B. TENDERER IS THE TENANT FOR PURPOSE OF CONDUCTING ITS BUSINESS FROM PREMISES

- B.1 In the case where the tenderer does not own property and is a tenant for the purpose of its business establishment, the tenderer to provide an original or certified copy of a certificate from its landlord certifying that all the tenant's payments in respect of all municipal rates and taxes i.e. property rates, electricity, water, refuse & sewer are paid up to date, or
- B.2 In the case where the tenderer as tenant is responsible for its own municipal accounts with the municipality then tenderer to provide an original or certified copy of the letter from the landlord certifying the above together with all most recent relevant municipal invoices i.e. property rates, electricity, water refuse & sewer.

Signed _____

Date _____

Name _____

Position _____

Tenderer _____

Failure to complete, sign and date this form may result in the tender being considered non-responsive in terms of subclause F.3.8 of the Conditions of Tender and such a tender shall be rejected.

Technical and Methodology**RS017**

The approach paper must respond to the scope of work (ref: C3: Scope of work).

As the contents of a approach paper give a clear first hand impression about the capability of the tenderer, the tenderer is expected to submit an organized well-written proposal (approach paper) using proper separators for each of the sections and annexures (if there is any).

Its description must cover how the Contractor, if appointed, would:

broadly demonstrates understanding of the key aspects required for the execution of the project and

produce a work plan that adequately outlines the methodology to be used, but only in broad principles.

Tenderers are not limited to the considerations discussed above, and should feel free to add to the above bullet-pointed list. Insights are sought.

The description of the approach would need to be between 2 to 5 pages. A limited number of diagrams (additional pages for this purpose are permitted) can supplement the text.

Approach Paper

The scoring of the approach paper will be as detailed hereunder:

Table 10.1

Evaluating Point		Assessment Criteria and points per criterion	Maximum allocated point(s)
Understanding of the key aspects	O&M knowledge	Understanding of O&M principles (1 point), informative relevance of proposed approach and presentation (2 points)	3
	Risks	Understanding of programme risks (1 point) and relevance of mitigation options(1 point)	2
	Organogram for the proposed project team	Provided all key staff (1 point), layout of project structure responsibilities, skills levels and linked according to the job responsibilities in a summarised suitable format e.g. (table) (2 point)	3
Work plan	Methodology to be adopted	Presentation of a typical work order in terms of:	
		<ul style="list-style-type: none"> a project schedule - Relevance of identified tasks, deliverables, milestones and timeliness (2 points) understanding of stakeholders and appropriate stakeholder management plan (1 point) communication plan (1 point) skills transfer plan (2) 	7
	Total Points		15

PART C1: AGREEMENTS AND CONTRACT DATA

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IMPORTANT NOTE ON C1.1:

ALL Tenderers MUST complete and sign Form A: OFFER (the first page hereafter).

Form B: ACCEPTANCE will be signed by the Employer and then only in the case of the successful Tenderer.

Form C: SCHEDULE OF DEVIATIONS must be signed by the Employer as well as the successful Tenderer after award of the contract.

Form D: CONFIRMATION OF RECEIPT must be signed by the successful Tenderer on receipt of a fully completed original copy of the Agreement including the Schedule of Deviations, if any.

A tenderer in which Form A: OFFER has not been completed and signed by the Tenderer, will not be valid and will be disqualified in the discretion of the Employer.

C1.1 FORM OF OFFER AND ACCEPTANCE

A. OFFER

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract for the procurement of

TENDER NO. KCDM/06/2023: TENDER FOR THE APPOINTMENT OF MECHANICAL AND ELECTRICAL CONTRACTORS FOR PROVISION OF MAINTENANCE SERVICES (WATER AND SANITATION) FOR PERIOD OF 3 YEARS ENDING JUNE 2026 IN KING CETSHWAYO DISTRICT MUNICIPALITY

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

By the representative of the Tenderer, deemed to be duly authorized, signing this part of this Form of Offer and Acceptance the Tenderer offers to perform all of the obligations and liabilities of the Service Provider 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 VAT IS:

(in words)

.....Rands;

(in figures) R

Escalation after 1 year.....%

Escalation after 2nd year.....%

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

Signature(s)

Name(s)

Capacity **For the Tenderer:**

(Insert name and address of organization)

.....

Name & Signature of Witness

Date

For official use		
INITIALS OF KCDM OFFICIALS AT THE TENDER OPENING SESSION		
1.	2.	3.

Form B: ACCEPTANCE

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

The terms of the contract are contained in:

- C.1 Agreement, and Contract Data, (which include this Agreement)
- C.2 Pricing Data, including the Bill of Quantities
- C.3 Scope of Work

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

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

The Tenderer shall within two weeks after receiving a completed copy of this Agreement, including the Schedule of Deviations (if any), contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of any other 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 and unless agreed mutually elsewhere in writing between the Employer and the Tenderer, this agreement comes into effect on the earliest of: (a) Two weeks following the date on which the tenderer acknowledges the receipt of a formal letter awarding the contract; (b) the date when the tenderer receives one fully completed original copy of this document, including the schedule of deviations (if any). Unless the tenderer (now contractor) within five working days of the date of receipt of either the letter from the Employer alluded to in (a) or the document alluded to in (b) above 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, effective from the date of signature below by the Employer.

Signature: *(of person authorized to sign the acceptance)*

Name: *(of signatory in capitals)*

Capacity: *(of Signatory)*

Name of Employer: *(organization)* King Cetshwayo District Municipality

Address: Corner of Kruger Rand & Barbados Bay Road, CBD, Richards Bay or Postal Address: Private Bag X1025, Richards Bay, 3900. **Telephone number:** 035 7992500. **Fax number:**

AS WITNESS

Signature: **Name:** *(in capitals)*

Date:

Form C: SCHEDULE OF DEVIATIONS

The extent of deviations from the tender documents issued by King Cetshwayo District Municipality prior to the tender closing date is limited to those permitted in terms of the Tender Data and the Conditions of Tender.

A Tenderer's covering letter will not necessarily be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid become the subject of agreements reached during the process of offer and acceptance, the outcome of such agreement shall be recorded here.

Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the tender documents and which it is agreed by the Parties becomes an obligation of the contract shall also be recorded here.

Any change or addition to the tender documents arising from the above agreements and recorded here shall also be incorporated into the final draft of the Contract.

1. **Subject:**
 Details:

2. **Subject:**
 Details:

3. **Subject:**
 Details:

4. **Subject:**
 Details:

5. **Subject:**
 Details:

6. **Subject:**
 Details:

7. **Subject:**
 Details:

By the duly authorized representatives signing this Schedule of Deviations, King Cetshwayo District Municipality and the Tenderer agree to and accept the foregoing Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and addenda thereto as listed in the Tender Schedules, as well as any confirmation, clarification or change to the terms of the offer agreed by the Tenderer and King Cetshwayo District Municipality during this process of offer and acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the Tenderer of a completed signed copy

of this Agreement shall have any meaning or effect in the contract between the parties arising from this Agreement.

FOR THE TENDERER:

Signature:

Name:

Capacity:

Tenderer: *(Name and address of organization)*.....

Witness:

Signature:

Name:

Date:

FOR KING CETSHWAYODISTRICT MUNICIPALITY

Signature:

Name:

Capacity:

Witness:

Signature:

Name:

Date:

Form D: CONFIRMATION OF RECEIPT

The Tenderer, (now Service Provider), identified in the Offer part of this Agreement hereby confirms receipt from the Employer, identified in the Acceptance part of this Agreement, of one fully completed original copy of this Agreement, including the Schedule of Deviations on this

FOR THE CONTRACTOR:

Signature:

Name:

Capacity:

Signature and name of witness:

Signature:

Name:

C1.2 CONTRACT DATA

The Conditions of Contract are the General Conditions of Contract for Construction Works, Third Edition, 2015 published by the South African Institution of Civil Engineering, Private Bag X200, Halfway House, 1685, is applicable to the Contract and is obtainable from www.saice.org.za

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

PART 1: DATA PROVIDED BY THE EMPLOYER

REF. CLAUSE NO.	DATA BY EMPLOYER
1.1.13	The Defects Liability Period is: 3 months (after work completion) 12 months for new works
1.1.1.15	The name of the Employer is: King Cetshwayo District Municipality
1.1.1.26	The Pricing Strategy is: Re-measurement
1.2.1.2	The address of Employer:
	<u>Physical:</u> <u>Postal:</u>
	Prince Mangosuthu House, Cnr Krugerrand & Barbados Bay Streets, CBD, Private Bag X 1025
	RICHARDS BAY, 3900 RICHARDS BAY, 3900
	Telephone No: (035) 799 2500 Fax No: (035) 799 1409
4. Clauses 4.1.1 and SCC 4.1.1:	CONTRACTOR'S GENERAL OBLIGATIONS The penalty for failing to achieve the monetary value of the target set by the Employer for local labour content in terms of Part F: Requirements of the Expanded Public Works Programme (EPWP) of section C3.3 Particular Specifications in Part C3: Scope of Works, is 5% of the monetary value by which the achieved monetary value falls short of the target monetary value.

REF. CLAUSE NO.	DATA BY EMPLOYER
5.3.1	The documentation required before commencement with Works execution are:
	<ul style="list-style-type: none"> • Health and Safety Plan (Refer to Clause 4.3) • Initial programme (Refer to Clause 5.6) • Cash flow projection aligned to programme • Operational plan • Response management system
5.8.1	Non-working days are: Sundays The special non-working days are: Public holidays and the year-end break which commences on the first working day after 15 December and ends on the first Tuesday after 5 January of the next year.
5.13.1	The penalty for failing to complete the Works will be the lesser of R2 000.00 or 0.05% of the offered total of prices excluding VAT per calendar day.
5.16.3	The latent defect period is: 10 years
6.5.1.2.3	The percentage allowances to cover overhead charges: <ul style="list-style-type: none"> • 10% of the gross remuneration of workmen and foremen actually engaged in the day-work; and • 7.5% on the net cost of materials actually used
6.10.1.5	The percentage advance on materials not yet built into the Permanent Works is: 80% provided a session in favour of the Employer is provided from both the supplier and the Contractor.
6.10.3	The retention money: The percentage retention on the amounts due to the Contractor is 10% up to a limit of 5% of the contract value with 50% being released on issuing of Certificate of Completion.
6.10.5	The defects Liability Period is specified as being 3 Months for all repairs and 12 Months for all new works.
8.6.1	INSURANCE EFFECTED BY THE EMPLOYER <p>a) Notwithstanding anything elsewhere contained in this Contract without limiting the obligations liabilities or responsibilities of the Contractor in any way whatsoever (including but not limited to any requirement for the provision by the Contractor of any other insurances) the Employer shall effect and maintain as appropriate in the joint names of the Employer the Contractor and where the relevant Sub-contractors the following insurances which are subject to the terms, limits, exceptions and conditions of the Policy.</p> <p>CONTRACT WORKS AND SASRIA SPECIAL RISKS Insurance - which will provide cover against accidental physical loss or damage to the Works, Temporary Works and materials intended for incorporation in the Works.</p> <p>PUBLIC LIABILITY Insurance - which will provide indemnity against legal liability in the event of accidental death of or injury to third persons and/or loss of or damage to third party property arising directly from the execution of the contract and occurring during the period of insurance with a limit of indemnity of R3 000 000.00 in respect of all claims arising from any one occurrence or series of occurrences consequent on or attributable to one source or original cause.</p>

REF. CLAUSE NO.	DATA BY EMPLOYER						
	<p>b) The Employer shall pay the premium in connection with the insurance affected by the Employer. A provisional sum is included in the Bill of Quantity and will have to be paid over to the Insurance Brokers by the awarded contractor.</p> <p>c) The Contractor shall not include any premium charges for this insurance except to the extent that he may deem necessary in his own interests to effect supplementary insurance to the insurance effected by the Employer. The Employer reserves the right to call for full information regarding insurance costs included by the Contractor.</p> <p>d) Any further clarification of the scope of cover provided by the Policies arranged by the Employer should be obtained from the Employer or their Insurance Brokers, Sankofa Insurance Brokers, Telephone (011) 025 6566 e-Mail nngwenya@sankofaib.co.za.</p> <p>e) In the event of any occurrence which is likely to or could give rise to a claim under the insurances arranged by the Employer the Contractor shall:-</p> <p>(i) in addition to any statutory requirement or other requirements contained in the Contract immediately notify the Employer's Insurance Brokers or the Insurers by telephone, telex or telefax giving the circumstances nature and an estimate of the loss or damage or liability;</p> <p>(i) complete a Claims Advice Form available from the Insurance Brokers to whom the form must be returned without delay; and</p> <p>(iii) negotiate the settlement of claims with the Insurers through the Employer's Insurance Brokers and shall when required to do so obtain the Employer's approval of such settlement.</p> <p>The Employer and Insurers shall have the right to make all and any queries on the site of the Works or elsewhere as to the cause and the results of any such occurrence and the Contractor shall co-operate in the carrying out of such enquiries.</p> <p>f) The Contractor will be liable for the amount of the Deductible (First Amount Payable) in respect of any claim made by or against the Contractor or Sub-contractors under the insurance effected by the Employer.</p> <p>The Deductible (First Amount Payable) for which the Contractors are responsible and which are applicable in respect of each and every occurrence or series of occurrences attributable to one source or original cause giving rise to loss or damage or liability indemnifiable are as follows: -</p> <p>1) Under the Contract Works Insurance shall be:-</p> <table data-bbox="523 1989 1072 2092"> <tr> <td>i) Elemental perils</td> <td>R 5 000.00</td> </tr> <tr> <td>ii) Theft, Malicious Damage</td> <td>R 5 000.00</td> </tr> <tr> <td>iii) Any other Cause</td> <td>R 5 000.00</td> </tr> </table>	i) Elemental perils	R 5 000.00	ii) Theft, Malicious Damage	R 5 000.00	iii) Any other Cause	R 5 000.00
i) Elemental perils	R 5 000.00						
ii) Theft, Malicious Damage	R 5 000.00						
iii) Any other Cause	R 5 000.00						

REF. CLAUSE NO.	DATA BY EMPLOYER
	<p>2) Under the Public Liability Insurances in respect of loss of or damage to property shall be:-</p> <p>i) Underground Services R 5 000.00</p> <p>ii) Any Other Cause R 5 000.00</p> <p>3) Under any other insurance shall be as specified in such insurance policy.</p> <p>g) Any amount which becomes payable to the Contractor or any of his Sub-contractors as a result of a claim under the Contract Works Insurance shall if required by the Employer be paid net of the Deductible to the Employer who shall pay the Contractor from the proceeds of such payment upon rectification repair or reinstatement of the loss or damage but this provision shall not in any way affect the Contractor's obligations and liabilities or responsibilities in terms of the Contract.</p>
8.6.1.1.3	R Nil
10.4	Dispute resolution by amicable settlement.
10.5.3	The number of Adjudication Board Members to be appointed is: Nil
F1.11 Refer to Requirement s of the Expanded Public Works Programme (EPWP)	Penalty applicable to any shortfall in the local labour content achieved The specified minimum percentage of local labour content is 100
1.1.1.14	Time for achieving Practical Completion of the whole of the Works shall be determined and agreed on by both the Contractor and Employer on allocation of the works: _____ (June 2026)

PART 2 : DATA TO BE PROVIDED BY CONTRACTOR

REF. CLAUSE No	DATA BY CONTRACTOR
1.1.1.9	Name of Contractor:
1.2.1.2	Address of Contractor:
	<u>Physical</u> : <u>Postal</u> :

	<u>e-mail</u> :
	<u>Telephone</u> No: <u>Fax</u> No:

C1.3 CONDITIONS OF CONTRACT

The Conditions of Contract are the CIDB Standard for Uniformity for Construction Procurement, Board Notice 136 Government Gazette No 38960 of 10 July 2015

The additional clauses to the General Conditions of Contract are:

PREAMBLE

The Special Conditions of Contract contains clauses hereinafter defined and forms an integral part of the Conditions of Contract. In the case of any discrepancy or conflict with any part of the General Conditions of Contract, the Special Conditions of Contract shall take precedence and shall govern.

CONTRACTOR'S RESPONSIBILITY FOR SETTING OUT

The Contractor shall take special precautions to protect all permanent survey beacons, bench-marks, stand boundary pens and trigonometrical beacons regardless whether such pegs or beacons were placed before or during the execution of the contract. If any such beacons or pegs which would not otherwise have been affected by construction of the works, have been disturbed by the Contractor or his employees, the Contractor shall have them replaced by a registered land surveyor at his own cost.

NATURAL VEGETATION (ADDITIONAL SUB CLAUSE)

Add new Clause 8.1.6

"The Contractor shall confine his operation to as small an area of the site as may be practical for the purpose of executing the works.

Only those trees and shrubs directly affected by the works and such others as the Engineer/Employer may direct in writing shall be cut down and stumped. The natural vegetation, grassing and other plants shall not be disturbed other than in areas where it is essential for the execution of the work or where directed by the Engineer".

ENGAGEMENT OF EMPLOYEES

DELAY THROUGH OPPORTUNITIES AFFORDED TO OTHER PERSONS

"Whenever the Contractor considers that he is suffering a delay in the smooth running of his work as the result of the execution of any work on the Site by other persons he shall report to the Engineer/Employer in writing within twenty-four (24) hours of the occurrence thereof the circumstances and extent of such delay. The Engineer/Employer shall take such steps to resolve the problem as he considers necessary. Failure on the part of the Contractor to report to the Engineer/Employer such delay at the time of its occurrence shall invalidate any claim to attributed to time delays."

SCC 4.1.1 Extent of Contractor's obligations

Add the following new paragraphs to the end of Clause 4.1.1:

"If the Contractor fails to achieve the monetary value of the target set by the Employer for local labour content in terms of the Requirements of the Expanded Public Works Programme (EPWP) in the Particular Specifications, the Contractor shall be liable to the Employer for a sum calculated in accordance with the Contract Data and the aforementioned Scope of Works as a penalty for such underachievement.

Add new Clause 4.11.2

“The Contractor shall at all times exercise strict control over his employees to prevent, as far as possible, any unruly or unlawful behaviour by or amongst the labourers, local community members or leadership thereof and other employed by him.

The Contractor shall not engage or otherwise employ on the Works any person who, at the time of signing the contract, was employed by the Employer upon the Works, unless the Contractor obtains the written consent of the Employer or Employer’s Representative in respect of the employment of such person”.

INSURANCES

Clause F.2.9 will be superseded by a principle controlled construction insurance which is provided by the King Cetshwayo District Municipality on all contracts.

Note to compiler with regard to the following additional Special Conditions of Contract:

The following additional Special Conditions of Contract are to be included in every Open Tender document, irrespective of the estimated value of the Works.

Additional Special Conditions of Contract

The following additional Special Conditions of Contract clauses SCC 1.1 and SCC 5.3 shall apply only in those circumstances where the Employer is required to apply for a construction work permit in terms of Construction Regulation 3(1):

SCC 1.1 Definitions

Delete the entirety of Clause 1.1.1.5 and replace it with the following:

“SCC 1.1.1.5 “Commencement Date” means the date 42 calendar days after the date that the Agreement, made in terms of the Form of Offer and Acceptance, comes into effect.”

SCC 5.3 Commencement of the Works

SCC 5.3.1 Commencement of the Works

Upon the Employer’s Agent’s instruction, the Contractor shall, save as may be otherwise provided in the Contract, or be legally or physically impossible, commence carrying out the Works. **Such instruction shall be provided not later than 14 days after the Commencement Date.** Such instruction shall be subject to:

SCC 5.3.1.1 The timely submission by the Contractor, and approval by the Employer’s Agent, of documentation required before commencing to carry out the Works and before the Employer applying for a permit to do construction work, as set out in the Contract Data,

SCC 5.3.2 Unacceptable documentation

If the documentation referred to in Clause SCC 5.3.1 is not submitted within the number of days stipulated in the Contract Data from the date that the Agreement, made in terms of the Form of Offer and Acceptance, comes into effect, or if such documentation is found to be unacceptable, the Employer may terminate the Contract in terms of Clause 9.2.

SCC 5.3.3 Time to instruct commencement of the Works

Where the Contractor delays the submission by the Employer of the application for a permit to do construction work and such permit is not received within **14 days following the Commencement Date** such that the Employer’s Agent’s instruction to commence carrying out the Works cannot be given, without prejudice to the Employer’s rights to terminate the contract under Clause 9.2, the Employer’s Agent shall delay issuing the instruction to commence carrying out the Works until such time as the permit to do construction work has been received. The Contractor shall have no entitlement under Clause 5.12 to an extension of time for Practical Completion.

Where the permit to do construction work is not received within the 14 day period following Commencement of the Contract for reasons not attributable to the Contractor, the Employer’s Agent shall delay the instruction to commence the Works and the Contractor shall be entitled to make a claim in accordance with Clause 10.1.”

CESSION FOR CASH ADVANCEMENTS

No cessions for cash advancements will be entertained by the employer for whatever reason. Cessions will only be accepted for payment of material and nominated sub-contractors, and payment will only be effected on delivery and fixing of material in the required position.

OCCUPATIONAL HEALTH AND SAFETY ACT

The Contractor shall comply with all the requirements of the Occupational Health and Safety Act (Act No. 85 of 2014) and the Regulations framed there under.

The Contractor shall also ensure that any Sub Contractor employed by him shall also comply with the Act and the Regulations.

The contractor shall submit an approved Health and Safety plan prior to commencement with this contract.

TENDER ACCEPTANCE

The Employer does not bind itself to accept the lowest tender or any tender or furnish any reasons for the acceptance or rejection of any tender.

Objective

The objective of King Cetshwayo District Municipality's targeted procurement policy is to bring about meaningful transformation in built environment construction industry through the following:

- Meaningful Economic Participation;
- Transfer of Technical, Management and Entrepreneurial Skills; and
- Creation of sustainable Large Black Enterprises

The employer's objectives are also to deliver public infrastructure and services using labour-intensive methods in accordance with EPWP Guidelines

Labour-intensive works

Labour-intensive works comprise the activities such as those described in SANS 1921-5, Earthworks activities which are to be performed by hand, and its associated specification data. Such works shall be constructed using local workers who are temporarily employed in terms of this Scope of Work.

LABOUR INTENSIVE CONSTRUCTION REQUIREMENTS

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.

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 N° R63 of 25 January 2002, as reproduced below, shall apply to works described in the scope of work as being labour intensive and which are undertaken by unskilled or semi-skilled workers.

1 Introduction

- 1.1 This document contains the standard terms and conditions for workers employed in elementary occupations on an Expanded Public Works Programme (EPWP). These terms and conditions do NOT apply to persons employed in the supervision and management of a EPWP.
- 1.2 In this document –
- (a) “department” means any department of the State, implementing agent or contractor;
 - (b) “employer” means any department, implementing agency or contractor that hires workers to work in elementary occupations on a EPWP;
 - (c) “worker” means any person working in an elementary occupation on a EPWP;
 - (d) “elementary occupation” means any occupation involving unskilled or semi-skilled work;
 - (e) “management” means any person employed by a department or implementing agency to administer or execute an EPWP;
 - (f) “task” means a fixed quantity of work;
 - (g) “task-based work” means work in which a worker is paid a fixed rate for performing a task;
 - (h) “task-rated worker” means a worker paid on the basis of the number of tasks completed;
 - (i) “time-rated worker” means a worker paid on the basis of the length of time worked.

2 Terms of Work

- 2.1 Workers on a EPWP are employed on a temporary basis.

3 Normal Hours of Work

- 3.1 An employer may not set tasks or hours of work that require a worker to work–
- (a) more than forty hours in any week
 - (b) on more than five days in any week; and
 - (c) for more than eight hours on any day.
- 3.2 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.
- 3.3 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.

4 Meal Breaks

- 4.1 A worker may not work for more than five hours without taking a meal break of at least thirty minutes duration.
- 4.2 An employer and worker may agree on longer meal breaks.
- 4.3 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.
- 4.4 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.

5 Special Conditions for Security Guards

- 5.1 A security guard may work up to 55 hours per week and up to eleven hours per day.
- 5.2 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.

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.

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”).

8 Work on Sundays and Public Holidays

8.1 A worker may only work on a Sunday or public holiday to perform emergency or security work.

8.2 Work on Sundays is paid at the ordinary rate of pay.

8.3 A task-rated worker who works on a public holiday must be paid –

(a) the worker’s daily task rate, if the worker works for less than four hours;

(b) double the worker’s daily task rate, if the worker works for more than four hours.

8.4 A time-rated worker who works on a public holiday must be paid –

(a) the worker’s daily rate of pay, if the worker works for less than four hours on the public holiday;

(b) double the worker’s daily rate of pay, if the worker works for more than four hours on the public holiday.

9 Sick Leave

9.1 Only workers who work four or more days per week have the right to claim sick-pay in terms of this clause.

9.2 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.

9.3 A worker may accumulate a maximum of twelve days’ sick leave in a year.

9.4 Accumulated sick-leave may not be transferred from one contract to another contract.

9.5 An employer must pay a task-rated worker the worker’s daily task rate for a day’s sick leave.

9.6 An employer must pay a time-rated worker the worker’s daily rate of pay for a day’s sick leave.

9.7 An employer must pay a worker sick pay on the worker’s usual payday.

9.8 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 –

(a) absent from work for more than two consecutive days; or

(b) absent from work on more than two occasions in any eight-week period.

9.9 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.

9.10 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.

10 Maternity Leave

10.1 A worker may take up to four consecutive months’ unpaid maternity leave.

10.2 A worker is not entitled to any payment or employment-related benefits during maternity leave.

10.3 A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.

10.4 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.

10.5 A worker may begin maternity leave –

(a) four weeks before the expected date of birth; or

- (b) on an earlier date –
 - (i) 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
 - (ii) if agreed to between employer and worker; or
 - (c) 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.
- 10.6 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.
- 10.7 A worker who returns to work after maternity leave, has the right to start a new cycle of twenty-four months employment, unless the EPWP on which she was employed has ended.

11 Family responsibility leave

- 11.1 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.

12 Statement of Conditions

- 12.1 An employer must give a worker a statement containing the following details at the start of employment –
- (a) the employer's name and address and the name of the EPWP;
 - (b) the tasks or job that the worker is to perform; and
 - (c) the period for which the worker is hired or, if this is not certain, the expected duration of the contract;
 - (d) the worker's rate of pay and how this is to be calculated;
 - (e) the training that the worker will receive during the EPWP.
- 12.2 An employer must ensure that these terms are explained in a suitable language to any employee who is unable to read the statement.
- 12.3 An employer must supply each worker with a copy of these conditions of employment.

13 Keeping Records

- 13.1 Every employer must keep a written record of at least the following –
- (a) the worker's name and position;
 - (b) in the case of a task-rated worker, the number of tasks completed by the worker;
 - (c) in the case of a time-rated worker, the time worked by the worker;
 - (d) payments made to each worker.
- 13.2 The employer must keep this record for a period of at least three years after the completion of the EPWP.
- 13.3 The Contractor must keep in the project site office the minutes of site progress minutes; contractors' monthly site progress reports; accurately recorded attendance register; proof of payment as means to verify authenticity of data in the EPWP Beneficiary form submitted with payment certificates. Copies of submitted EPWP beneficiary data forms should also be kept in the site office.
- 13.4 This should be safely kept for job creation data verifications and periodical audits on projects conducted by National Department of Public Works and Auditors.

14 Payment

- 14.1 An employer must pay all wages at least monthly in cash or by cheque or into a bank account.
- 14.2 A task-rated worker will only be paid for tasks that have been completed.
- 14.3 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.
- 14.4 A time-rated worker will be paid at the end of each month.
- 14.5 Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.
- 14.6 Payment in cash or by cheque must take place –
- (a) at the workplace or at a place agreed to by the worker;
 - (b) during the worker's working hours or within fifteen minutes of the start or finish of work;
 - (c) in a sealed envelope which becomes the property of the worker.
- 14.7 An employer must give a worker the following information in writing –
- (a) the period for which payment is made;
 - (b) the numbers of tasks completed or hours worked;
 - (c) the worker's earnings;
 - (d) any money deducted from the payment;
 - (e) the actual amount paid to the worker.
 - (f) 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.
 - (g) 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.
- 14.8 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.
- 14.9 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.

15 Deductions

- 15.1 An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law.
- 15.2 An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.
- 15.3 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.
- 15.4 An employer may not require or allow a worker to –
- (a) repay any payment except an overpayment previously made by the employer by mistake;
 - (b) state that the worker received a greater amount of money than the employer actually paid to the worker; or
 - (c) pay the employer or any other person for having been employed.

16 Health and Safety

- 16.1 Employers must take all reasonable steps to ensure that the working environment is healthy and safe.
- 16.2 A worker must –
- (a) work in a way that does not endanger his/her health and safety or that of any other person;
 - (b) obey any health and safety instruction;
 - (c) obey all health and safety rules of the EPWP;
 - (d) use any personal protective equipment or clothing issued by the employer;
 - (e) report any accident, near-miss incident or dangerous behavior by another person to their employer or manager.

17 Compensation for Injuries and Diseases

- 17.1 It is the responsibility of the employers (other than a contractor) to arrange for all persons employed on a EPWP to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 2014.
- 17.2 A worker must report any work-related injury or occupational disease to their employer or manager.
- 17.3 The employer must report the accident or disease to the Compensation Commissioner.
- 17.4 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.

18 Termination

- 18.1 The employer may terminate the employment of a worker for good cause after following a fair procedure.
- 18.2 A worker will not receive severance pay on termination.
- 18.3 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.
- 18.4 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.
- 18.5 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.

19 Certificate of Service

- 19.1 On termination of employment, a worker is entitled to a certificate stating –
- (a) the worker's full name;
 - (b) the name and address of the employer;
 - (c) the EPWP on which the worker worked;
 - (d) the work performed by the worker;
 - (e) any training received by the worker as part of the EPWP;

- (f) the period for which the worker worked on the EPWP;
- (g) any other information agreed on by the employer and worker.

20 Contractor's default in payment to Labourers and Employees

- (a) Any dispute between the Contractor and labourers, regarding delayed payment or default in payment of fair wages, if not resolved immediately may compel the Employer to intervene.
- (b) The Employer may, upon the Contractor defaulting payment, pay the moneys due to the workers not honoured in time, out of any moneys due or which may become due to the Contractor under the Contract.

21 Provision of Hand tools, PPE and EPWP overalls

- (a) The Contractor shall provide his labour force with hand tools of adequate quality, sufficient in numbers and make the necessary provisions to maintain the tools in good and safe working conditions. All workers shall be provided with the necessary PPE and the standard EPWP two-piece orange overall set. The overalls should have the DPW logo on the left hand side, the EPWP logo on the right hand side (chest). "EPWP" should also be printed in Arial, Bold, Black on the back of the overall.

22 EPWP signage board

EPWP at the project level shall always be promoted through the projects signage board that embrace EPWP logo at the bottom, correct measurement for this signage board will be provided by the project leader during the site handing over meeting.

24 MINIMUM REPORTING

24.1 CONTRACTORS REPORT

The Contractor is required to complete a Contractors Report, which is to be submitted together with the Contractors Payment Claims all as per the "Reporting Schedule 1 - 5 (overall)" attached hereto. Payment of the contractor is conditional on the information being accurately and timeously provided.

24.2 PROGRESS REPORTS

Progress report detailing production output compared to the programme of works shall be submitted monthly.

24.3 WORKER CONTRACTS

All worker contracts for workers employed during the month must accompany the Reporting Schedule 1 - 5 attached hereto.

25 EPWP CONTRACT FOR LABOUR

It is compulsory that shortly after the contractor and/or sub-contractor has appointed local labour, the employment contract should be signed by both parties, prior to commencement with works on site. The employment contract forms part of the Ministerial Determination.

26 SKILLS DEVELOPMENT

EPWP Local labour needs to be capacitated with skills that will render them employable in the future. It is then the responsibility of the Contractor to ensure that the mandatory life skills are provided to

100% of workforce on site.

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

The latter is not mandatory to all as it covers technical skills. Few beneficiaries can be identified to undergo through further technical training to prepare them for opportunities as semi-skilled Artisans

C1.4.2 AGREEMENT OF INDEMNITY IN TERMS OF OCCUPATIONAL HEALTH AND SAFETY ACT 2014

THE KING CETSHWAYO DISTRICT MUNICIPALITY

duly represented herein by in his capacity as

..... (hereinafter referred to as "EMPLOYER")

and

.....

duly represented herein by in his capacity as

.....

(hereinafter referred to as the "MANDATORY")

The EMPLOYER and the MANDATORY hereby agree, in terms of the provisions of Section 37(2) of the Occupational Health and Safety Act 2014 (Act 85 of 2014, hereinafter referred to as “the Act”), that as far as the work described in 1 hereafter, the following arrangements and procedures shall apply between them to ensure compliance by the MANDATORY with the provisions of the Act, namely:

1. DESCRIPTION OF WORK :
.....
.....
.....
.....
.....

2. DEFINITIONS :

- 2.1. EMPLOYER : means any person who employs or provides work for any person and remunerates that person or expressly or tacitly undertakes to remunerate him, but excludes a labour broker as defined in Section 1(1) of the Labour Relations Act, 1956 (Act No 28 of 1956).
- 2.2. MANDATORY : includes an agent, a contractor or a sub-contractor for word, but without derogating from his status in his own right as an employer or a user.

3. ARRANGEMENTS AND PROCEDURES:

- 3.1. The MANDATORY as an employer in his own right, undertakes to acquaint the appropriate officials and employees of the MANDATORY with all relevant provisions of the Act and the regulations promulgated in terms of the Act;
- 3.2. The MANDATORY undertakes that all relevant duties, obligations and prohibitions imposed in terms of the Act and Regulations will be fully complied with;
- 3.3. The MANDATORY hereby accepts sole liability for such due compliance with the relevant duties, obligations and prohibitions imposed by the Act and Regulations and expressly absolves the EMPLOYER from itself being obliged to comply with any of the aforesaid duties, obligations and prohibitions; and
- 3.4. The MANDATORY 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 MANDATORY has complied with his undertakings as set out more fully in paragraphs 1 and 2 above, which steps may include, but not be limited to, the right to inspect any appropriate site or premises.
- 3.5. The MANDATORY undertakes to furnish the EMPLOYER with a letter of good standing in terms of Section 89 of the Compensation for Occupational Injuries and Diseases Act 2014 (Act No 130 of 2014) before any work in terms of this agreement is commenced.
- 3.6. The MANDATORY undertakes to appoint a designated responsible person in terms of the Act, and to furnish the EMPLOYER with a copy of such appointment before any work in terms of this agreement is undertaken

THUS DONE AND SIGNED AT RICHARDS BAY ON THIS DAY OF 20.....

AS WITNESSES:

1.
(For and on behalf of the **EMPLOYER**)
2.

THUS DONE AND SIGNED AT RICHARDS BAY ON THIS DAY OF 20.....

AS WITNESSES:

1.
2.
(For and on behalf of the **MANDATORY**)

C1.4.3 TRANSFER OF RIGHTS AND INDEMNITY FOR MATERIALS ON SITE

TRANSFER OF RIGHTS FOR MATERIAL ON SITE

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 effect 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.

The 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	QTY	RATE	AMOUNT	SUPPLIER
TOTAL VALUE OF MATERIALS AND GOODS					

Signed by Date
for and on behalf of the Contractor,

Witnesses by Date

INDEMNITY FOR MATERIALS ON SITE

We the....., (Bank or Insurance Company)

do hereby bind ourselves as surety in solidum and co-principal debtors to recompense the employer in the event of his not acquiring ownership of materials for whatever reason, or in the event of his lawfully being required to make payment of any sum of money to any third party in order to obtain or retain ownership of full and free possession of the said materials, in circumstances where the employer has paid the Contractor for the said materials on site in terms of Clause 52 (1)(e) of the General Conditions of Contract, and for all losses, damages and expenses that may be suffered or incurred by the Employer as a result of such payment for the said materials on site, renouncing all benefits from the legal exceptions ordinis se excursionis et divisionis “No value received” and all other exceptions which might or could be pleaded against the validity of this guarantee, with the meaning and effect of which exceptions we declare ourselves to be fully acquainted; provided that the liability of the undersigned under this guarantee is limited to and shall not exceed

R..... (.....)

and will lapse after issue of the Certificate of Completion of the Contract, unless the surety is advised in writing by the Employer before issue of the said Certificate of his intention to institute claims and the particulars thereof, in which event this guarantee shall remain in force until all such claims are paid or settled.

This undertaking is not negotiable or transferable and must be returned to us upon payment of the above-mentioned amount.

Bank/Insurance Company:

Address:

.....

Date:

C2 SCOPE OF WORK

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- 14. COMMISSIONING
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- 16. DOCUMENTATION
- 17. SERVICING
- 18. CPACITY BUILDING
- 19. MEETING AND PROGRESS REPORTING
- 20. PERFORMANCE CRITERIA

C2.1 STANDARD SPECIFICATIONS

1. General

- 1.1 This Standard Technical Specification contains the general requirements with regard to material, equipment, workmanship, installation and commissioning of the Works and should be read together with the Conditions of BID, Conditions of Contract and the Detailed Technical Specification.
- 1.2 Where any conflict may exist between the Standard Technical Specification and the Detailed Technical Specification, the relevant clauses of the Detailed Technical Specification shall take preference over the clauses contained in the Standard Technical Specification.
- 1.3 Should any conflict arise between the requirements embodied in this Standard Technical Specification and the Conditions of Contract, then the relevant clauses in the Conditions of Contract will take preference.
- 1.4 If at any stage of this contract it is found that the Contractor has deviated from the requirements of this specification, except for the exceptions as set out in par. 1.2 and par. 1.3 above, whether it be by the installation of equipment not specified, etc. or otherwise, without prior WRITTEN consent from the Engineer, the Engineer shall have the right to order the Contractor to remove such items, equipment, etc. constituting the deviation and replace it with the exact item, equipment, etc. specified, without any adjustment in the BID price.
- 1.5 The Contractor shall be responsible for the acquisition of adequate insurance cover that may be required for all equipment, in temporary storage and in transit, to and from the site, to be supplied in terms of this contract. In addition, the Contractor shall ensure that such insurance cover will include the transport of equipment by The District, should the Contractor request The District to assist in the transportation of any equipment at any time prior to the lapsing of the original maintenance period.

1. Regulations and Standards

2. Employment of Labour

It is the intention that this Contract should make the maximum possible use of the labour force which is at present underemployed.

To this end it will be expected of the Contractor to employ and train labour on this Contract.

The Contractor shall fill in the forms relating to Key Personnel and state how many key personnel he intends to employ in the various categories. The numbers stated in the above mentioned form will be strictly controlled during the contract period and any increase in numbers shall be subject to the approval of the Engineer.

It is a condition of contract that the data sheets detailing the employment of human resources, expenditure and employment of SMMES as detailed in the tables below be submitted together with the monthly certificate timorously to the Engineer by the 10th of each month.

The definition of youth being determined by age up to and including 35 years.

The unit of measurement is person days being the total number of persons in that category multiplied by the number of days worked by each person respectively.

Labour intensive construction will be used to implement the Works and will include all of the following operations: -

- (b) All trenching and backfilling of trenches. Excavation in hard, unpickable material and rock will be done by machine and blasting respectively;
- (c) All laying and bedding of pipework. The contractor is required to train local labour in the laying of these pipes;
- (d) Bedding, including the short haul by wheel barrow at a maximum distance of **100m**, of imported stockpiles placed alongside the trench;
- (e) Construction of manholes, valve chambers, gabion basket filling, erosion protection measures etc;
- (f) Manufacturing of pipe route markers on site; and
- (g) Steel fixing, shutter hand work and minor concrete works.

Plant may be used to deliver bedding to the trench at 100m intervals from where labour must be used to load, haul and off-load the material using wheelbarrows.

All work to be executed by labour intensive methods will be demarcated as **(LI)** in the bill of quantities. Any work so designated or specified in this specification as being done labour intensively but which is not executed by labour, notwithstanding any payment made to the labour, will not be paid for.

Local labour shall be recruited by the contractor with the assistance of the project manager, locally elected labour desk, and CLO. Wage tariffs must comply with Dept. of Labour rates as set for the Civil Engineering Construction Industry for KZN.

Appointment, Scope of Service and Remuneration

The Contractor shall undertake ad-hoc specialised electrical and mechanical repair and breakdown maintenance on all plants and equipment listed, on direction of the Engineer's representative. This shall be in the form of a duly authorised work request. Depending on the urgency, the Contractor shall be required to attend to the repair.

In light of the public health and community requirement for a reliable water and sanitation service, from time to time the contractor shall be required to provide twenty-four hour cover, seven days per week, for both the electrical and mechanical aspects of this contract – pre authorisation will be required for such work. It is an absolute condition that the Contractor shall respond to work issued according to the urgency;

- Extreme Urgency. The Contractor shall be required to respond immediately and commence repairs within 3 hours, irrespective of the time of day
- Moderate Urgency. The Contractor shall commence repairs with 12 hours or by the close of working hours on the following day.
- Planned Work. The work shall be undertaken on a programme as agreed with the Maintenance Engineer's representative.

NOTE: After-hours work shall require the approval of the **Maintenance Engineer (O&M)** or his representative.

The contractor shall, in the case of emergency repairs, continue to provide the service until the work is complete or upon authorisation of the **Maintenance Engineer's Representative**.

If during the execution of the Contract by reason of any accident or event occurring to or in connection with the works any remedial or other work or repair, which in the opinion of the Maintenance Engineer's Representative is urgently necessary, and the Contractor is unable to do such work or repair at once, the Employer may, through his own or other workmen, do such work or repair as the Engineer's

representative may consider necessary. If the work or repair so done by the Employer is work which, in the opinion of the Engineer, the Contractor was liable to do at his own expense in terms of the Contract, all costs and charges properly incurred by the employer in so doing (including the cost of the Engineer's time) shall be paid by the Contractor to the Employer. The Employer may also deduct such amount from any moneys due or which may become due to the Contractor, provided that the Engineer shall, as soon after the occurrence of any such emergency as may be reasonably practicable, notify the Contractor thereof in writing.

4. Quality Assurance (QA) *(Read with SANS 1921 – 1: 2004 clause 4.4)*

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

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

The Contractor(s) must issue certificate of compliance upon completion of the works. All work completed must have a guarantee of one year after installation.

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

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

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

5. Materials and Workmanship

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

Testing *(Read with SANS 1921 – 1 : 2004 clause 4.11)*

(a) Process control

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

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

(c) Acceptance Control

The process control test results submitted by the Contractor for approval of materials and workmanship may be used by the Engineer for acceptance control. However, before accepting any work, the Engineer may have further control tests carried out by a laboratory of his choice. The cost of such additional tests will be covered by a provisional sum provided in the schedule of quantities, but tests that failed to confirm compliance with the specifications, will be for the account of the Contractor.

1. Existing Services (*Read with SANS 1921 - 1 : 2004 clause 4.17*)

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.

No work may proceed on road crossings under the provincial main roads until the necessary approvals are in place as confirmed by the Engineer. All work within the road reserve shall comply with the specifications of the Provincial Department of Transport as will be issued to the Contractor by the Engineer.

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.

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 take note of the requirements of clause 1202 of the standard specifications with regard to services.

2. Occupational Health and Safety (Read With Sans 1921-1:2004 Clause 4.14)

It is a requirement of this contract that the Contractor shall provide a safe and healthy working environment and to direct all his activities in such a manner that his employees and any other persons, who may be directly affected by his activities, are not exposed to hazards to their health and safety. To this end the Contractor shall assume full responsibility to conform to all the provisions of the Occupational Health and Safety Act No 85 and Amendment Act no 181 of 1993, and the OHSA 1993 Construction Regulations 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 by executing the Agreement form C1.2.4 included in Section C1: Agreements and Contract Data.

Health and safety specifications and plans to be submitted at tender stage

(a) Employer's Health and Safety Specification

The Employees Health and Safety Specification will be included in the tender documents as part of the Project Specifications.

(b) Tenderer's Health and Safety plan

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

- (i) A proper risk assessment of the works, risk items, work methods and procedures in terms of Regulations 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 delay 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.

In addition, each Contractor LDV shall, at the Contractor's expense, be required to carry a basic first-aid kit and a fire extinguisher, suitable for extinguishing electrical and other fires.

Accidents Involving Contractor Staff

Should any accidents or incidents occur involving the Contractors staff, it shall be the Contractor's responsibility to take the necessary action to see to the care and well-being of those staff.

General Health and Safety Procedures

Where contractors are likely to be engaged in potentially hazardous work such as:

- a) Confined Space Entry
- b) Hot Work
- (b) Excavation
- (c) Building
- (d) Hazardous Substances

The contractor or tenderers attention must be drawn to the following:

The basic plant safety requirements are that contractors (and staff) wear boots and overalls while carrying out their tasks, or alternatively, personal protective (PPE) such as gumboots, waders, etc. where specified. In addition, contractors shall issue their staff with PPE appropriate to the work to be carried out, as required by the OHS Act.

The Responsible person, appointed by the Contractor to supervise the Works, shall meet with the Superintendent and/or Works Area Engineer to discuss the work to be done. It is the responsibility of both parties to verify that the situation is safe. It is the responsibility of the Contractor to ensure, at all times, that unskilled or semi-skilled labourers are supervised by a properly trained and experienced supervisor. On completion of work the area is to be tidied, made safe and fully restored in terms of the Contract.

3. Requirements for Accommodation of Traffic

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

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

Accommodation of traffic, where applicable shall comply with SANS 1921-2: 2004: Construction and Management Requirements for Works Contracts, Part 2: Accommodation of Traffic on Public Roads occupied by the Contractor. The Contractor shall obtain this specification from Standards South Africa.

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

Failure to maintain road signs, warning signs or flicker lights, etc, in a good condition shall constitute ample reason for the Engineer to suspend the work until the road signs, etc, have been repaired to his satisfaction.

The Contractor may not commence constructional activities affecting existing roads before adequate provision has been made to accommodate traffic in accordance with the requirements of this document and the South African Road Traffic Signs Manual.

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

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

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

C2.2 PROJECT SPECIFICATIONS

PS.1 PROJECT DESCRIPTION

Prospective tenderers are hereby invited to tender on the operation and maintenance of mechanical and electrical for water treatment and wastewater treatment works for a period of three years.

The quantities indicated in the Schedule of Quantities are for adjudication purposes only and shall not be regarded as an indication of the eventual value of the work to be done.

Service

The services to be rendered in response to this specification comprise a three-year contract ending in June 2026 for the refurbishment upgrade, maintenance and project supervision of mechanical and electrical installations and equipment associated with the DISTRICT MUNICIPALITY installations, all accompanied by written reports. The service to be provided shall be deemed to include preventative maintenance, condition monitoring and emergency repairs. The Contractor shall have substantial capacity and facilities to handle all the equipment. Sub-contractors may be appointed for specialised activities, subject to the approval of the Engineer.

The contractor shall be required to carry out planned electrical and mechanical maintenance on all the plants and equipment identified. These services shall be carried out by qualified and experienced artisans who will work under the direct supervision of the relevant Superintendent/Foreman (appointed by the Engineer's Representative). This shall be the form of a duly authorised work request specifying the scope of work to be undertaken and the estimated duration of the task.

The Engineer at his discretion reserves the right to allocate any of the services described to other Contractors and may request the Main Contractor, again at his discretion, to be the supervisor and carry the responsibility for the guarantee as if this Contractor is the nominated Sub-Contractor or to appointed contractors from other districts nor to furnish a reason for requiring the specific service

Through this contract King Cetshwayo DM aims to upskill its staff and internal resources. As part of this submission the tenderer is expected to propose how that will assist the municipality to achieve its capacity building and skills transfer objectives during the duration of this contract.

PS.2 Site Description and access

The work to be undertaken is generally on existing works in the King Cetshwayo district Municipality. Access to the individual sites is good, it's within the urban areas of King Cetshwayo DM.

Works to be executed in the district for this particular contract is classified by supply areas. Namely:

King Cetshwayo District Municipality's Water Treatment Works

	Local Municipality	Urban Area		Network Size	Tick (the preferred Area)
1	Mfolozi		KwaMbonambi	<ul style="list-style-type: none"> • 1 x Sewer Pump Stations • 14 x Water Pump Stations • 1 x Package Plant • 12 x Borehole schemes 	
2	Umlalazi	2.1	Eshowe	<ul style="list-style-type: none"> • 10 x Sewer Pump Stations • 6 x Waste Water Treatment Stations • 27 x Water Pump Stations • 8 x Water Treatment Plants • 32 x Borehole schemes 	
		2.2	Gingindlovu		
		2.3	Mtunzini		
3	Mthonjaneni		Melmoth	<ul style="list-style-type: none"> • 2 x Waste Water Treatment Stations • 3 x Water Pump Stations • 2 x Water Treatment Plants • 15 x Borehole schemes 	
4	Nkandla		Nkandla	<ul style="list-style-type: none"> • 3 x Sewer Pump Stations • 3 x Waste Water Treatment Stations • 24x Water Pump Stations • 10 x Water Treatment Plants • 40 x Boreholes and Protected Springs schemes 	

As KCDM commissions new infrastructure addendums to the appointed contractors will be sent to include new infrastructure in the scope of work.

Minimum requirement of major Mechanical and Electrical Equipment & Tools**Mechanical**

- Fully equipped workshop with minimum of 2 ton crane
- Set of tools (spanner set)
- Induction heaters
- Welding mechanics – 3 phase
- Chain blocks from 1 ton to 2 ton

Electrical

- Fully equipped workshop
- Installation tester (400v)
- Set of electrician tools

PS.3 BIDED RATES AND ADJUDICATION

NB: *The quantities indicated in the Schedule of Quantities are for adjudication purposes only and shall not be regarded as an indication of the eventual value of the work to be done.*

- The Bidder shall complete the price schedules for each works and the District reserves the right to award the contract to different Bidders for different works
- This BID will be adjudicated based upon the offers received for each group of price schedules. The contract will be awarded group schedule-by group schedule.

PS.4 IMPORTANT INFORMATION

(a)The District reserves the right to deal with the Contractor and his principals throughout the duration of the contract.

(b)The services are required for a period of three years from the date of award and no specific quantity of work has been identified. Orders will be placed as and when required by the various Schemes of the Districts over the 3-year period.

PS.5 TRAINING

In terms of the requirements of this contract the Contractor may be required to facilitating training from time to time.

Such training shall include: operation, special maintenance requirements and aspects of design, fabrication and assembly.

PS. 6 Current Status and Extent of the Project

The Contractor shall record all service activity carried out and report any exception or condition that will require additional attention in order to maintain the equipment integrity and reliability. During planned maintenance, minor adjustments must be made, as needed, such as tightening loose guards, strapping of loose cables, etc.

The Manufacturer's servicing schedule is to be adhered to, where applicable.

Report back on servicing, to the Engineer's Representative, shall be as soon as possible. However, any safety hazard or situation requiring immediate attention shall be reported to the Engineer's representative immediately for authorisation to rectify.

Duration and Cost Estimate of Appointment

This appointment is based on the specialised work; the value of work will be on an as and when required basis. The duration of appointment is up to 30 June 2026. The appointment will be reviewed annually and can be extended annually upon an annual performance review. Non satisfactory performance could lead to termination of the contract.

Appointment, Scope of Service and Remuneration

The Contractor shall undertake ad-hoc specialised electrical and mechanical repair and breakdown maintenance on all plants and equipment listed, on direction of the Engineer's representative. This shall be in the form of a duly authorised work request. Depending on the urgency, the Contractor shall be required to attend to the repair.

In light of the public health and community requirement for a reliable water and sanitation service, from time to time the contractor shall be required to provide twenty-four-hour cover, seven days per week, for

both the electrical and mechanical aspects of this contract – pre authorisation will be required for such work. It is an absolute condition that the Contractor shall respond to work issued according to the urgency;

- **Extreme Urgency regarded as Emergency Work.** This is where a sudden failure of the equipment is affecting the service delivery, threat to life or threat to the environment. The Contractor shall be required to respond immediately and commence repairs within 3 hours, irrespective of the time of day. An Emergency order will have to be issued where later an official order will be generated in the system.
- **Moderate Urgency.** The Contractor shall commence repairs within 12 hours or by the close of working hours on the following day.
- **Planned Work.** The work shall be undertaken on a programme as agreed with the Engineer's representative.

NOTE: After-hours work shall require the approval of the Area Engineer (O&M) or his representative.

The contractor shall, in the case of emergency repairs, continue to provide the service until the work is complete or upon authorisation of the Engineer's Representative.

If during the execution of the Contract by reason of any accident or event occurring to or in connection with the works any remedial or other work or repair, which in the opinion of the Engineer's Representative is urgently necessary, and the Contractor is unable to do such work or repair at once, the Employer may, through his own or other workmen, do such work or repair as the Engineer's representative may consider necessary. If the work or repair so done by the Employer is work which, in the opinion of the Engineer, the Contractor was liable to do at his own expense in terms of the Contract, all costs and charges properly incurred by the employer in so doing (including the cost of the Engineer's time) shall be paid by the Contractor to the Employer. The Employer may also deduct such amount from any moneys due or which may become due to the Contractor, provided that the Engineer shall, as soon after the occurrence of any such emergency as may be reasonably practicable, notify the Contractor thereof in writing.

PS.7 TYPES OF REPAIRS

1. Planned maintenance (i.e. the fixed cost portion of this Contract) shall be carried out in accordance with the generic maintenance schedules.
2. Repairs (i.e. the variable-cost element of this Contract) shall include, but not be limited to;

Mechanical Repairs

- Packaging and seal replacements on pumps and valves
- Pump overhauls, including replacement of bearings, wear rings, volute casings, sleeves, shafts, etc
- Gearbox overhauls, including replacement of bearings, seals, gears.
- Repair or replacement of belts, couplings, drives chains and geared couplings.
- Belzona lining or rebuilding of volute casings and replacing impellers
- Valve overhauls, including non-return valves and actuated valves and pressure reducing valves.
- Pipework, structural steel repairs and boiler-making work
- Removal of pumps for repair by third parties, re-installation and commissioning and laser alignment where necessary.
- Installation and removal of plant and equipment by rigging

Electrical Repairs

- Motor rewinds and overhauls.
- panel component replacement (contactors, breakers, isolators, no flow protections, overloads, over and under voltage protection monitors, phase failures, etc.)
- Cable repairs and replacements
- Lighting repairs.
- Transformer maintenance which include oil sampling and purification annually
- Electrical portable hand-tools

- Motor control repair i.e. VSD's, soft starters, slip rings
- Maintenance of medium voltage circuit breakers
- Lightning protections
- Infra-red scanning
- Cable fault detection

Generators

- Service and maintenance to be conducted 250 run hours or once a year or whichever comes first.
- Repairs and maintenance once a month
- Supply batteries

Operational call-outs

- Pumps trip
- Pumps not functioning
- Repair/replacement level of measurement and controls.
- Investigation of unsatisfactory operating conditions.
- Assisting operations staff in emergency situations

Electrical Call-outs

- Faulty panel or level control components or settings.
- Motors tripped or burnt out.
- Power failures or re-sets.
- Urgent lighting repairs
- MV work may be sub-contracted to contractors that hold a valid certificate of competency issued by King Cetshwayo District Municipality. These are but not limited to, underground mains and substations maintenance.
- Cable repairs
- Reinstatement and tidy the area.

PS.8 BREAKDOWNS, CALLOUTS AND REPAIRS

Each job carried out under this part of the Contract shall have a Work Request form ("WR") and Job Sheet, on which work and progress is authorized and tracked.

Work Requests

Requests for work shall be generated by the Engineer or Engineer's Representative. The Work request books shall be provided by and at the Contractor's expense, in duplicate, carbonized books of 50, each pair of sheets uniquely numbered (WR followed by a five-digit number, starting at 10001) and carrying the following information:

- Name of facility
- Date of issue
- Name of equipment

Cost centre code

-
- Nature of work required
- Urgency (3hr, 24hr or planned)
- Name of Originator (Requester)
- Signed by Requester
- Date and time of request
- Engineer's approval

- Name of Receiver
- Remarks

The issuing of the Work request shall be done as follows;

1. The Employer's Representative will complete the Work Request form.
2. Depending on the urgency, the Employer's Representative shall call the Contractor's office with details of the request and/or a copy.
3. Technicians are at liberty to bring work to the attention of the Contractor on site. Where requests and approvals are given verbally, the date and time shall be recorded and the Employer's Representative shall fax the Work Request copy to the Contractor's office, within 24 hours or on the next working day.
4. Unless in the case of planned work, all repairs over shall require approval by the Engineer after submission of a cost estimate by the Contractor, before work is commenced. For breakdowns and emergencies, the Maintenance Engineer's Representative may give approval.
5. The copy or faxed copy of every Work request shall be included in the working file of each job submitted for payment.

Job Sheets

The Contractor shall compile a Job Sheet for each job carried out, in duplicate, with the following detailed information;

- Work Request numbers.
- Name of sub-contractor (if applicable)
- Labour hours for each category, with rates. Overtime hours to be indicated.
- Kilometres travelled, rate and sub-total of cost.
- Spares supplied, with details of supplier, invoice numbers, cost and total cost, including mark-up.
- Sub-contracted work repairs, with details of sub-contractor, invoice numbers, cost and total cost including mark-up.
- Sub-totals for each category and total costs, excluding VAT, to be shown.
- Authorization, on completion by the relevant technician.
- Approval by the Engineer

PS.9 Personnel and Company Capability Statement

The Contractor shall provide suitably qualified and experienced artisans and crews who are competent, able to work under their own supervision, will and able to liaise with the King Cetshwayo municipal staff. The Contractor shall have a suitably appointed office with telephone, fax and computer facilities. All administration of the Contract, including financial, shall be by means of suitable PC-based systems, such as MS Word, Excel, Pastel or similar. All monthly reports, quotes, estimates and correspondence shall be submitted to the Engineer's Representative electronically via e-mail, or by fax or hard copy when requested.

The Contractor shall be required to provide all PPE necessary to carry out this Contract. This will include, but not limited to, overalls, boots, gloves, masks, face-shields, goggles, safety belts etc. Contractor staff shall at all times wear appropriate PPE.

The basic and minimum clothing requirement for contractor staff is boots and overalls. Overalls shall be clearly marked, identifying the worker as an employee of the Contractor. Contractor staff shall be permitted to work in t-shirts, instead of overall jackets, where such attire does not compromise safety and working conditions. T-shirts shall also carry the Contractors name.

One exception will be breathing apparatus, the use of which will be in conjunction with the Employer's staff. Provision of breathing apparatus shall be at the Employers expense unless otherwise authorized by the Engineer's

C3.3 TECHNICAL SERVICE AND SUPPORT

Names, qualifications and experience of the person who would be assigned to provide the ad hoc, emergency, technical assistance.

Inter alia, the instructions for each component supplied and installed under the contract shall include the following:

- List of spares, tools and testing equipment supplied under the contract. This list shall include the full details referred to in the contract and relating to spares and testing equipment for mechanical and electrical plant and tools.
- List of spare parts and testing equipment which are not supplied under the contract, but which may be required for future major overhaul and/or testing of mechanical or electrical plant and equipment.
- List of "name plate data" giving full particulars of serial numbers and other descriptive data pertaining to the plant and equipment installed.
- List of points requiring lubrication, stating for each point the type and grade of lubricant recommended and full details as to quantity, timing and renewing of lubricant. Before typing the instructions, the Contractor shall contact the maintenance engineer responsible for the new works to obtain the name and brand of lubricants generally in use by the Employer and, wherever possible, suitable grades of lubricant of that particular brand shall be nominated by the Contractor in the instructions.
- Particulars of bearings, contacts and other moving parts with instructions relating to any special attention which may be required.
- Precautions to be taken in starting, running and stopping the plant or equipment, by automatic or manual control.
- Routine tests which the supplier recommends to be carried out on the plant to ensure that it is kept in good repair.
- Drawings depicting all pumps, motors, couplings, guards, bedplates and connecting pipework.
- Copies of all pump test sheets (signed by the manufacturer or agent's engineer in the case of factory testing of pumps)
- All dimensions of all switchgear, MCC's and switchboards and all other electrical equipment.
- Schematic diagrams of electrical equipment, control and protection systems and light and plug circuits.
- Wiring diagrams of all MCC's and switchboards, and all other electrical equipment, control and protection systems, and light and plug circuits.
- Cable schedule giving the description and length and tag number of every cable.
- Manufacturer's pamphlets and catalogues edited and clearly marked so as to describe the particular equipment and plant supplied. (NOTE: Pamphlets and printed catalogue data shall be bound into the instructions rather than pocketed with the drawings and all information in such pamphlets and catalogues which is relevant to this contract shall be clearly marked.) Information shown in 'general' catalogues and brochures that is not applicable to plant and equipment supplied and installed under this contract is to be neatly deleted.

The prices and rates tendered for the supply of plant and equipment will be deemed to include allowances for the supply of instructions in terms of this clause. However, an item has been included in the Bills of Quantities to cover the preparation and supply of instructions.

The operating instructions shall first be prepared in draft form and one copy shall be submitted to the Engineer at least four weeks prior to commissioning date for comment, amendment where necessary, and approval. Upon receipt of such approval, the operating instructions in book form shall be prepared by the Contractor and issued at least 7 days before the scheduled day of commissioning the plant.

2. Protection against Corrosion and Paint Coatings

Where corrosion of metal may be expected, the Contractor shall supply materials which are resistant to corrosion. Any material showing signs of corrosion, tuberculation or pitting before expiry of the Defects Liability Period must be replaced by the Contractor at no cost to the Employer. The Tenderer's prices will be held to include the cost of all painting or other surface treatment which is not separately specified or scheduled but which is nevertheless necessary for the protection of surfaces against corrosion.

The coating systems to be applied under this Contract shall be carried out strictly in accordance with the manufacturer's instructions which written instructions shall be obtained by the Contractor and a copy handed to the Engineer's Representative prior to commencing painting operations. Over-coating times shall be strictly adhered to.

3. Structural Steelwork

The design of structural steelwork and the materials and workmanship used in the construction of same shall comply with the requirements of Part B of The National Building Regulations (Act 103 of 1977 as amended).

In the case of welded connections, in addition to welds required for structural strength, a sealing weld shall be carried right around the connection so as to facilitate protection against corrosion.

4. Screwed and Socketed Steel Pipes and Malleable Cast Iron Fittings

Screwed and socketed mild steel pipes shall comply with the requirements of SABS 62 and shall be galvanized. Unless otherwise specified, all screwed and socketed pipes shall be of medium quality. Malleable cast iron fittings used in conjunction with screwed and socketed pipes shall comply with the requirements of SABS 509 and shall be galvanized

5. Steam, Gas and Compressed Air Pipework

Pipework for conveying steam, gas and compressed air in sizes up to and including 150 mm nominal bore shall comply with the requirements of SABS 62 for seamless steel pipes. Unless otherwise specified, these pipes shall be of heavy quality with flanged joints, the latter suitable for a working pressure of 2, 5 MPa.

6. Polyethylene Pipes and Fittings

Polyethylene pipes shall be of high density type complying with the requirements of this specification and shall be of type(s) and class(es) as specified for each application.

The manufacturer/supplier shall maintain a quality system that conforms to the requirements of the SABS ISO 9001:2000 or national equivalent. Applicable standard for manufacture of pipe shall be the SABS ISO 4427.

The Client (or the Engineer on his behalf) may, at its discretion, appoint an Inspection Officer/Inspection Body to carry out pre-delivery tests at the manufacturers/suppliers works.

The manufacturer/supplier shall allow the Inspection Officer/Inspection Body access to his works for the purpose of inspecting either during the course of manufacture or when completed and shall afford the Inspection Officer/Inspection Body all reasonable facilities.

Copies of all test schedules and manufacturers quality control records shall be available for examination by the Inspection Officer/Inspection Body.

7. Un-plasticised Polyvinyl Chloride Pipes and Fittings

Un-plasticised Polyvinyl Chloride (uPVC) pipes and fittings shall comply with the requirements of SABS 966 and shall be of the class(es) as specified for each application.

8. Copper Tubes

Copper tubes shall be of Class suitable to the plant operating conditions and conforming to SABS 460.

Where bends are required they shall be formed with a proper tube bending machine. Joints shall be brass compression fittings conforming to BS 864.

9. Valves

All valves shall be provided with individual test certificates for each valve from the manufacturer; and are to be inspected, and the hydraulic tests witnessed, by an Inspector to be appointed by the Engineer. The tendered rates for the valves shall include for making arrangements for independent inspections. The Inspectors' fee and recoverable expenses will be for the account of the Employer, fees and expenses arising from abortive or repeat visits due to non-compliance with the specified requirements will be for the Contractor's account and will be deducted from amounts due to the Contractor.

10. Bolts, Nuts and Washers

All bolts and nuts shall comply with the SABS 135. Washers shall be provided at each nut and shall be of the same material and coated where applicable to match the bolt and nut. Single coil square section spring washers shall be fitted to all nuts subject to vibration.

Bolts other than jacking bolts shall project not less than 3 mm and not more than 10 mm from the heads of the nuts after tightening.

The Contractor shall verify that the material of the bolts, nuts and washers used will not cause any galvanic action between itself and the surrounding material. Should galvanic action be possible, the Contractor shall provide suitable non-metallic sleeves and washers for such bolts.

11. Spares, Tools and Lubricants

Tenderers must submit in the appropriate Schedule a priced list of spare parts which it is recommended should be kept by the Employer for maintenance of the plant. All spares must be packed separately and the cases appropriately marked. All spares must be new and unused.

Tenderers must submit a price for any special spanners, keys and tools required for the operation, adjustment and overhaul of the plant supplied, together with a metal cabinet for same for mounting in a convenient position in a nearby building. All spanners, keys and tools shall be new and unused.

In addition to the lubricating oil to be provided for commissioning the plant (where applicable) an additional quantity of oil adequate for at least two complete refills of such plant must also be provided.

A grease gun suitable for use in conjunction with all the grease nipples on the plant must be provided together with at least 5 kg of the appropriate grease to be used. If more than one type of grease is required, a separate grease gun for each type of grease and 5 kg of each type of grease must be provided.

12. Electric Motors

The detailed specifications for the electric motors are included in the electrical specifications that form part of this document.

13. Pumps

The pumps offered shall be pumps of proven performance and preferably of standard design, except that the pumps must be located to suit the layout shown on the relevant drawing issued with the Tender Documents by the Engineer.

All parts are to be properly designed with ample margin of safety and are to be suitable for their pumping duties.

The speeds should preferably be as stated in the relevant clauses and should be such as to permit direct drive by a squirrel cage induction motor except in those cases where the drive is to be adapted to suit future changes in duty or where stated otherwise.

The pumps offered are preferably to be of the self-regulating type with a "stable" characteristic i.e. for any selected manometric head each pump shall be capable of pumping at only one rate. Performance particulars and characteristic curves for each type of pump shall be submitted at the time of tendering. Efficiencies should be as high as possible in the normal indicated operating range. These will be taken into account in the adjudication of tenders.

Wherever possible axial thrusts should be counteracted by hydraulic balancing rather than by thrust bearings. The pumps shall be statically and dynamically balanced.

The parts of each pump from suction inlet flange to delivery outlet flange shall be capable of withstanding the internal hydraulic pressures specified elsewhere or at least four times higher than those applicable under normal working conditions on the site, whichever is the higher.

14. Commissioning

- All equipment refurbished, upgraded or repaired in terms of the requirements of this contract shall be set up at the Contractor's or Sub Contractors works for thorough inspection and testing by the Engineer BEFORE being transferred to site. All work performed in the scope of this Contract is required to be reported upon in the form of acceptable reports/test certificates etc. at no extra cost.
- Any faults, deviations, etc. from the specification discovered during this inspection and testing opportunity at the Contractor's works shall be fully rectified BEFORE any equipment is transported to site.
- Final testing will be performed on site during commissioning of the installation.
- The Contractor shall submit all test and calibration certificates received from specialist suppliers to the Engineer for his approval.

15. Maintenance and spares

The Contractor shall provide for maintenance of the installation and any additional equipment supplied for a minimum period of one (1) year, commencing from the DATE OF COMMISSIONING of the completed installation.

In terms of the Special Conditions of Contract, the Contractor shall submit maintenance reports to the Engineer, using the maintenance schedules as prescribed by the Engineer. NO additional payment for the execution of said maintenance and inspection trips shall become due to the Contractor, unless by agreement with the Engineer these are deemed to be beyond the scope of the guarantee.

The Contractor shall only allow properly qualified and skilled staff to work on the equipment and installation.

The Contractor shall provide the spare equipment as listed in the paragraph: SCOPE OF SUPPLY. During the period of maintenance as described in par. 6.1, the Contractor shall be obliged to maintain all spare equipment in proper working condition.

16. Documentation

16.1 Operation Manuals

For each scheduled item of equipment a manual fully describing the operation, of that particular item is required. "Generalised" information is not acceptable. Drawings showing the assembly, function and number of each component are required. Where special tools, pressed fitting, rivets or welding have been used in assembly this must be clearly indicated. The manual must be presented before commissioning commences.

16.2 Maintenance and Servicing Manuals

For each item a manual containing routine maintenance and servicing information is required. Of particular importance is a checklist of items to be attended on a daily, weekly, monthly and annual basis. Lubrication types and positions of application should be clearly recorded. The purpose and method of routine adjustment for change in performance or for wear must be recorded. The manuals shall be presented before commissioning commences.

17. Servicing

Up to the time of handover the Contractor is responsible for servicing the equipment. This is intended to be during works commissioning. During the staff training period the Contractor shall remain responsible for supervising maintenance and servicing while the labour and materials shall be supplied by the employer.

After handover the Employer assumes responsibility for servicing according to the schedule set out in the manuals.

18. Capacity Building

Tenderer should propose mechanism by which capacity building of King Cetshwayo Staff at all levels can be undertaken as part of their work with King Cetshwayo DM.

19. Meetings and Progress Reporting

The Engineer's representative and Contractor shall meet on a monthly basis in order to process Job Sheets approvals, plan work and discuss work in progress.

Communication

- The Contractor shall provide the Employer with a list of names and contact numbers of those staff undertaking or supervising the activities of the Contract, as well as a roster of those on after-hours standby. Landline and fax as well as cellular phone contracts shall be required. The Contractor or standby staff shall at all times be available by cell phone.

- The Contractor shall provide an e-mail address for communication with the Employer and have the ability to send and receive scanned images.

20. Performance Review Criteria

The extension of this contract will be based on the performance of the contractor in line with the performance criteria outlined below.

The Contractor shall respond to work issued according to the level of urgency:

- **Extreme Urgency.** The Contractor shall be required to respond immediately and commence repairs within 3 hours, irrespective of the time of day
- **Moderate Urgency.** The Contractor shall commence repairs within 12 hours or by the close of working hours on the following day.
- **Planned Work.** The work shall be undertaken on a programme as agreed with the Engineer's representative.

Performance over the annual period will be recorded and monitored on a quarterly basis and reviewed on an annual basis.

The criteria below will form a basis for the performance review.

Task	Planned/repair	Level of urgency	Required response time	Actual Contractor response time	Quality of work	Reports received	Comments
pump repair	planned	As per programme		1 month			

1. ELECTRICAL EQUIPMENT

- 1.1 General electrical reticulation and lights.
- 1.2 Induction and synchronous motors.
- 1.3 Low voltage switchgear.
- 1.4 Medium voltage switchgear.
- 1.5 Transformers.
- 1.6 Generators.
- 1.7 Control panels for pump sets and valves.
- 1.8 Meters, general instrumentation and controllers.
- 1.9 Electrical circuits on other equipment (valves etc.).
- 1.10 Radio and telemetry equipment.
- 1.11 Instruments and computer controlled equipment.
- 1.12. Electrical Motors

2. MECHANICAL EQUIPMENT

(Pipelines are excluded from this tender except for plant based pipelines part of machinery)

- 2.1 Horizontal split, vertical, axial flow, single and multistage centrifugal pumps.
- 2.2 Positive displacement pumps.
- 2.3 Stationary diesel engines.
- 2.7 Valves to fit the relevant pipelines (in the plant)
- 2.7.1 Types of valves: Butterfly, gate, reflux, ball, sleeve and float control valves.
- 2.7.2 Electrically, hydraulically and air opened actuators for operation of the valves.
- 2.7.3 Trash racks/screens.

3 GENERAL

- 3.1 Water flow meters (ultrasonic, magnetic, differential pressure, propeller) for pipelines.
- 3.2 Water purification plants for bulk water supply purposes.

3.3 Sewerage plants.

REQUIREMENTS

SAFETY CONDITIONS

1. All work, materials and equipment **shall** comply with the relevant requirements of the Occupational Health and Safety Act (Act 85 of 1993).
2. It is the sole responsibility of the Contractor to ensure that the equipment to be serviced is safe to work on. The District does not and will not accept any liability.
3. It is an explicit condition of this BID that the Contractor is solely responsible for the safety of all personnel involved in the maintenance service or repair of equipment.
4. It is the Contractor responsibility to ensure that all possible safety procedures are followed when working on any equipment or structure and to bring unsafe conditions under the attention of the respective Scheme Manager before commencing any service or repair work whatsoever.
5. The work area has to be in a safe and clean order at all times.

GMR = General Machinery Regulations

1. It is an expressed condition that the Contractor shall execute the contract under the supervision of a person appointed under GMR 2(1).
2. A certified copy of this letter shall be submitted with the BID offer.
3. The minimum requirements which the District will consider for this "competent person" (GMR1) will be as stated in subparagraph (b) of GMR1 in mechanical engineering.

REPLACEMENT PARTS

1. All replacement parts shall be new, unused or fully refurbished and comply fully with the original manufacturers specifications or as otherwise stated by the Engineer.
2. Replacement parts will preferably be obtained from the original manufacturer or as otherwise approved by the Engineer.
3. If the original manufacturer is unable or unwilling to supply the parts as may be required, refurbished parts may be used subject to the written authority of the Engineer. The Contractor shall guarantee these parts for a period of no less than 12 months from date of installation or as otherwise specified in writing by the Engineer.
4. Any replacement part that was not obtained from the original manufacturer, as well as the supplier of the replacement part, shall be clearly specified on the service report.
5. Where spare parts are obsolete it is expected from the Contractor to reverse engineer components where possible and provide the necessary guarantee.
6. Materials used for repair during the period of maintenance.

When, in the opinion of the Engineer, any material used or intended for use is not in accordance with the requirements of the contract, he may order to Contractor in writing to remove any objectionable part of the material immediately and to replace it with acceptable material, without cost to the Employer.

INSPECTION AND MAINTENANCE

The recommendations as specified in this BID are supplementary and will be read in conjunction with the manufacturer's operation and maintenance instructions. The manufacturer's operation and maintenance instructions have preference.

MODIFICATIONS TO MANUALS

Any alteration to the operation and maintenance of any equipment shall be updated in the relevant Operation and Maintenance Manuals.

SERVICE PROGRAMME

All specifications shall be adhered to except if the Contractor wishes to follow a proven and generally accepted better method of operation, in which case it shall be to the approval of the Engineer.

ACTIVITIES

Using proven experience and ability the Contractor shall be able to evaluate malfunction, diagnose failure, repair, refurbish, upgrade, test, commissioning and provide skilled maintenance of the following plant equipment:

1. Compressors: Reciprocating, single/multistage centrifugal and lobe compressor units.
2. Switchgear.
3. Switchgear protection equipment.
4. Transformers: Up to 200 kVA.
5. Valves: Total refurbishment.
6. Small schemes/structures: Small sluice gates, screens, hydraulic equipment, etc.
7. Small electrical actuators.
8. Electric motors.
9. Diesel and petrol driven Gensets.
10. Diesel engines.
11. Internals of pumps.
12. Water purification plants/systems.
13. Sewerage plants/systems.
14. Electricity distribution systems for offices, personnel housing and all other relevant equipment.
15. Electrified security fencing.
16. Such equipment as may be specified from time to time by the Engineer.

Competence in providing the following engineering services:

1. Efficiency tests on pump sets.
2. Condition monitoring of pump sets with the issue of appropriate quality test reports.
3. Reports associated with condition of plant, review of modifications and reports/manuals.
4. Rebuilding of pumps to an alternative specification.
5. Balancing of rotating elements and alignment according agent's specification.
6. Vibration monitoring on rotating elements.
7. Non-destructive testing using ultra sonic, magnetic particle inspections, due penetrate testing, hardness testing and radiography methods by sub-contracting specialists.
8. Machine facilities: Light, medium and heavy machining facilities.
9. Corrosion protection coatings as specified by the KING CETSHWAYO DISTRICT MUNICIPALITY, (Blasting & Coating).
10. Mechanical, electrical and technical investigation expertise.
11. Mechanical manufacturing in accordance with drawings of the KING CETSHWAYO DISTRICT MUNICIPALITY of small structures.
12. Reverse mechanical engineering techniques.
13. Underground cable fault location.
14. Radio and telemetry equipment.
15. Instruments and computer controlled equipment.
16. Such engineering services as the Engineer may specify from time to time.

Competence in providing the following services:

1. Project management.
2. Preventative maintenance plans on small and medium size installations with regard to auxiliary and main equipment.
3. Liaison with original engineering manufacturers.
4. Implementation of statutory safety standards.
5. Working procedures on all relevant equipment.
6. Safety: All maintenance services must comply to the Occupational and Health Safety Act 85 of 1993.
7. Test reports: test reports shall be provided on all tests performed or as requested by the Engineer.
8. Existing documents: The District will furnish the necessary documents with regard to the form of reports, such as technical details, components, test results, items replaced and comments where possible.
9. New documents: Prospective Bidders should have the capabilities of drafting report documents/forms where no official documents currently exist including full Operating and Maintenance Manuals.

CAPACILITIES OF BIDDER

Managers

Managers of the bidder or of his subcontractors shall have an applicable qualification as prescribed by on the functionality criteria.

Engineers

Engineers of the bidder or of his subcontractors shall be at least Graduate Engineers preferably registered as a Professional Engineer with ECSA (where applicable).

Technicians

Technicians of the bidder or of his subcontractors shall be at least Diploma Technicians.

Artisans

Artisan staff of the bidder or of his subcontractors shall be in the possession of the qualifications appropriate to the skills required for the activities listed (Trade Test Certificates). An artisan qualified for example as a diesel mechanic is not suitably qualified to be considered an artisan on valves, cranes, welding, etc.

Specialists

Specialists (production specialist) of the bidder or of his subcontractors shall at least be a suitably qualified artisan or technician with a minimum of three years' experience in the applicable specialist field.

The District request details and qualifications of personnel working for the Contractor or any subcontractor.

Valves

All valves shall be provided with individual test certificates for each valve from the manufacturer; and are to be inspected, and the hydraulic tests witnessed, by an Inspector to be appointed by the Engineer. The tendered rates for the valves shall include for making arrangements for independent inspections. The Inspectors' fee and recoverable expenses will be for the account of the Employer, fees and expenses arising from abortive or repeat visits due to non-compliance with the specified requirements will be for the Contractor's account and will be deducted from amounts due to the Contractor.

Gate Valves:

Gate valves shall be double flanged and shall comply with requirements of SABS 664, and to Class 10, i.e. 1000 kPa working pressure for the suction valves except where otherwise specified. The class of delivery valves shall suit the maximum head expected in the system.

Valves shall be drop tight under test and working conditions and shall have non-rising spindle, wedge closure, and suitable for repacking under pressure. Bodies, gates and glands shall be cast iron or cast steel, spindles bronze, and seal rings on gate and body gunmetal or stainless steel.

All sluice valves shall be fitted with square caps or hand wheels as appropriate. The direction of rotation shall be *anti-clockwise for closing* when viewed from above. The direction of opening or closing of each valve, and the appropriate words shall be embossed on the cap and superfluous arrow heads shall be completely ground off the castings.

Gate valves shall be of the classes specified and shall be tested in accordance with SABS 191. The valves shall be subjected to both the "closed end" test and the "open end" test. There shall be no leakage under any of the test conditions.

Each gate valve shall be capable of being opened and closed by one man when the unbalanced head on the gate is equal to the rating of the valve as specified. If the design of the valves is such that gearing is necessary to achieve this, then the valves shall be equipped with machine-cut spur gearing and differential gear indicators.

All gate valves shall be double flanged with flanges drilled off-centre and with drillings to match existing flanges where applicable and/or to suit the pressure ratings of the valves. The non-rising spindles shall be bronze or stainless steel and the spindle nut either bronze or gun metal.

A complete specification, accompanied by drawings, is to be submitted at the time of tendering. Rates for all the gate valves shall include for testing and supply of test certificates, copies of which shall be attached to each relevant invoice and to each copy of each invoice. The open end test pressure shall be stamped on the top of one flange of each valve. No payment will be made for valves unless the test certificates have been submitted. Valves not complying with SABS 664 will be considered as an alternative offer provided full technical details are submitted with the tender. Resilient seal valves will not be accepted for this contract.

Butterfly Valves:

Butterfly valves shall be manufactured in accordance with BS5155 (cast-iron and carbon steel butterfly valves for general purposes), as far as is applicable. Where conflict exists, the requirements of this specification shall take precedence.

The following criteria for construction shall be met:

Body

These shall be of the wafer-lug type, with drilled/tapped bolt holes, to allow the valve to be used at the maximum pressures specified in terminal positions. This is to allow downstream pipework to be disassembled with the upstream pipework remaining under pressure.

Double flange valves and U-section wafer-type valves, as described in BS 5155 shall be acceptable, provided that:

The valve is suitable for individual bolting of each flange and, the dimension between the inside faces of the flanges is not less than 3D, where D is the diameter of the flange bolts as specified in SABS 1123.

The use of single flanged and flangeless valves shall be permitted only if provision is made for downstream pipework to be disassembled with upstream pipework under pressure.

Bodies shall be one piece casting Ductile Iron, UTS 400 MPa, YP250 MPa, (elongation 12%) GGG42, or equivalent for sizes up to ND 1 500. Sizes above ND 1 500 shall be of cast steel. Bodies shall never be in contact with the fluid conveyed and shall be fully protected internally by the resilient seat.

Disc

These shall be cast or stamped, spherically machined and positively splined or keyed internally to the driving shaft. (Use of plinths or bolts is totally prohibited).

Selection of the disc material shall be made, taking into account the aggressivity of the fluid. (Cupro-aluminium or stainless steel Grade 316 or equivalent). A suitably coated ductile iron disc will be considered.

Shaft

Butterfly valve technology shall "dry shaft" i.e. such that the shaft will never be wetted. The shafts shall be manufactured from stainless steel and shall be positively splined or keyed to the disc. The upper and lower shaft and tie-bolt, when assembled to the disc, shall give in effect a one-piece shaft/disc assembly.

The valves shall be capable of being easily operated by one person, against the maximum unbalanced pressure and the effort required to operate each valve shall not exceed a torque of 180Nm.

Liner

The resilient, synthetic rubber seat shall be easily replaceable (bonded liners are prohibited), and shall entirely cover the inside of the body overlapping over the sides to form the seal between the body and matching pipework.

Note that the dimensions of flanges to be used on connecting pipework shall comply with the relevant requirements of SABS 1123. The valve supplier shall ensure that the dimensions of the liner shall enable it to form the seal between the valve body and these flanges.

Where necessary, the liner shall be keyed to the body with annular grooves, in the bore of the valve. The design shall be such as to allow the disc to seal drop-tight to the liner, so that there is no ingress of fluid to the shaft area.

Valves with "O" ring shaft backup seals will not be acceptable. The valve manufacturer shall offer alternative grades to cope with the specified fluid(s).

General

Quarter-turn handles shall be supplied for valves up to and including ND 150. The handle shall be lockable in all intermediate positions and be adaptable to the valves.

For valves larger than ND 150, a gear shall be used. The gear operator shall be designed with a worm and nut system. The gear operator shall be irreversible in any position. The gear shall have a hand wheel and an indicator protected by Plexiglas or equivalent showing the position of the disc. If specified, limit switches shall be fitted, mounted in a waterproof and dustproof housing.

The pipe ND will be as specified in the Project Specification. The supplier shall ensure that the operation of the valve will not be impeded by the presence of cement mortar or other specified lining in the adjoining pies/fittings.

Air Valves:

The materials and workmanship employed in the manufacture of air valves shall be of a similar standard to that set out in SABS 664 for waterworks pattern gate valves.

Types of Air Valves:

Air Valves shall be fully stainless steel (including all flanges, bolts, nuts, studs etc), of the double orifice type, and shall be equal or similar to the "Vent-O-Mat" (RBX series) type in which a small orifice, manufactured from Grade 316 stainless steel and having a minimum orifice size of 2,0 mm diameter, shall be capable of releasing accumulations of air at all pressures throughout the specified working pressure range and shall be drop-tight at the specified minimum working pressure. The large orifice shall be suitable for admitting or expelling large quantities of air during emptying and filling of the pipeline. The opening of the valve (to atmosphere) shall be enclosed by a stainless steel mesh which has been fixed into the valve body to prevent the entry of small insects or vermin into the valve.

All welding of stainless steel shall be carried out in workshops dedicated to the fabrication of stainless steel products. Care shall be taken that the correct welding rods and approved welding procedures have been used for each application, and the Engineer shall have the right to request a certificate from the manufacturer in which the weld procedures used for the manufacture of valves supplied are stated.

All welds and weld beads, internal and external, shall be smoothed down by grinding and buffing. All stainless steel shall be pickled and passivated before the valve is assembled and tested.

Testing:

Each air valve is to be subjected to the following tests at the factory:

- a. First, fill the valve with water and apply the factory test pressure through the inlet of the valve. Under this condition there shall be no weeping from any part of the valve.
- b. Second, drain the valve and refill the valve with water and apply the maximum working pressure through the inlet of the valve and maintain for at least five minutes. Under this condition there shall be no loss of water from the valve.
- c. Third, gradually reduce the pressure applied under b) above to atmospheric pressure, empty the valve and refill slowly expelling the air through the valve until it is full of water. Raise the pressure to the minimum working pressure, maintain that pressure for at least five minutes and against there shall be no loss of water from the valve.
- d. Fourth, maintain the minimum working pressure applied in c) above, isolate the water inlet and introduce small amounts of compressed air into the valve without lowering the pressure in the valve. The lower float shall drop away from the upper float when sufficient air has accumulated in the valve. As soon as the accumulated air in the valve has discharged through the small orifice, the valve shall again close to a watertight condition. This process shall be repeated for at least five different pressures

which are equally spaced between the specified minimum and maximum operating pressures and the valve shall close automatically when all the air has escaped without any dribbling and shall have a drop-tight shut-off.

Reflux Valves:

Reflux valves shall, except where otherwise specified, be double flanged single door swing type and shall be fitted with gun metal seats and bronze hinge and clack pins. In the case of reflux valves to be mounted horizontally, the design shall be such that the gate rests against the seat in the absence of flow or of differential pressure, without the aid of springs or external counterweights. Reflux valves shall comply with the requirements of SABS 144 for working pressures as required for each application.

Reflux valves shall incorporate, inter alia:

Bronze bushes at each end of the shaft which are capable of being maintained via a removable flange.

Extended shaft to which is attached an adjustable lever arm and counter weight.

Manually operated bypass valve.

Coatings to Valves:

Before leaving the factory valve bodies shall be treated as follows:

Externally – one coat zinc chromate primer to SABS 679 Type I

Internally – Clause 1.6.4 – System 1

After installation, valves shall be further treated with one coat of undercoat and one coat of approved gloss finish.

Flanges

The dimensions and drilling of standard flanges shall comply with the requirements of SABS 1123, 16 bar rating. Flanges shall be machined flat, ie without a raised joint face. Puddle flanges shall have the same dimensions as standard flanges but shall be undrilled.

Faces of flanges which will be in contact with jointing gaskets shall receive a protective coating of such thickness and consistency as will not impair the air/gas/water tightness of the joint. Where flanged pipes and fittings are rubber lined the rubber lining is to be wrapped around from the barrel onto the face of the flange and that rubber will form the gasket.

Flanges are to be drilled “off-centre” ie off horizontal and vertical centrelines.

Joints and Flexible Couplings

Jointing Material for Flanged and Coupled Joints

Bolts for flanges shall comply with the requirements of SABS 1123 for the working pressures specified and shall furthermore, together with the nuts and washers used in conjunction therewith, be of the material as specified in Clause 1.6.18. The jointing gaskets shall comply with the requirements of the relevant SABS specification and shall be cut to fit inside the bolts.

Gaskets in flanged joints shall comprise EPDM compound “Klinger 80” to SABS 974: 1986/ ISO 4633 : 1983 and shall be inside bolt circle (not full face) gaskets.

All flexible/stepped couplings shall be as “Aqualok/Stepfit” (as manufactured by Rare Pipe Specials) or similar and approved and to the following minimum specifications:

Centre sleeve/body and endings: Rolled steel to SABS 1431: 1987 Grade 300W

Coatings (sleeve/body and endings):

Fusion-bonded epoxy to SABS 1217: 1986 minimum 300 microns externally

Each steel coupling shall be suitably protected externally by an approved anti-corrosion system after installation and the Tenderer is to include for his aspect in the pricing of the elements.

Bolts, Nuts and Washers

All bolts and nuts shall comply with the SABS 135. Washers shall be provided at each nut and shall be of the same material and coated where applicable to match the bolt and nut. Single coil square section spring washers shall be fitted to all nuts subject to vibration.

Bolts other than jacking bolts shall project not less than 3 mm and not more than 10 mm from the heads of the nuts after tightening.

Jacking bolts and holding down bolts to be built into concrete work as well as bolts to be installed under water shall all be of stainless steel Grade 304. Bolts for flexible couplings and flanges for underground installation shall be of Grade 4,6 steel hot-dip galvanized in accordance with SABS 763 and once fitted be given 2 coats of epoxy to give a dry film thickness of not less than 200 micron. Notwithstanding these requirements, the Contractor shall verify that the material of the bolts, nuts and washers used will not cause any galvanic action between itself and the surrounding material. Should galvanic action be possible, the Contractor shall provide suitable non-metallic sleeves and washers for such bolts.

Spares, Tools and Lubricants

Tenderers must submit in the appropriate Schedule a priced list of spare parts which it is recommended should be kept by the Employer for maintenance of the plant. All spares must be packed separately and the cases appropriately marked. All spares must be new and unused.

Tenderers must submit a price for any special spanners, keys and tools required for the operation, adjustment and overhaul of the plant supplied, together with a metal cabinet for same for mounting in a convenient position in a nearby building. All spanners, keys and tools shall be new and unused.

In addition to the lubricating oil to be provided for commissioning the plant (where applicable) an additional quantity of oil adequate for at least two complete refills of such plant must also be provided.

A grease gun suitable for use in conjunction with all the grease nipples on the plant must be provided together with at least 5 kg of the appropriate grease to be used. If more than one type of grease is required, a separate grease gun for each type of grease and 5 kg of each type of grease must be provided.

The spare parts to be offered shall not be limited to but shall include the following:

Centrifugal Pumps:

Impeller Shaft sleeves

Spacers Keys

Bearings Seals

Races Glands

Wearing rings Shaft

Two complete sets of gland packing and sufficient other parts for the complete replacement of all moving and wearing parts of one pump.

Electrical:

One set of bearings for each size of motor.

Two sets of fixed and moving main contacts for each type of contactor.

One set of fixed and moving auxiliary contacts for each type of contactor.

One operating coil for each type of contactor.

One set of fixed and moving contacts for each type of relay.

Two sets of HRC fuses for each size of fuse.

All spares that are ordered shall be supplied and handed over to the Employer. Each part shall be hermetically sealed and labelled by means of a metal label firmly affixed to it by wire. On each label shall be stated:

- The Manufacturer's name and address.
- The Manufacturer's catalogue or part number.
- A description of the spare part.
- A description of the particular equipment for which the spare is supplied and the Contract Bills of Quantities item number under which the particular equipment was supplied originally.
- The date of supply of the spare part.

Galvanising

Galvanizing shall be carried out strictly in accordance with the requirements of SABS 763 (hot-dip zinc coatings) for heavy duty applications.

The Tenderer shall submit the name of the Sub-Contractor contracted to perform the galvanizing, for approval by the Engineer. After delivery of the material to the galvanizing plant, the Contractor shall inform the Engineer, who will arrange for inspection of the equipment, should he so require to ensure compliance with SABS 763.

After galvanizing, the equipment shall be loaded carefully, making ample use of wooden spacers to prevent damage to the galvanized surface. Equipment with extensive damage to the galvanized surface will be accepted only after satisfactory re-galvanizing.

General requirements

Scope

This specification describes the usual materials required for the maintenance of electrical installations and general methods of installing these materials. This specification forms part of any specific maintenance contract, where such drawings are attached to this specification, or where such drawings are issued specifically for a project.

This specification covers the maintenance of electrical installations as well as all switchgear, equipment and instrumentation used in conjunction with such installations.

Statutory requirements

The maintenance and installation of electrical equipment shall always comply with the requirements, stipulations and regulations contained in the following acts:

Machinery and Occupational Safety Act 85 of 1993 with special reference to section 1 (Act & Regulations), Section 2 (Administrative Regulations), Section 6 (Electrical Installation Regulations), Section 13 (Driven Machinery Regulations), Section 14 (Electrical Machinery Installations), Section 15 (General Machinery Regulations) and Section 16 (General Safety Regulations).

Special mention is made to Annexure A1 of section 6, which will be applicable on completion of the work.

The Mines and Works Act, No. 27 of 1956 and subsequent amendments and regulations issued thereunder.

The Electricity Act No. 40 of 1958.

Explosives Act No. 26 of 1956.

Code of Practice for the Wiring of Premises – SABS 0142.

Standards

Unless otherwise specified all materials must comply with SABS specification.

ELECTRICAL REQUIREMENTS FOR BOREHOLE AND SMALL ELECTRICAL INSTALLATIONS

Standard drawings

Bidder's shall, however, prepare their own GA and diagrammatic drawings which shall contain all numbering and types of equipment to be used by them when a BID is prepared for the District. Also refer to the section on the submission of drawings further in this specification.

Earthing and Lightning Protection

This section covers the lightning protection and earthing of electrical installations in buildings, open structures or in "stand alone" installation such as borehole control panels or distribution or control gear pillars or kiosks. The earthing of all electrical installation shall be in complete accordance with SANS 0142 and the machinery and Occupational Safety Act 85 of 1993.

The earthing described further herein is mainly applicable to the general earth systems of the pump station, reservoirs, purification works and other treatment plants.

General

It is a specific requirement of this contract specification that all electrical installation maintained under this contract be properly earthed. This requires that the earthing shall be tested and where earthing is found incomplete or earth values found outside the acceptable limits, this be repaired or improved and that the earthing system(s) again be tested and the values submitted together with the regular site report.

General recommendations of the Practical Installation of Earth electrodes

This section describes the requirements of the practical earthing of installations and the materials which shall normally be used to obtain proper earthing.

Earth systems employed at the various installations which are maintained under this contract may vary in type and scope from the recommendations of this specifications and this specification must thus be used as a guideline to enable maintenance personnel to install or repair an earth system for compliance with the standard requirements and earth values as mentioned further herein.

Requirements of an effective earth

An effective earth must prevent dangerous over-voltages arising between metallic structures, frames, supports or enclosures of electrical equipment and the ground during fault conditions.

An effective earth must be able to permit fault currents of sufficient magnitude to flow so as to operate protective devices to isolate the fault before damage can occur.

The ohmic resistance of an effective earth must be low enough to ensure that the step potential on the ground in the vicinity of the earthing point is within safe limits under fault conditions i.e. a voltage gradient not exceeding 40 V/m fault durations exceeding 1 sec.

Types of earth electrodes

Three types of earth electrodes are suitable:

(a) Trench earths

Trench earths shall comprise a bare copper conductor laid at a minimum of 500 mm below ground level, usually when underground cables are installed. This type of earth electrode provides a relatively large contact area between electrode and surrounding ground, makes contact with a variety of types of soil and soils of varying moisture content and is economical to install.

(b) Spike earths

Spike earths comprise rods of bare copper, copper-coated steel, stainless steel or galvanised steel designed for the purpose of penetrating ground to depths of up to several metres. A low resistance earth may sometimes be obtained by driving multiple spikes at some distance from each other in order to provide parallel paths.

In hard or rocky ground, it is usually necessary to drill holes into which earth spikes are inserted and then packed with soft soil.

(c) Foundation earths

Foundation earths comprise bare copper galvanised iron conductors laid under the foundations of buildings, miniature substations, distribution pillars, bases of wooden, concrete or steel poles and structures. Because soil under foundations usually retains moisture, foundation earths are located to take advantage of this favourable condition. Furthermore, they are economical to install.

Materials for earth electrodes

Bare copper, either in stranded, strip or rod form, is considered the most suitable general-purpose material for earth electrodes. Its main disadvantage is its cost and susceptibility to theft.

Bare galvanised iron and steel, either in stranded, strip or rod form, has a satisfactory record of survival in non-aggressive soils and is more economical than copper.

Bare aluminium is unsuitable as electrode material.

Earthing electrodes used for earth systems shall preferably be solid steel with bonded copper protection.

The nominal diameter of earthing electrodes shall not be less than 16 mm unless the electrodes are specified for placing in pre-drilled holes in which event a minimum nominal diameter shall not be less than 12 mm.

Each earth electrode shall be provided complete with an earth electrode coupling supplied by the earth electrode supplier. The coupling shall be suitable to accommodate the earth wire specified, as well as the type and size of earth electrode used.

Each electrode designed for coupling by means of external sleeves shall be provided with an adequate quantity of hydro-carbon or silicone grease to be applied to the coupling before the joint is made.

Earth electrodes designed for coupling by means of internal pins or splines shall be provided with thin walled tubes and hydro-carbon or silicone grease to seal the joints.

The material of the clamps shall be electrically compatible with the electrodes and the conductor materials.

An adequate number of driving caps or bolts shall be supplied with the electrodes to protect the ends of the earthing electrodes whilst been driven into hard soil.

Corrosion

Because galvanised ferrous metals corrode sacrificially to copper, galvanised iron and steel electrodes should not be buried in close proximity to bare copper.

Technical Requirements of Neutral Earthing of Distribution System (Multiple Earthed Neutral (MEN) and Protective Multiple Earthing (PME) systems)

NOTE: The following relevant aspects have been extracted from the "AMEU CODE OF PRACTICE FOR THE APPLICATION OF NEUTRAL EARTHING ON LOW VOLTAGE DISTRIBUTION SYSTEMS"

Distribution equipment associated with transformer substations that are either ground mounted or pole mounted and fed by underground cable or overhead line, with or without an earth continuity conductor, (ECC), should be installed, connected and earthed in accordance with the following requirements:

- (i) Where the resistance to earth of the HV equipment earth is 1 ohm or less, it is permissible to earth the LV neutral to the HV earth electrode.
- (ii) Where the HV equipment earth exceeds 1 ohm the LV neutral shall be earthed at a minimum distance of 6 m from the HV equipment earth (i.e. 6m from the HV electrode/s and also from any earthed metal work connected thereto).
- (iii) Notwithstanding the requirements of (i) above, where transformers are associated with HV overhead lines, it is considered good practise to separate the HV and LV earth electrodes. The minimum earth separation should be 6m or 1 LV span.
- (iv) The overall resistance to earth of the neutral of an LV distributor or distribution system must not exceed 10 ohms.

- (v) The LV neutral may be connected to other supply neutrals, earth electrodes, cable sheaths and armouring and these connections used to obtain the required earthing value of 10 ohms or less specified in par. (iv) above.
- (vi) The neutral of underground and overhead LV distributors must be earthed at the remote ends of each distributor.
- (vii) Where the overall resistance to earth of the neutral of the distribution system exceeds 10 ohms, the neutral shall be earthed at intermediate positions on the distributor/s to reduce its resistance to earth to below this limit.
- (viii) The cross-sectional area of the neutral of all LV distributors must not be less than that of a phase conductor.
- (ix) No circuit breakers, isolators, fuses, switches or removable links shall be installed in the neutral between the transformer star point and the remote end of any LV distributor or service connection.
- (x) All metallic sheathing and armouring of cables and all metal work associated with meter cabinets, fuse pillars, etc., supporting or enclosing LV cables shall be bonded to the distributor neutral conductor.
- (xi) Where a separate Neutral Earth (SNE) cable is part of an MEN or PME system, the armouring and/or metallic sheath and any ECC shall be bonded to the neutral at the supply end of the cable.
- (xii) To ensure the integrity of the neutral, it is recommended that all connections and joints on or to overhead line conductors be made by compression fittings or, alternatively double bolted connectors.
- (xiii) MEN or PME may be applied to any single LV distributor without alterations to other LV distributors supplied from the same transformer.

Substation earthing

In order to comply with the requirements of the previous paragraphs, an earth receptivity measurement shall be undertaken at the site of a substation or miniature substation, preferably by a specialist firm.

The Contractor may undertake this measurement himself but in compliance with SANS 0142 by using the nul-balance megger method and employing test electrodes. The earth resistance measurement in this case shall preferably be 5, referred to zero.

The Contractor shall then submit to The District or Engineer the details of a proposed substation earth indicating whether a trench earth, spike earth or foundation earth is intended and the proposed inter-connections with the installation.

Fence Earth System of Outdoor Substations

In case where substations contain transformers or switchgear installed outdoors, the fence enclosure shall be earthed as follows:

A 70 mm² earth wire shall be installed 600 mm below ground level and 500 – 1 000 mm from the fence on the outside of the substation along the entire length of the fence. This earth loop shall be lugged and earthed at each corner pole of the wire mesh enclosure. The earth resistance of this installation shall preferably be <20Ω, referred to zero.

If a 20 Ω resistance cannot be obtained, then 1,8 m earth rods shall be installed at each corner post of the fence enclosure and bonded to the pole by means of a 70 mm² earth wire tail.

Such a fence earth system shall also be bonded to the main meter box earth point or 400 V switchgear earth bare of the substation (if available) by means of lugged 70 mm² earth wire.

This earth system shall further be earthed to the tank earth point of the transformer and the tank earth point shall be earthed to the neutral (star point) of the transformer, all by means of 70 mm² earth wire.

If the earth systems of the MV lightning arrestors are within 9 m of the fence earth system, the MV lightning arrestor earth shall also be bonded to the fence earth system. This connection shall only be carried out if ESKOM or the Supply Authority allows the Contractor to carry out this work.

Trench earth system

This section shall be applicable where pole mounted transformers and ESKOM meter boxes supply the power to a site.

Two separate 1,8 m earth electrode shall be placed at least 9 m apart and at 600 mm below ground level in the cable trench for the LV cables leading away from the transformer or meter to the main Board or motor control centre of the installation.

These earth electrodes shall be connected together with 70 mm² bare copper earth wire by means of clamping the earth wire to the earth electrode with standard earth electrode clamps and the earth wire shall further be laid in the trench together with the main cables to the main Board or motor control centre of the installation.

The earth electrode nearest to the ESKOM supply point shall be connected to the earth point in the ESKOM meter box.

All earth conductor ends connected to earth bars in meter boxes or Boards shall be lugged.

In the case where a fenced enclosure is used for a ground mounted transformer, the trench earth conductor must be connected to one of the earth points at a corner post or the earth point on the tank of the transformer.

Any trench earth system earth resistance shall preferably be 5Ω, referred to zero.

MV equipment earth (where applicable)

Any MV switchgear earths, shall be bonded to the fence earth system or the trench earth system if such MV earth systems is within 9 m of the fence earth system or the trench earth system.

Any support steelwork for MV equipment or the transformer support steelwork shall be bonded to the fence earth system or the trench earth system with 70 mm² bare copper earth wire.

This connection shall only be carried out if ESKOM or the Supply Authority allows the Contractor to carry out this work.

Substations building earths

In the case of a substation building which contains MV switchgear and/or transformers, the following section shall apply.

A main earth mat shall be placed 700 mm, below ground level in a position outside the substation building in a position as instructed on site.

The earth mat shall consist of 5 earth rods driven into the bottom of ground trenches with 4 rods placed in a 2 m x 2 m square pattern with the fifth rod at the centre thereof.

The 4 outer rods shall be connected to the centre rod by means of 70 mm² bare copper earth wire.

A 70 mm² bare copper earth wire shall be connected to the centre rod and shall terminate on a main earth bar in the main LV switchboard.

A 70 mm² bare copper earth wire shall further be connected to the transformer tank and LV star bushing (neutral bushing) of the transformer and to the MV switchgear earth point or bar and shall be terminated on the earth bar of the main Board.

Earthing of general electrical installations

General

All earth conductors shall be stranded copper with or without green PVC insulation. Trench earths shall preferably be bare copper earths.

All earth conductor sizes shall be determined in accordance with SABS 0142, where the earth does not form an integral part of the cable.

Switch Boards

A separate earth connection shall be supplied between the earth busbar of the main switchboard and the earth busbar of every sub-switchboard. The connections shall consist of bare or insulated stranded copper conductors installed along the same routes as the supply cables or in the same conduit as the supply conductors. Alternatively, armoured cables with earth continuity conductors included in the armouring may be utilised.

Sub-circuit

The earth conductors of all sub-circuits shall be connected to the earth busbar in the supply switchboard in accordance with SANS 0142.

Ring mains

Common earth conductors may be used where various circuits are installed in the same wiring channel in accordance with SANS 0142.

Earth conductors for individual circuits branching from the ring main shall be connected to the common earth conductor with T-ferrules or be soldered. The common earth shall not be broken.

Connections

Under no circumstances shall connection points, bolts, screws, etc., used for earthing be utilised for any other purpose. It will be the responsibility of the Contractor to supply and fit earth terminals or clamps on equipment and materials that must be earthed where these are not provided. Unless earth conductors are connected to proper terminals, the ends shall be tinned and lugged. Lugs may be crimped, using mechanical or pneumatic tools designed for this purpose, on condition that evidence is submitted that the method used complies with the performance requirement of BS 4579, Part 1: "COMPRESSION JOINTS IN COPPER".

Non-metallic conduit

Where non-metallic conduit is specified or allowed, stranded copper earth conductors shall be installed in the conduits and fixed securely to all metal appliances and equipment, including switch boxes, socket-outlet boxes, draw-boxes, switchboards, luminaries, etc. The securing of earth conductors by means of self-treading screws are not permitted.

Flexible conduit

An earth conductor shall be installed in all non-metallic flexible conduits. This earth conductor shall not be installed external to the flexible conduit but within the conduit with the other conductors. The earth conductor shall be connected to the earth terminals at both ends of the circuit.

Water pipes

Metal domestic cold water mains shall be bonded to the earth busbar in the main switchboard by solid 15 x 2 mm copper strapping. All other domestic metal water pipes shall be connected by 12 x 0,8 mm perforated or solid copper strapping (not conductors) to the nearest switchboard. The strapping shall be fixed to the pipe work by brass nuts and bolts and against walls by brass screws at 150 mm centres.

In all cases where metal water pipes, down pipes, flues, etc., are positioned within 1,6 m of switchboards, an earth connection consisting of copper strapping shall be installed between the pipe work and the Board. In vertical building ducts accommodating both metal water pipes and electrical cables, all the pipes shall be earthed at each switchboard.

Roofs

Where service connections consist of overhead conductors, all metal parts of roofs, gutters and down pipes shall be earthed. One bare 10 mm² copper conductor shall be installed over the full length of the ceiling void, fixed to the top purlin and connected to the admin earth conductor of each switchboard. The proof and gutters shall be connected at 15 m intervals to this conductor by means of 12 x 0,8 mm copper strapping (not conductors) and galvanised bolts and nuts. Self-tapping screws are not acceptable. Where service connections consist of underground supplies, the above requirements are not applicable.

Pump station buildings, roof earths and reservoirs

A ring earth consisting of a 70 mm² bare copper earth wire shall be installed all around the perimeter of each pump station or building on site at 600 mm below ground level and 1 m from the building structure.

The building roof and steel columns (where applicable) shall be bonded to this ring earth in two places at diagonal corners of the building.

The roof earth connections shall be housed in 25 mm Ø hot dipped galvanised conduit with the conduit saddled to the walls of the buildings by means of hot dipped galvanised conduit spacer saddles. The conduit shall reach from below the roof overhang to 300 mm below ground level.

This earth system shall also be bonded to the earth bar of the main switchboard or motor control centre.

In the case of a concrete roof of a building or a reservoir with a concrete roof which is not protected against lightning. The Contractor shall first enquire whether the District requires such a structure to be protected. Some reservoirs and buildings are already fitted with foundation earths and will not require additional earthing.

In the case where a structure must be protected against lightning, the Contractor shall submit a report (preferably by an earthing specialist firm) to the District in terms of SABS 03/1985 (as amended), of the type of system required and the cost thereof.

Corrosion protection

Steel pipeline employing corrosion protection systems, must not be earthed, but the District must be informed of such systems and advice must be obtained from corrosion protection specialists before any earthing of such pipelines are attempted.

Installation and testing of electrical equipment

Distribution Boards and motor control centres

General construction

Size

All switchboards shall be of ample size to accommodate the specified switchgear and provide space for future switchgear. For every 4 (or part of 4) 5 kA circuit breakers on a switchboard, space for an additional 5 kA circuit breaker shall be allowed for unless future space requirements are clearly specified. For circuit breakers above 5 kA, this factor shall be 15 %.

External dimensions

The maximum allowable height of free-standing switchboards is 2,2 m. Cubicle type Boards may be up to 2,4 m high if they can be fully dismantled into individual cubicles. Where, due to space restrictions, a Board exceeds 2,2 m in height, equipment not normally requiring access, shall be installed in the top section, enabling equipment normally requiring access to be installed lower down in the Board.

All other specified external dimensions for switchboards shall be strictly adhered to. If the proper clearances cannot be adhered to as a result of restricting external dimensions, the Contractor shall obtain the approval of the Engineer before manufacturing the switchboards.

Moisture and vermin

All switchboards shall be rendered moisture proof and vermin proof and shall be adequately ventilated.

Load balance

The load shall be balanced as equally as possible across multiphase supplies.

General work

Note: Care must be taken when using megger test equipment on electrical installations due to damage which can result to MOV type lightning arrestors, electronic motor protection units and electronic instrumentation.

The following work shall be carried out on electrical installations whenever any work is carried out on any site.

(a) The earthing of the whole installation shall be tested and checked in accordance with the requirements of the section PB 12.2 of this specification.

(b) Clean inside and outside of all distribution Boards and control panels. Note severe rust problems and reports to the District.

(c) All wiring connections to terminals in Boards, joint boxes, lock-stop button boxes, stop-start remote station boxes, instrument casings and in motor cable boxes shall be tightened.

Overheating damage to conductor ends and terminals or switchgear due to loose connections shall be repaired as set out further herein.

(d) All light circuits shall be checked for operation and lamps shall be replaced as necessary.

(e) All plug circuits shall be checked for correct polarity and for earthing problems. Damage 16A 3 pin switch-plugs shall be replaced as necessary.

(f) All earth leakage units shall be checked with an earth leakage tester. Where a 100 mA earth leakage unit is used in conjunction with a shunt trip main incoming circuit breaker, the manufacturer's specification for testing of the unit shall be followed.

(g) Any over/under voltage or phase failure/phase rotation protection monitor relays shall be tested for proper operation.

(h) Check all voltmeters, voltmeter switches and ammeters for correct operation and log all maximum demand currents before resetting ammeters.

(i) Log all motor running hour meters.

(j) Check all recorded data (if available) on electronic motor protection units. Time lapse since last trips and cause of trips must be logged.

(k) Check all instrumentation fuses and all control circuit supply fuses and circuit breakers.

(l) Test all indication lamps and replace blown lamps as necessary.

(m) All Board doors and covers shall be checked for proper closing. All open connections such as found in broken or missing light switches, plugs and lights shall be close off with cover plates or replaced, as the case may be.

No live open connection or live metalwork on any appliance or Board shall be left in that state by the Contractor.

(n) All surge arrestors and lightning protection equipment shall be inspected for damage or burnout. Damaged units shall be replaced. Carbon granule type of arrestors (for power) must be replaced with MOV arrestors with a fault rating of not less than 40 kA.

Instrumentation surge arrestors must be replaced with the correct type as prescribed by the supplier of the instrument, for digital signals and current loops.

Starter and distribution Boards (such as used for boreholes and small plants)

Boards shall be constructed and maintained as follows: over and above the work specified in 3.9.3.15 above:

(a) Circuit breakers or main switches.

Circuit breakers shall comply with SANS 156.

Contacts of circuit breakers shall be silver alloy and shall close with a high pressure wiping action.

Where specified, the circuit breaker shall be capable of accommodating factory fitted shunt trip or auxiliary contact units or similar equipment.

The operating handle shall provide clear indication of "ON", "OFF" and "TRIP" positions.

The mechanism shall be of the TRIP-FREE type preventing the unit from being held on the ON position under overload conditions.

All moulded-case circuit breakers in a particular installation shall as far as practical be supplied by a single manufacturer.

The incoming terminals of single-pole miniature circuit breakers shall be suitable for connection to a common busbar.

The circuit breaker shall have a rating plate indicating the current rating, voltage rating and breaking capacity.

Extension type operating handles shall be provided for units which are placed inside a Board and shall be mounted on a chassis on the back plate of the Board so that the operating shaft is as short as possible.

Extension shafts shall engage easily with the door handle cavity. The handle shall have a mechanical interlock so that the face panel or front door of the panel cannot be opened whilst the breaker is ON.

Isolators used as main switches for Boards shall comply in principle with requirements of the previous paragraphs of 3.1.2(a) above.

Isolators shall be of the triple-pole, hand operated type complying with SABS 152.

Isolators shall have a high-speed closing and opening feature.

Isolators shall be suitably rated for the continuous carrying, making and breaking of the rated current specified as well as the through-fault current capacity as specified.

To distinguish the switches from circuit breakers the operating handles shall have a distinctive colour and/or the switch shall be clearly and indelibly labelled "ISOLATOR".

When checking for proper operation the main switch or circuit breaker must be switched ON and OFF and voltage measurements taken on the outgoing side in both cases to check that all three poles switch properly and that the supply to the switchgear is OFF when the main switch or circuit breaker is switched OFF.

(b) Contractors

Contactors shall be of the open or totally enclosed, triple or double pole, electromechanically operated, air-break type suitable for 380/433 V or 220/250 V supplies and shall comply with SANS 1092

Contactors shall have the following characteristics:

- (1) Enclosed coil easily replaceable.
- (2) A permanent air gap in the magnetic circuit to prevent sticky operation.
- (3) Provision for quick and simple inspection of contacts.
- (4) Clearly marked main and auxiliary terminals.

All parts shall be accessible from the front.

In addition to the required current carrying capacity and switching duty of a contractor, the contactor chosen for a particular application shall be rated for the maximum through fault current allowed by the back-up protection devices at the point where the contactor is installed. Careful co-ordination of the short circuit devices shall take place.

All laminations of the magnetic system of the contactor shall be tightly clamped. Noisy contactors will not be accepted.

Non-current carrying metallic parts shall be solidly interconnected and a common screwed terminal shall be provided. The contactor shall be earthed to the switchboard earth bar.

Latched contactors shall be provided with a trip coil and a closing coil. The contactor shall remain closed after de-energising the closing coil and shall only trip on energising the trip coil.

Contractor operating coils shall have a voltage rating as required by the control circuitry and shall have limits of operation and temperature rise as specified in clause 7.5 and Table Iv of IEC 158-1. Latched contactors shall be capable being tripped at 50 % of the rated coil voltage.

Contactors with provision to add auxiliary contacts on site are preferred. Contactors with permanently fixed auxiliary contacts shall have at least 1 x N/O and 1 x N/C spare auxiliary contacts in addition to the contacts specified for control purposes and in addition to the contacts required for self-holding operations or economy resistances. Where the number of auxiliary contacts required is greater than the number of contacts that can be accommodated on the contactor, an auxiliary replay or additional contactor shall be provided to supply the additional contacts.

It shall be possible to replace main-contacts without disconnecting wiring.

Auxiliary contacts shall be capable of making, carrying continuously and breaking 6A at 220 V AC, unity power factor for contactors used on 380-433/220-250 V systems.

Auxiliary contact functions required e.g. "lazy" contacts, late-make, late-break, make-before-break, etc. shall be inherent in the contact design. Under no circumstances may these functions be improvised by bending contacts, loading contacts, etc. These functions shall be available in all contactors.

Spare auxiliary contacts shall be wired to numbered terminal strips in the switchboard and shall appear on the switchboard drawings.

All contactors on a specific project shall be from a standard range of one single manufacturer, unless specified to the contrary.

Contactor(s) which are tested for proper operation must be operated to ensure that the coil of the unit is in order and voltage measurements taken on the outgoing side to check that all three sets of contacts make evenly.

Contactors shall not emit a humming noise when pulled in and contactors shall further be checked for sticky moving parts.

Auxiliary contacts of contactors shall be inspected likewise.

Faulty contactor coils shall be replaced and badly worn or burned contacts sets must be replaced as a set.

Contactors which cannot be maintained must be replaced with an equivalent unit, if faulty, and maintainable units must preferably be used in that case.

Malfunctioning auxiliary contact blocks of contactors must be replaced.

If the same manufacture and model of maintainable contactor or parts thereof cannot be obtained, the whole unit must be replaced with an equivalent unit.

Contactor rating shall be determined by using one size larger than the correct AC3 rating which would normally be used.

Star contactor must be of the same rating as main or delta contactors, in the case of star-delta starters.

(c) Connections to busbars

Conductor ends shall be fitted with crimped or solid sweated lugs which are bolted to the busbar.

Busbar clamps with bolted connections are acceptable for smaller circuit conductors.

Where lugs are crimped evidence shall be submitted that the crimping technique used will comply with the performance requirements of BS 479, Part 1: "COMPRESSION JOINTS IN COPPER".

(d) Busbars

Busbars in panels where the main switch or circuit breaker exceeds 150A, shall be manufactured of solid drawn high conductivity copper with rectangular cross-section in accordance with SANS 1195 and BS 159 and BS 1433, where applicable.

Busbars in Boards where the main switch or circuit breaker is less than 150A may be done in the form of flexible welding cable, installed in PVC trunking along with small-bore wiring.

Although SABS 784 refers to overhead and rising busbars, busbars in miniature substations shall comply with applicable sections of this specification, especially as far as insulation and clearance values, creepage distance, joints insulation resistance, dielectric strength, deflection test, absorption resistance and rated short time withstand current are concerned.

Busbars shall be supplied for the following applications:

1. Distribution of supply voltage.
2. Connection of equipment with ratings exceeding the current rating of 70 mm² conductors.
- (3) Connection of outgoing circuits with current ratings in excess of that followed for 70 mm² conductors.
 - a. Collector bars for parallel cables.
 - b. Connection bars for neutral conductors.
 - c. Earth busbars.
 - d. Connections to miniature circuit breakers.

All busbars shall be covered with coloured heat-shrinkable or air drying shrinkable.

The colour shall correspond to the colour of the supply phase.

Busbars shall be radius-edged where they change direction.

Neutral conductors for circuits protected by a single-pole circuit breaker or fuse-switch shall be connected to a neutral busbar mounted in a suitable position.

A separate neutral bar shall be provided for each earth leakage unit provided.

Neutral bars shall have a cross-section of at least 6,3 x 25 mm and shall be long enough for the lugs of all neutral conductors to be bolted separately to the busbar without overlapping the lugs

(e) Wiring

Incoming and outgoing cables shall be terminated on the gland plate.

Cable tails with sizes up to 70 mm² may terminate on clamp type terminals where the clamping screws are not in direct contact with the conductor. All cables larger than 70 mm² shall terminate on busbar studs which are connected directly to the equipment. Parallel connected to a collector busbar or busbar stud without crossing the conductors.

External wiring for low voltage, control, interlocking, alarm, measuring and DC circuits shall terminate on numbered wiring terminals.

The correct terminal size as recommended by the manufacturer for each conductor to be connected shall be used throughout. The terminal numbers shall appear on the wiring diagrams of the switchboard.

Terminals for power wiring shall be separated from other terminals. Terminals for internal wiring shall not be interposed with terminals for external circuits. All connections to terminals shall be identified with numbers.

Where switchboards consist of separate sections, the control wiring passing between sections shall be terminated on strips in each section so that control wiring can be readily re-instated when reassembling the Board.

The current rating of conductors for the internal wiring shall be sufficient to carry the maximum continuous current that can occur in the circuit. The value shall be determined from the circuit breaker or fuse protection of the circuit. The smallest conductor size to be used for power wiring shall be 2,5 mm².

PVC wiring channels shall be used throughout and shall be installed horizontally and vertically. Under no circumstances may power and low voltage control circuit wiring be installed in the same wiring channel. Channels shall not be more than 40 % full and shall preferably be of the finger type of channel.

Where neutral connections are looped between the terminals of instruments, it is essential that the two conductor ends be inserted into a common lug or ferrule and are crimped or soldered together in order that the neutral connection is not broken when the conductors are removed from one of the instruments.

Wiring should as far as possible be confined to the front portions of switchboards for ease of access. This requirement is important for wiring between smaller circuit breakers and the associated main circuit breaker as well as the wiring from circuit breakers to lighting and socket-outlet circuits.

Conductors connected to terminals shall be soldered or ferruled. Connections to circuit breakers, isolators or contractors shall be made by one of the following methods:

- (i) A ferrule or lug of the correct size.
- (ii) Soldering the end of the conductor.

All conductors terminating on meters, fuse holders and other equipment with screwed terminals shall be fitted with lugs. The lugs shall be soldered or crimped to the end of the conductor. The correct amount of insulation shall be stripped from the end to fit into the terminal. Strands may not be cut from the end of the conductor.

Neutral wires may not be cut where these are looped on control gear terminals, but the insulation must be removed and the wire looped and crimped or soldered into the lug.

The colour of the conductors for all 220/250 Volt circuits shall correspond to the colour of the supply phase for that circuit. Neutral conductors shall be black.

All other conductors in the Board, supplying control circuits, etc., shall be coded in colours other than those specified above. A colour code shall be devised from each Board and the colour code shall be shown on the wiring diagrams.

All conductors that terminate at wiring terminals and all conductors used for the internal wiring of the switchboard, shall further be identified at both ends by means of durable cable marking ferrules. PVC or other tape is not acceptable.

The numbers on the markers shall be shown on the wiring diagrams.

- (f) Labelling

Care shall be taken to ensure that all equipment is fully labelled and that accurate descriptions and safety warning notices appear in English only. The Engineer must be approached by the Contractor to obtain the specific requirements for labels before the labels are manufactured.

Engraved plastic or ivory sandwiched strips shall be used throughout. The strips shall bear white lettering on a black background for normal labels and red letters on a white or yellow background for danger notices.

All other equipment including meters, instruments, indicator lights, switches, push buttons, circuit breakers, fuses, contactors, control relays, protection relays, etc., shall be identified. The function of the equipment and circuits shall be clearly indicated. The main switch shall be labelled as such and designated:

"SWITCH OFF IN CASE OF EMERGENCY"

Flush mounted equipment within doors or front panels shall be identified with labels fixed to the doors or front panels respectively.

The labels for equipment installed behind panels, shall be fixed to the chassis close to the equipment. If this equipment is positioned too close together to accommodate descriptive engraved labels, the equipment may be identified by a code or number on an engraved label which shall be fixed close to the equipment. The code number shall be identified on a legend card which shall be installed on the switchboard behind a plastic or other protective cover.

(g) Instruments

Instruments shall be suitably rated for the supply voltage and frequency to be applied, which shall be 400/230 Volt, 50 Hz unless specified to the contrary.

All the instruments used for a particular application or a specific project shall be from the range of a single reputable supplier and shall have the same face dimensions. The face dimensions shall be square and not less than 96 x 96 mm.

- All instruments shall comply with BS 89 and/or IEC 51.

Instruments shall be screened against magnetic interference and shall have anti-static, impact-resistant glass or "MACROLON" faces.

- Preference will be given to locally manufactured instruments.
- Instruments shall be insulated to achieve a 2 kV insulation resistance to earth.

All instruments shall be splash-proof and dust-proof unless more stringent requirements are specified for hazardous locations.

Instruments shall be sufficiently resistant to vibrating that may be encountered in the specific application.

For normal environmental and supply conditions, instruments shall be suitable for use inside the limits specified in Tables III and IV of IEC 51.

All instruments shall be capable of withstanding overloads of continuous or short duration in accordance with section 8.3 of IEC 51.

Instruments shall be provided with studs for rear connection. Shrouds shall be provided to prevent accidental contact where instruments are to be installed in hinged panels of switchboards.

(h) Voltmeters and Voltmeter Selector

Unless specified to the contrary, voltmeters shall be scaled from 0-250 Volt in the case of LV applications.

Voltmeters shall be of the moving iron type with class 1,5 accuracy as specified in IEC 51.

A zero adjustment screw shall be provided.

Unless specified to the contrary, a single voltmeter and selector switch shall be provided. The voltmeter switch shall have an "OFF" and three metering positions to indicate readings between neutral and each of the three phases.

The marking shall be indicated clearly on the face plate of the selector switch and the handle position shall be accurate in relation to the marking on the face plate.

The selector switch shall be of the cam-actuated or wiping air-break type with two breaks per pole.

(i) Ammeters

Ammeters shall have a moving iron element to indicate instantaneous values.

Direct reading ammeters up to a maximum rating of 60 A may be used. Current transformer operated ammeters shall be 5 A full scale, calibrated to read actual primary circuit currents. The current transformer ratio shall be indicated on the face plate.

A zero adjustment screw shall be provided.

Where combined maximum demand and indicating ammeters are specified, a bimetallic spiral element shall be provided in the same housing to indicate mean value over a 15-minute period.

The bi-metal element shall drive a residual pointed to indicate maximum mean current between resetting. The pointer shall operate on the main scale and shall be of a distinctive colour. The pointer shall be resettable from the face of the meter.

The bi-metal element shall be designed to compensate for limits of ambient temperature between – 20°C and 70°C.

Full load or rated current shall be clearly indicated, preferably with a red line. Unless specified to the contrary, a 100 % condensed over scale for combined maximum demand ammeters.

The intrinsic error, expressed in terms of the fiducial value in accordance with IEC 51, shall be class 1,5 for the instantaneous readings and class 2,5 for the mean maxima.

Where saturation current transformers are required, these shall form an integral part of the meter. Separate saturation current transformers are unacceptable to the Engineer.

(j) Running Hour-meters

Running hour-meters shall be of the electrically operated cyclometer type, suitable for flush mounting.

Numerals shall be clearly defined white on a black background.

The range of hour-meters shall be five digits, the fifth digit indicating one-tenth of an hour, i.e. from 0 to 9999,9 hours.

The accuracy class shall be class in accordance with IEC 51 unless otherwise specified.

(k) Earth Leakage Relays

Earth leakage relays shall be single or three-phase units with a sensitivity of 20 mA, with associated circuit breaker or on-load switch for use on 220/250 Volt single phase or 380/433 Volt three-phase, 50 Hz, supplies.

The units shall be suitable for installation in switchboards in clip-in trays or bolted to the chassis.

The earth leakage relay shall function on the current balance principle and shall comply with SABS 767 as amended, and shall bear the SANS mark. Integral test facilities shall be incorporated in the unit.

Circuit breakers with trip coils used integrally with earth leakage units (two-pole for single-phase units and three-pole for three-phase units) shall comply with SABS 156.

On-load switches used integrally with earth leakage units (two-pole for single-phase units and three-pole for three-phase units) shall comply with SABS 152.

The fault current rating of the unit shall be 2,5 kA or 5kA as required, when tested in accordance with SANS 156.

(l) Current Transformers

Current transformers shall comply with the requirements of BS 3938 and IEC 185 with the exception of the required impulse test level as specified below.

(1) Ratings

Current transformers shall be suitable for the primary currents listed hereunder and their decimal multiples: 10, 12.5, 15, 20, 25, 30, 40, 50, 60 and 75.

The preferred values are: 10, 15, 20, 30, 50 and 75.

Current transformers shall have secondary ratings of 1, 2 and 5A, with 5A being preferred.

Current transformers shall have standard outputs of 2,5, 5, 10, 15 or 30 VA as applicable in terms of the burden of the instruments and interconnecting wiring. The current transfer output shall match the actual instrument burden as possible in order not to introduce unnecessary errors.

(2) Accuracy Class

For metering applications, accuracy classes of 0.1, 0.2, 0.5, 1, 3 or 5 are applicable. Where no accuracy class has been specified, the following table may be used as a guide:

Application	Primary Current	Suggested Class
Indicating instruments	All	5
Metering applications	Up to 200 A	1
Metering applications	250 to 600 A	0.5
Metering applications	800 A and above	0.2

Where ring type current transformers are specified, the aperture shall not be unnecessary large as accuracy is thereby reduced.

The classes for protection are 5P, 10P, 15P, 20P or 30P with 5P and 10P being standard. Turns compensation shall not be employed on protection current transformers for ratios greater than 150/5.

Class X current transformers shall be used in differential protection systems.

Manufacturers shall supply the magnetization curve details and saturation factors for each different transformer ratio.

(3) Markings

All current transformers shall come complete with a label on which the following information is indelibly stamped:

Manufacturer,
Serial No. or Type,
Rated primary and secondary current,
Rated frequency,
Rated output and accuracy class,
Highest system voltage,
Rated insulation level,

(4) Fault current

Current transformers shall be capable of withstanding the dynamic forces resulting from the maximum through-fault current which may be encountered at the point where they are installed. The short time current rating of current transformers shall be at least equal to that of the associated circuit breaker.

(5) Impulse Level

Current transformers used in system voltages in excess of 660 Volt shall withstand an impulse test level of 95 kV. Impulse levels for current transformers used in system voltages up to 660 Volt shall comply with BS 3938.

(6) Tests of Current Transformers

One protection current transformer of each type used in a contract shall be tested to confirm the estimated characteristics. The following results shall be submitted:

- (a) Magnetization curve.
- (b) Secondary resistance.
- (c) Secondary leakage reactance, if not negligible or if required by the Engineer.

The power frequency, secondary to earth and over-voltage interturn test in accordance with BS 3938 shall be conducted on all current transformers. Impulse tests shall be conducted on all current transformers intended for use in system voltages in excess of 660 Volt.

(m) Tests of Boards

The Engineer shall be notified when the mechanical construction of the switchboard, i.e. frame, panels and base frame, is complete in order that it may be inspected at the factory.

Function tests of all equipment, control and interlocking circuits shall be conducted to the satisfaction of the Engineer. Testing equipment and facilities including instruments, dummy loads and additional switchgear and cables shall be provided by the Contractor at no extra cost. The Engineer shall be notified in writing two weeks in advance of any test to be conducted, to allow its representative to be present at such tests. A complete report on the tests shall be handed to the Engineer.

(n) Drawings for Approval

A set of three prints of the shop drawings for the switchboards shall be submitted to the Engineer for approval before the Boards are manufactured. The following information shall be presented:

- (i) A complete wiring diagram of the equipment on the Boards.
- (ii) A complete layout of the arrangement of the switchboards indicating all equipment dimensions and the construction of the Boards. The positions and method of fixing and sizes of busbars shall be shown.
- (iii) All labelling information on a separate sheet.
- (iv) The make, catalogue number and capacity of all equipment such as isolators, circuit breakers, fuses, contactors, etc. on a separate sheet.

The approval of drawings shall not relieve the Contractor of his responsibility to supply the switchboards according to the requirements of Department.

(o) Final Drawings

Five complete sets of "as built" drawings of all switchboards shall be submitted to the Engineer within two weeks after delivery of the Boards. The following basic information shall be presented:

- (1) Item (i) to (iv) of the previous paragraph.
- (2) Terminal strip numbers, numbers and colours of conductors connected to the terminal strips and numbers and colours of the conductors utilized for the internal wiring.
- (3) A separate schedule of all equipment with the name of the equipment, name of the manufacturer, type of equipment, model of equipment, address and telephone number of the supplier.

All further information and data shall also be submitted as specified further herein.

(p) **Manuals**

Five sets of manuals for all specified main and sub-main switchboards shall be supplied to the Engineer at no extra cost. These manuals shall include the following information:

- (1) Complete information on the operation of the equipment.
- (2) Complete information for maintenance of the equipment.
- (3) Brochures and ordering information.
- (4) A complete equipment list indicating quantities and relevant catalogue numbers.

Electric Motors

Standards

Electric motors shall comply with SABS 0157, Part 1, as far as quality is concerned and the performance of motors shall comply with SANS 948, Part 1 (1978) and with IEC 34-1 and with BS4999: Part 30, 31 and 32. Insulation of motors shall be Class "F" (B-rise) and shall comply with BS2757 (1955).

The dimensions of motors shall be in accordance with SANS 948, Part 1 (1978) and IEC 72-1, 72-2 and BS 4999, Part 10.

Frames of motors shall comply with IP55 and cooling shall comply with ICO 141.

Types

The motors shall be 380 Volt, 3-phase, 6-terminal, 50 Hz, T.E.F.C. type, squirrel cage induction motors and suitable for DOL or star-delta starting. The method of starting of the different sizes of motors covered by this specification, is tabled further herein.

The transformers supplying power to the installations will normally be standard 400/231 V secondary voltage (SANS 780) type. The supply voltage at the terminals of the motors during start-up shall not be less than + 385 Volt whilst the supply voltage shall not be less than + 395 Volt at full-load current.

Construction

Frames and End Shields

Motors shall have stator frames with deep external cooling ribs. The frames, feet and end shields shall be manufactured from cast iron. Alloy cast frames will only be accepted after written approval has been granted by the Engineer. Frames shall be machined to accept the stator core after which the registers shall be finish machined with particular regard to concentricity of the stator bore. All frames, end shields and terminal box fixing holes shall be jig drilled to ensure interchange ability of components.

Motors shall be foot mounted and will be used in a vertical position situation with the motor shaft at the top.

The underside of the frame (feet) shall also be machined to obtain correct centre height to and parallelism with the shaft axis.

Stator

The stator shall be built of electrical steel lamination having semi-closed slots. Thick end plates shall prevent spreading of the laminations and burrs shall be removed before winding takes place.

Windings shall consist of pre-formed coils of synthetic resin covered copper wire.

Slot liners shall consist of thick durable insulating material to give additional protection. The wound core shall be impregnated before being hydraulically pressed into the frame and shall thereafter be fixed into position.

Rotor and shaft

Motors shall have rotor windings of cast aluminium or copper bar as the case may be. End rings and wafer blades shall form an integral part of the casting procedure where this is employed. Rotors shall be dynamically balanced and shafts shall consist of 080M40 (EN8) steel.

Terminal Boxes and Terminals

Terminal boxes and lids shall be manufactured from cast iron or heavy duty cast alloy and terminal boxes shall be mounted on the right hand side of the motor, as seen from the shaft end.

Boxes for motors shall be suitable to accept 4-core PVC armoured cables as tabled further herein.

Terminals shall be brass stud type in rigid insulated mountings and shall be suitable for the lugs of the cables and specification herein. Six winding end terminals, complete with removable brass straps for DOL or star-delta connections, and one earth terminal shall be provided in the box.

Each terminal shall be provided with three brass nuts and two brass washers per stud, as well as with the solid brass straps as specified. The terminals shall be suitably sized to accept the lugs of the cables specified further herein.

IP55 seals shall be provided between the cable box frame and the motor and between the box lid and the cable box.

Bearings

Bearings shall be of the ball or roller type with shields and shall be enclosed in dust proof housings. Bearings shall be charged with BP Energrease LS3 upon assembly of the motor under dust and grit free conditions. Standard high quality bearings shall be used on motors.

Markings

All motors shall be supplied with a riveted on metal place label on top of the motor on which the following information engraved (not stamped):

- Manufacturer of Motor
- Serial number of motor
- Rated voltage of motor
- Full load current of motor (for delta operation)
- Output kW rating on shaft
- Rotational speed in RPM
- Continuous duty cycle
- Temperature insulation class
- SABS or IEC mark
- All markings required further by BS 4999 and not already specified above
- Other manufacturer's data as required

Rating

Motors complying with the following ratings used in a project must be connected with cables and shown in the following table.

Motors up to and including 7,5 kW shall be started DOL and motors from 11 kW to 22 kW shall be started Star-Delta.

The specific size of motor for a site shall be sized for a rating applicable to the project requirements.

MOTOR RATING	METHOD OF STARTING	CABLE TERMINAL BOX SUITABLE FOR THE FOLLOWING CABLES
5,5 kW	DOL	1 x 6 mm ² 4-core PVC cable
7,5 kW	DOL	1 x 6 mm ² 4-core PVC cable
11 kW	Star-Delta	2 x 10 mm ² 4-core PVC cable
15 kW	Star-Delta	2 x 10 mm ² 4-core PVC cable
18,5 kW	Star-Delta	2 x 10 mm ² 4-core PVC cable
22 kW	Star-Delta	2 x 10 mm ² 4-core PVC cable
45 kW	Star-Delta	2 x 10 mm ² 4-core PVC cable
90 kW	Star-Delta	2 x 10 mm ² 4-core PVC cable
155 kW	Star-Delta	2 x 10 mm ² 4-core PVC cable

Refer to O&M specification

Cables

Construction

Cables shall be manufactured in accordance with SANS 150, shall come only from fresh stocks, and shall be constructed as follows:

- (a) Un-armoured cable : PVC-insulated/PVC-sheathed
- (b) Armoured cables : PVC-insulated/PVC-bedded/armoured/black extruded PVC sheath
- (c) Single core cables : PVC-insulated/unsheathed

The conductors shall be of high conductivity annealed stranded copper and the cores may be shaped or circular.

The insulation shall be general purpose PVC, 600/1000 Volt Grade.

The bedding shall consist of a continuous impermeable sheath of PVC extruded to fit the core or cores closely and in the case of multi-core cables, to fill the interstices between the cores.

When armouring is specified it shall consist of one layer of galvanized steel wire in the case of multi-core cables and non-magnetic metallic wire in the case of single core cables. Aluminium strips or tape armouring is not acceptable.

Where specified, an earth continuity conductor shall be provided in the armouring in accordance with SABS 150.

Resin Filled Joints

The resin filled joint kit shall comprise a self-sealing plastic mould of high mechanical strength having sufficient connector space.

The exact amount of cold hardening resin shall be provided in a two-compartment plastic bag.

The resin shall have absolute minimum shrinkage.

The mould and resin shall be completely waterproof and non-hygroscopic and shall be resistant to ultraviolet radiation.

Cable Box Joints

Cable boxes shall be manufactured of die cast aluminium material for normal conditions or glass fibre reinforced thermosetting compound where exposed to corrosive conditions.

The lid shall provide an absolute moisture barrier.
Boxes shall contain 2, 3 or 4 entries as required.

Unused entries shall be sealed with watertight blanking plugs.

Earth continuity shall be maintained through the box by means of the material of the box in the case of aluminium boxes or by means of earth straps and studs in the case of glass fibre reinforced boxes.

- Glands for PVC-insulated cables
- Glands to be used for terminating PVC/PVC/SWA/PVC cables shall be of the adjustable type.
- Glands shall be suitable for general purpose 600/1000 Volt Grade cable with steel armouring.
- The glands shall be made of nickel-plated bronze or brass.

The glands shall consist of a barrel carrying a cone bush screwed into one end and a nickel-plated brass nipple carrying a nickel-plated brass or a heavy galvanized steel locknut screwed into the other end. The galvanizing shall comply with SABS 763.

Non-watertight glands must be easily converted to watertight glands by means of a waterproofing shroud and inner seal kit. On the cable entry side of the barrel a concave groove shall be provided to accommodate the top rim of the waterproofing shroud.

The shrouds shall be made of non –deteriorating neoprene or other synthetic rubber, and shall be resistant to water, oil and sunlight. The shrouds shall fit tightly around the glands and cable.

- Glands shall be provided with ISO threads and shall be suitable for the specified cable sizes.
- Flameproof glands shall comply with SANS 808, Groups 1, 2a and 2b.

Suitable accessories shall be provided with glands to be used on ECC armoured cables to facilitate a bolted lug connection of the earth continuity conductors. Grooves cut into the barrel or cone bush to accommodate the earth continuity conductor are not acceptable.

For un-armoured cables the cone bush and compression ring of the gland shall be replaced with a synthetic rubber compression bush and ring to provide the required grip on the outer sheath of the cable.

Trenching

General

The Contractor shall be responsible for all trenching excavations unless specified to the contrary.

The Contractor shall, before trenching commences, familiarize himself with the routes and site conditions and the procedure and order of doing the work shall be planned in conjunction with the general construction program for other services and building requirements.

The Contractor shall acquaint himself with the position of all the existing services such as storm water pipes, water mains, sewer mains, gas pipes, telephone cables, etc. before any excavations are commenced. For this purpose he shall approach this Engineer's representative, the local municipal authority and any other authority which may be involved, in writing.

The Contractor will be held responsible for damage to any existing services brought to his attention by the Engineer and shall be responsible for the cost of repairs.

The Contractor shall take all the necessary precautions and provide the necessary warning signs and/or lights to ensure that the public and/or employees on site are not endangered.

The Contractor shall ensure that the excavations will not endanger existing structures, roads, railways, other site constructions or other property.

Routes

Trenches shall connect the points shown on the drawings in a straight line. Any deviations due to obstructions or existing services shall be approved by the Engineer beforehand. Refer also to par. 9.10.

The Engineer reserves the right to alter any cable route or portion thereof in advance of cable laying. Payment in respect of any additional or wasted work involved shall be at the documented rates.

The removal of obstructions along the cable routes shall be subject to the approval of the Engineer.

Dimensions of Trenches

Cable trenches for one or two cables shall not be less than 300 mm wide and need not be more than 450 mm wide. This dimension shall be valid for the total trench depth.

The width shall be increased where more cables are installed to allow for spacing of 100 mm between cables.

Where trenches change direction or where cable slack is to be accommodated, the Contractor shall ensure that the requirements of the relevant SABS Specification regarding the bending radii of cables are met when determining trench widths.

Trench depths shall be determined in accordance with cable laying depths and bedding thickness.

Payment will be made on a volumetric excavation rate calculated on the basis of the given maximum dimensions or the actual dimensions, whichever is the lesser.

Cable shall be installed at a minimum depth of 600 mm below final ground level.

All cable depth measurements shall be made to the top of the cable when laid directly in ground or to the top of the duct or sleeve where these are provided.

The above depths shall apply to the top layer where cables are installed in layers. The Contractor may only deviate from the above depths provided prior authority in writing has been obtained from the Engineer. In this event the cable shall be protected with a suitable concrete covering.

The depth of cable pipes or ducts beneath railway lines or roads shall be not less than 1,1 m below the formation level.

Testing of Cables

Each cable shall be tested after installation in accordance with SANS 150.

LV cables shall be tested by means of suitable megger at 1 kV and the insulation resistance shall be tabulated and certified.

Completion

The Engineer reserves the right to inspect the installation at any stage during the course of construction. Such inspections will, however, not deem the portions inspected as being complete or accepted and the

Contractor shall remain responsible for completing the installation fully in accordance with the Contract Documents.

The Contractor shall carry out a final "as built" survey of the cable routes and present to the Engineer "as built" route plans of the complete installation. The following information shall be reflected on the plans or submitted as separate scheduled with the plans:

- (a) Overall length of each cable.
- (b) Locations of all joints (if any) in relation to permanent reference points.

Dimensions shall be shown and the method of triangulation i.e. two dimensions to each joint, shall be used.

- (c) Identification of each cable

The works will be deemed to be incomplete until all tests have been conducted successfully and all "as built" drawings and schedules have been handed to the Engineer.

Light switches

General

This section covers the requirements for switches for use in general installations under normal environmental conditions.

Flush and surface mounted switches

All switches shall be suitable for mounting in 100 x 50 x 50 mm boxes, shall comply with SABS 163 and shall bear the SABS mark.

Switches shall be of tumbler operated micro-gap type rated at 16A, 220/250 Volt.

Switches shall have protected terminals for safe wiring.

Contacts shall be of silver material.

On multi-lever switches, it shall be possible to individually change any of its switches.

The yoke strap shall be slotted to allow for easy alignment.

The covers of surface mounted switches shall have toggle protectors.

Where light switches are installed in partitions, they shall, where possible, be of the special narrow type intended for installation into the mullions.

Watertight switches

Watertight switches shall be of the micro-gap type suitable for surface mounting and shall bear the SANS mark.

The housing shall be of galvanized cast iron or the cast aluminium with watertight cover plate and toggle.

The switch shall have a porcelain base and a quick acting spring mechanism and shall be rated at 16A, 220/250 Volt.

- The ON/OFF positions shall be clearly marked on the switch housing.

Switched socket-outlets

General

This section covers the requirements for switched socket-outlets for use in general installations under normal environmental conditions.

Flush and surface mounted switched sockets

All switched socket-outlets shall be suitable for mounting in 100 x 100 x 50 mm or 100 x 50 x 50 mm boxes, shall comply with SABS 164 and shall bear the SANS mark.

Switches shall be of the tumbler operated micro-gap type rated at 16A, 220/250 Volt.

Terminals shall be enclosed for safe wiring.

Contacts shall be of silver material.

Safety shutters shall be provided on live and neutral openings.

The yoke strap shall be slotted to allow for easy alignment.

The covers of surface mounted switched sockets shall have toggle protectors.

Where 13A flat pin switched socket-outlets are specified, these shall comply with BS 1363.

Watertight switched sockets

The housing of watertight-switched sockets shall be of galvanized cast iron or die cast aluminium with watertight-machined joints.

The switch shall have porcelain base and a quick-acting spring mechanism and shall be rated at 16A, 220/250 Volt.

- The ON/OFF positions shall be clearly marked on the switch housing.
- The socket openings shall be rendered watertight by means of a gasket cover plate which is screwed onto the body of the unit. The cover plate shall be secured to the body of the unit by means of a chain.

Three-phase switched socket-outlets

- Three-phase switched socket-outlets shall have 5 pins, one for each phase, neutral and earth. The current rating shall be a minimum of 32A.
- The units shall be interlocked to prevent switching on if the plug top is not installed.
- The units shall be supplied complete with plug top.
- The live terminals shall be shrouded and shall be completely safe when the plug top is removed.
- Samples shall be submitted to the Engineer for approval prior to the installation.

Tubular fluorescent lamp luminaries for interior applications.

General

Luminaries, associated equipment and control gear shall be new and unused and shall be supplied complete with lamps, control gear, diffusers, mounting brackets, etc. as applicable, and shall be delivered to site in a protective covering.

Lamps shall be delivered separately.

Bids shall be accompanied by full descriptive information of the luminaries offered. Photometric data, i.e. polar curves and coefficients of utilization certified by the SABS shall be submitted with Bids for all luminaries offered.

General Technical Requirements

(a) General

Tubular fluorescent lamp luminaries shall comply fully with SABS 1119 and all amendments as well as the additional requirements of this specification. Luminaries which bear the SABS mark are preferred.

(b) Construction

A luminary shall consist of a ventilated body manufactured of cold rolled sheet steel not less than 0,8 mm thick, suitably braced or stiffened to prevent distortion. The body shall be of sufficient strength for the mounting of the entire luminary.

The luminary body shall be designed to accommodate the control gear, wiring, lamp holders and, where applicable, the diffusers. It shall be possible to reach the control gear without disconnecting wiring or removing the luminary.

Except for mounting holes and/or slots and the required openings in air-return luminaries, the back of the body channel shall be closed over the full length of the luminary.

Suitable knockouts shall be provided in the rear of the luminary body for wire entry.

All components, including screws, bolts and nuts utilized in the construction of the luminary or fixing of its components, shall be corrosion proof.

(c) Internal Wiring

Luminaries shall be completely wired internally. Conductors shall be protected with grommets where they pass through holes in the body.

The wiring shall be totally metal enclosed to prevent any possible contact with live components while changing lamps.

The conductor insulation shall be rated to withstand the temperature inside the luminary body without deterioration.

The wiring shall terminate on a suitable terminal block. There shall be no joints in the internal wiring.

An earth terminal, welded to the luminary body, shall be provided. To ensure good earth continuity the earth terminal shall not be spray painted. The earth conductor shall be connected to this terminal by means of a crimped lug.

(d) Lamp Holders

Lamp holders shall preferably be of the telescopic spring loaded type. Where twist-lock type lamp holders are provided, the mounting of the holders shall be able to accommodate the tolerances experienced in the length of lamps and in the manufacture of luminaries.

(e) Control Gear

The control gear, ballasts, capacitors and starters shall be designed and manufactured to suit the control circuitry adopted.

Ballasts shall comply with SABS 890 and 891, suitable for operation on 220/250 Volt, 50 Hz supplies.

Ballasts shall further be suitable for the particular luminary to ensure that the thermal limits specified in par. 3.5 of SANS 1119 are not exceeded.

Noisy ballasts will not be accepted and shall be replaced at no cost.

Starters shall comply with BS 3772. Starters with metal cans shall contain integral earthing facilities to earth the can upon insertion.

Starters shall be accessible from the outside of the luminary, and the replacement of the starter shall not necessitate the removal of lamps.

(f) Capacitors

Capacitors shall comply with SANS 1250. The power factor of each complete fitting shall be corrected to at least 0,85.

(g) Lamps

Fluorescent lamps shall be suitable for the control circuitry used. Lamps shall comply with SANS 1041.

The light colour shall correspond to colour 2 (4 300 K) of SANS 1041.

Lamps of the same colour shall be provided for an entire installation unless specified to the contrary.

There shall be no visible flicker in the lamps and lamps shall readily strike when switched on. Faulty lamps or ballasts shall be replaced at no cost to the Engineer.

Channel Luminaries

Channel luminaries shall consist of a ventilated, enclosed channel body with one or more lamps as specified. The channel body shall house the ballast, capacitor, terminals and internal wiring.

Provision shall be made for the addition of reflector wings and/or diffusers.

Three sets of mounting slots and knock-outs suitable for mounting onto standard round conduit boxes and/or 20 mm Ø conduit pendant rods, shall be provided in the rear of the channel, one in the centre and one approximately one sixth from each end.

A knockout suitable for a 20 mm Ø conduit entry shall be provided at each end of the channel. The distance between the back of the luminary and centre of the knockout shall be approximately 25 mm.

The knockouts shall be positioned on the centre line of the channel.

The body channel shall incorporate a removable cover acting as a reflector, manufactured of cold rolled steel, not less than 0,8 mm thick, designed and mounted to completely cover the interior of the body channel and its contents and extending over the full length of the luminary up to the lamp holders.

The reflector shall be firmly held in position with a latching device consisting of knurled, coin slot, captive screws. Plastic, used as a spring mechanism, is not acceptable as a latching device for reflectors. The action of the latching device shall not deteriorate due to use and/or ageing.

Dust and Spray Proof Luminaries

Construction

The fluorescent luminary shall be totally enclosed and dust- and moisture-proof with an IP55 rating. It shall be designed for and supplied with 2 x 58 watt lamps.

The body of the luminary shall consist of the die-formed glass-fibre reinforced polyester (GRP), which has an exceedingly long life under corrosive conditions or ultraviolet radiation.

The diffuser of the luminary shall consist of clear injection moulded polycarbonate with prisms on the inside and smooth outside.

The diffuser of the luminary shall be firmly held in position by at least 8 injection moulded thermoplastic clamp type catches.

A closed cell foam gasket shall be provided as a seal between the body and the reflector.

The gear tray of the fitting shall be retained in place by two rotary latches obviating the need for tools when servicing the luminary. It shall be secured to the body by nylon safety straps from which it can hang during opening of the fitting. The sheet metal gear tray shall be finished in white polyester powder paint.

Rot lock lamp holders shall prevent accidental lamp removal. The lamp holders shall be of the bi-pin polycarbonate type which can accommodate both 26 mm and 38 mm diameter lamps.

- The conductors shall be covered with a high temperature insulation rated at 1050C, 600 V.
- The electrical connection to the fitting shall be via a three-way, 15A terminal block.
- One 20 mm diameter entry shall be provided at each end of the luminary.

Switch start ballasts comply with the requirements of SABS 890 to operate both 26 mm and 38 mm lamps shall be used in the fitting.

Any openings cut into the back of the body of the fitting shall be sealed again with silicone rubber after wiring or cabling is complete.

Contractors shall ensure that the fitting is left completely dust and insect proof after working on the fitting for whatever reason.

Exterior Security Lights

The luminary shall consist of a high pressure die cast aluminium body with non-discolouring prismatic high impact acrylic diffuser bowl and shall be designed to operate 125 Watt mercury vapour and 70 Watt high pressure sodium/metal halide lamps.

- The luminary shall bear the SABS 1464 safety mark.
- The luminary shall have a degree of protection that complies with SANS 1222:
- The lamp compartment shall have a rating of IP66.

The body shall be supplied with three mounting holes. Electrical cable entry shall be via a compression type gland at the rear of the luminary.

The diffuser bow shall be manufactured from borosilicate glass with internal prisms.

The prisms shall be restricted to the inside of the bow and shall be carefully formed to work in conjunction with the reflector to provide a spacing to mounting height ratio of up to 8:1, whilst controlling excessive glare. The bowl shall be seated in a rigid high-pressure die cast aluminium frame with two silicon sponge gasket systems.

This frame assembly shall be held to the body by four stainless steel M6 Alien head captive screws located outside the sealed lamp compartment.

A wire guard shall be installed over the fitting. The type of wire guard offered shall be approved by The District as most commercially available wire guards are not suitable to withstand vandalism.

A high purity, single piece, the formed aluminium reflector shall be mounted on the reflector back plate.

Fine slots in the reflector, aligning with the reflector plate, shall ensure precise positioning and consistent optical performance.

The control gear shall be mounted directly onto the body to provide optimum heat dissipation. It shall be suitable for operation with the specified rating of the lamp on a 230 V + 30%/-10%/50 Hz single-phase system.

All control gear components shall be removable and bear the relevant SANS mark.

All internal wiring shall be Teflon's coated with protective sleeving to prevent damage by possible abrasion. All screws, bolt and metal parts shall be stainless steel or non corrosive material.

Mains connections shall be by means of a suitable screw terminal block with a wire clamping contact. Igniters, where applicable, shall be of the superposed pulse type.

- The luminaire shall be power factor corrected to a minimum of 0,85.
- Contractors shall ensure that the fitting is left completely dust and insect proof after working on the fitting for whatever reason.

General Requirements of Electrical Work at Boreholes and Small Installation

Scope of Electrical Installation Work

This section includes the design, manufacture, supply delivery, offloading, storing, if necessary, erection, painting commissioning, testing and maintenance during the maintenance period and final handing-over of all the necessary electrical equipment (unless otherwise indicated below) which shall include the following:

*Supply and installation of the power supply cables from the ESKOM meter point to the MCC or starter panel.

*Supply and installation of motor control switchgear panels.

*All control cabling in pump stations or on sites.

*Earthing and lightning protection of electrical equipment.

*Installation of all instrumentation and control devices.

This specifications covers electrical installations using transformers up to and including 1 000 kVA rating, 600/1 000 V cables up to 240 mm² 4-core, motors up to 185 kW as well as all switchgear, equipment and instrumentation used in conjunction with such installations.

This Specification further describes the usual materials required for electrical installations and general methods of installing these materials. This Specification forms a part of any project specifications which are bound together with this Specification, or issued as a separate volume. Where drawings are issued with this Specification, or where standard drawings of The District are referred to in this Specification, such drawings

shall be read together with this Specification and shall form part of this Specification for all intents and purposes.

Application

The Specifications here following are essentially functional specifications only. The contractor shall design the various installations and produce complete constructional drawings and complete lists of equipment complying with the requirements set out below and with those of the standard specifications listed further herein. The Contractor shall then submit all this information to the Engineer for approval before commencing manufacture of any motor control panels or small starter panels or power distribution Boards.

General Requirements

All material and equipment supplied and/or installed under this Contract shall be new and of high class quality and shall comply with the requirements laid down in the latest editions of the SANS, BSS or IEC specifications.

All materials shall be subject to the approval of the District.

Departmental standard specifications for various materials to be used under this contract are available from The District in Pretoria.

Similar equipment supplied under this contract must be identical in all respects and it shall be possible to interchange parts of identical equipment.

A Contract shall contain equipment of only one supplier for a specific type of equipment, such as, for instance, contractors or circuit breakers, unless the project specification or this specification allows deviation from this requirement.

Materials wherever possible must be locally available in South Africa and must preferably be of South African manufacture.

Materials removed from a specific site or has become redundant shall not be re-used on another site without the written permission of the District.

- The uses of second hand materials are strictly forbidden.

The District will also not be liable for over-supply of materials. Contractors shall plan their work and shall assess the quantities of material to be used. Unused materials shall be removed from site after the completion of the project as the District will not accept for materials on site which have not been built into the Contract.

Cables, wire and conduit lengths will be paid on the basis of "As Built" quantities only.

Any quantities in any Schedule which may form part of this document or which may be issued as a separate schedule must be regarded as being provisional as far as re-measurable material is concerned and the value of such material on site will be paid for per installed quantity.

Invoices for payment shall contain full details of the material installed and work done since the previous payment and shall also show the materials and work done as per previous certificates so that an assessment can be made of the progress of the work.

Test or commissioning results obtained shall be submitted in detail reports together with the invoices.

- Word such as "motor not earthed" will not be acceptable.

The serial number of equipment or specific detail descriptions of positions and types of equipment worked on shall be shown on invoices and schedule item work shall refer to the schedule item number and the specific application or position where applied shall be detailed on invoices.

Invoices for materials purchased, together with the signatures of the recipients, shall be submitted together with invoices.

Compliance with Law and Regulations

The installation, testing and commissioning of electrical equipment shall always comply with the requirements, stipulations and regulations contained in the following Act:

Machinery and Occupational Safety Act 85 of 1993 with special reference to section 1 (Act & Regulations), section 2 (Administrative Regulations), section 6 (Electrical Installation Regulations), section 13 (Driven Machinery Regulations), section 14 (Electrical Machinery Installations), section 15 (General Machinery Regulations) and section 16 (General Safety Regulations).

Special mention is made to Annexure A1 of section 6, which will be applicable on completion of the work.

The Mines and Works Act, No. 27 of 1956 and subsequent amendments and regulations issued there under.

- The Electricity Act, No. 26 of 1958.
- Explosives Act, No. 26 of 1956.
Code of Practice for the Wiring of Premises – SANS 0142.

The contractor shall be responsible for serving of all notices and paying of all fees due in terms of the above laws and regulations.

Transport of Equipment

Contractors will be responsible for the transport of all materials and equipment to the site and on the site.

All material and equipment must be thoroughly packed and any damage that may occur must be repaired or corrected by the Electrical Contractor before installation and testing proceeds.

Local Authority

The Contractor must arrange with the Supply Authority, Administration, TELKOM and other authorities to make sure that their regulations are met when the main incoming supply and the substation equipment is installed

Drawings and Data

Where Bidder's Officer items that differ from those as specified, the BID must submit drawings, diagrams and full technical details of such items on the closing date of BIDs.

Changeability

Equipment of the same type shall be obtained from one manufacturer and components shall be changeable.

Maintenance and servicing facilities

Each Bidder shall be able to clearly demonstrate possession of adequate servicing and maintenance facilities, including a comprehensive range of spares, to the satisfaction of the Engineer.

To this effect, each Bidder shall include a statement in his offer, describing the facilities available for servicing and maintenance, as well as the availability of adequate spares for the equipment offered in his BID.

As a further requirement, the precise physical street address and telephone number of the premises nearest to this installation, where these as stated required facilities exist, together with details regarding test equipment and personnel permanently available at this address, shall be furnished along with this statement.

Bidders shall accept as a condition of this contract that any premises indicated in this statement may be inspected prior to the awarding of the contract. It shall be noted that offers may be passed over where, in the opinion of the Engineer, these facilities are inadequate in terms of the foregoing requirements.

Personnel used for repair work during the period of maintenance. The Contractor shall only allow properly qualified and skilled staff to work on the equipment and installation at all times.

Performance of Contractor

Should it be found at any stage of the contract period that the services performed or any component thereof deviates from the specified requirements and that such deviation had not been noted by the Bidder in his BID offer, the Contractor will be required to redo such services or any component thereof with work complying with the requirements specified in the documents listed above, at no extra to the Employer.

If at any stage of this contract it is found that the Contractor has deviated from the requirements of this specification whether it be by the installation of equipment not specified, etc. or otherwise, without prior WRITTEN consent from the Engineer, the Engineer shall have the right to order the Contractor to remove such items, equipment, etc. constituting the deviation and replace it with the exact item, equipment, etc. specified, without any adjustment in the BID price.

Remedy on Contractor's failure to carry out work as required.

Should the Contractor fail to commence investigation/repair as required within a period of 10 days after receipt of written notice thereof, the Employer shall be entitled to have such work carried out by his own staff or by other Contractors at the Contractor's account.

If such work is work which the Contractor should have carried out at his own cost, as detailed below, the Employer shall be entitled to recover from the Contractor the cost thereof or deduct the same amount from any moneys due or that become due to the Contractor.

Radio/Telemetric Systems

A technical clarification to discuss and clarify any technical queries that may exist regarding the extent of the "Detail Specification and material required" shall be held subsequent to the ordering of material or before any work commences

ANNEXURES

- PART B – Day work Schedule
- PART B – Job Instruction Form
- PART B – Pricing Data

Declaration Certificate for Local Production and Content for Designated Sectors

failure to submit completed declaration may lead to tender disqualification

DAY WORKS SCHEDULE

Tendered rates are for comparison purposes only not for evaluation.

failure to submit completed day work schedule may lead to tender disqualification

2) DAY WORKS SCHEDULE

This day work schedule will be used at the discretion of the Agent for the valuation of extra work, which cannot conveniently be valued at rates submitted in the Bill of Quantities.

The rates entered for labour and material shall be inclusive of overhead charges and profit, site supervision of staff, insurances, holidays with pay and the use and maintenance of small hand tools and non-mechanical plant, traveling allowances, other emoluments and allowances. Provision will be made for the insertion of percentages to cover all these items which are henceforth termed “on-costs”. The rate used in the deduction of the value of the day work is thus the basic rate plus the percentage “on-costs”.

In the case of plant no “on-costs” items is provided. The rate entered shall include any of the above “on-costs” which are pertinent and shall include operator’s costs, consumable stores, maintenance, etc.

The Tenderer must fill in each item listed below or his Tender may be rejected as being incomplete.

A LABOUR

1 Unskilled _____ per hour plus _____ % “On-Cost”

2 Semi-skilled _____ per hour plus _____ % “On-Cost”

3 Skilled _____ per hour plus _____ % “On-Cost”

B PLANT DESCRIPTION

RATE PER HOUR	WORKING	STANDING
---------------	---------	----------

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

NOTE:

The rates for compressors shall include for hoses and pneumatic tools.

C MATERIAL

The TENDERER shall state the percentage “On-Cost” he will add to the basic price of materials.

_____ %

Job Instruction Form

3)Electrical borehole installations, inspections & pre-commissioning continued....**E. Pressure Switch:**

E1 Left side on zero

YES	NO
-----	----

E2 If not on zero, specify reason: _____

and

Indicate the setting

E3 Right hand setting at least 3 Bar higher than the maximum reading on pipeline pressure gauge "when started against pressure"

Bar		
YES	NO	
YES	NO	Bar

E4 Right hand side turned down to check cut off, indicate reading

F. Panels:F1 Are earthing lightning arrestors checked?
(Normally highest when starting against a full pipeline)

YES	NO
-----	----

F2 Are 10 mm² bare copper external earth wires used between starter and meter box?

YES	NO
-----	----

F3 Check earth resistance reading between the meter box's earth and equipment

Reading:	
----------	--

F4 Resistance readings between the three phases and the earth

Red _____ White _____ Blue _____

F5 Check the resistance between the earth cable and the earth.

Reading:	
----------	--

G. Can pump be started with scour valve closed?

YES	NO
-----	----

This documentation must be attached to the Electrical and Mechanical Contractor's Invoices. If not, no payment will be forwarded.

Remarks:

QUALITY ASSURANCE INSPECTION

DATE	INSPECTORS NAME	SIGNATURE	TELEPHONE NO.

I hereby confirm that the electrical and mechanical work has been checked and the above has been pre-commissioned.**If the above was not done, the cost for "Comebacks" will be for the contractor's account.**

ELECTRICAL CONTRACT (Name) _____ Date: _____				
MECHANICAL CONTRACT (Name) _____ Date: _____				
ELECTRICAL INSPECTOR (Name) _____ Date: _____				
	Revision Approved (R-1) Signature			Date

FORM E: General Electrical Maintenance Work (Sheet 1 of 2)

ELECTRICAL AND MECHANICAL CONTRACTORS INSPECTIONS								
ON ELECTRICAL INSTALLATIONS AND PRE-COMMISSIONING								
District _____ Area _____ Settlement _____								
Installation No.: _____ Motor serial No. _____ Maintenance No. W _____								
DATE CARRIED OUT: _____								
I hereby confirm that the Electrical and Mechanical work has been checked and that the following has been pre-commissioned.								
Delivery Yield (Taken from flow meter) _____ (l/s)								
Mark applicable columns with an X								
All mechanical work was completed before electrical construction work commenced.	<table border="1" style="margin: auto;"> <tr> <td style="width: 50px;">YES</td> <td style="width: 50px;">NO</td> </tr> <tr> <td>YES</td> <td>NO</td> </tr> </table>		YES	NO	YES	NO		
YES	NO							
YES	NO							
The pump was started with the scour valve open at first attempt	<table border="1" style="margin: auto;"> <tr> <td style="width: 50px;">YES</td> <td style="width: 50px;">NO</td> </tr> <tr> <td>YES</td> <td>NO</td> </tr> </table>		YES	NO	YES	NO		
YES	NO							
YES	NO							
A. Motor:								
A1	Rotational direction of motor	<table border="1" style="margin: auto;"> <tr> <td style="width: 50px;">YES</td> <td style="width: 50px;">NO</td> </tr> <tr> <td>YES</td> <td>NO</td> </tr> </table>	YES	NO	YES	NO		
YES	NO							
YES	NO							
A2	Overload setting and measurements of electrical motor on full load, state Amps read	<table border="1" style="margin: auto;"> <tr> <td style="width: 50px;">YES</td> <td style="width: 50px;">NO</td> <td style="width: 50px;">A</td> </tr> <tr> <td>YES</td> <td>NO</td> <td></td> </tr> </table>	YES	NO	A	YES	NO	
YES	NO	A						
YES	NO							
A3	Set Star/Delta timer:	<table border="1" style="margin: auto;"> <tr> <td style="width: 100px;">Time:</td> </tr> <tr> <td> </td> </tr> </table>	Time:					
Time:								
B. Pressure Gauge:								
B1	Maximum bar on pressure gauge, indicate reading (Normally highest when starting against a full pipeline)	<table border="1" style="margin: auto;"> <tr> <td style="width: 50px;">YES</td> <td style="width: 50px;">NO</td> <td style="width: 50px;">Bar</td> </tr> <tr> <td>YES</td> <td>NO</td> <td></td> </tr> </table>	YES	NO	Bar	YES	NO	
YES	NO	Bar						
YES	NO							
C. Timers								
C1	Is duty cycle according to recommendation? _____ hours	<table border="1" style="margin: auto;"> <tr> <td style="width: 50px;">YES</td> <td style="width: 50px;">NO</td> </tr> <tr> <td>YES</td> <td>NO</td> </tr> </table>	YES	NO	YES	NO		
YES	NO							
YES	NO							
C2	Set timer from _____ am to _____ pm or 24 hours cycle	<table border="1" style="margin: auto;"> <tr> <td style="width: 50px;">YES</td> <td style="width: 50px;">NO</td> </tr> <tr> <td>YES</td> <td>NO</td> </tr> </table>	YES	NO	YES	NO		
YES	NO							
YES	NO							
C3	Set low level timer and pressure switch cut out on four hours	<table border="1" style="margin: auto;"> <tr> <td style="width: 50px;">YES</td> <td style="width: 50px;">NO</td> </tr> <tr> <td>YES</td> <td>NO</td> </tr> </table>	YES	NO	YES	NO		
YES	NO							
YES	NO							
C3.1	Specify timer time setting: _____ hours							
D. Low-level Probe:								
D1	Sensitivity of probe levels checked	<table border="1" style="margin: auto;"> <tr> <td style="width: 50px;">YES</td> <td style="width: 50px;">NO</td> </tr> <tr> <td>YES</td> <td>NO</td> </tr> </table>	YES	NO	YES	NO		
YES	NO							
YES	NO							
D2	Specify level probe length _____ m.							
D3	Is probe's positive and negative brass connectors soldered and filled with epoxy.	<table border="1" style="margin: auto;"> <tr> <td style="width: 50px;">YES</td> <td style="width: 50px;">NO</td> </tr> <tr> <td>YES</td> <td>NO</td> </tr> </table>	YES	NO	YES	NO		
YES	NO							
YES	NO							

D4	Low level probe cuts off when probe is removed indicate level	YES	NO	m
E.	Sauter Pressure Switch:			
E1	Left side set on..... and Right side set on	YES	NO	
E2	If not on zero, specify reason:	and		
E3	Indicate the setting Right hand setting at least 3 Bar higher than the maximum reading on pipeline pressure gauge "when started against pressure"	Bar		
		YES	NO	

FORM E: General Electrical Maintenance Work (Sheet 2 of 2)

E. Right hand side turned down to check cut off indicate reading	YES	NO	Bar
F. Panels:			
F1 Are earthing lightning arrestors checked?	YES	NO	
F2 Are bare copper external earth wires connected between starter and meter box?	YES	NO	
F3 Check earth resistance reading between the meter box's earth and equipment	Reading:		
F4 Resistance readings between the Low level, High level and the earth Red _____ White _____ Blue _____			
F5 Check the resistance between the earth cable and the earth	Reading:		
G. Can pump be started with full load of water? (Rising main)	YES	NO	
This documentation must be attached to the Electrical and Mechanical Contractor's Invoices. If not, no payment will be forwarded. Remarks:			
QUALITY ASSURANCE INSPECTION			
Date:	Inspectors name	Signature	Telephone number
I hereby confirm that the electrical and mechanical work has been checked and the above has been pre-commissioned.. If the above was not done, the cost for "comebacks" will be for the Mechanical contractor's or the electrical contractors account ELECTRICAL CONTRACTOR (Name) _____ Date: _____ MECHANICAL CONTRACTOR (Name) _____ Date: _____ ELECTRICAL INSPECTOR/ENGINEER (Name) _____ Date: _____			
Revision Approved (R-1) Signature			Date

KING CETSHWAYO DISTRICT MUNICIPALITY

FORM A**WRITTEN REQUEST FOR MAINTENANCE WORK**

SDM REF NO.

Scheme:		Enquiry date :		Order number:	
Water Source Number:		Settlement/Plant/Dam:			
Name of Enquirer/s:		Fax NO.:			
Address		Telephone NO:			
		Cell NO.:			

Please indicate when order will be issued: **Date:**

1. Please provide the following services: (Mark with a X in the applicable block)

Quotation		Generators	
Budget Quotation		Pipework	
Site Visit		Reservoirs	
Brake down repairs		Pumps	
Mechanical Maintenance		Valves	
Electrical Maintenance		Cranes	
Dams		Screens / Gates	
Boreholes		Walk ways	
Diesel Engines		Corrosion protection	
Booster pump station		Testing	
Purification Plant		Quality Inspection	
Sewerage Plant		Others	

2. Scope of Work: (Please submit detailed description and identification numbers)

Serial number:		Maintenance number:	W
Serial number:		Maintenance number:	W
Description:			

3. Please indicate the status of the work:

1=EMERGENCY	2=URGENT	3=Normal Work
-------------	----------	---------------

4. Work to be carried out during :

Normal working hours	After hours	Weekends/Public holidays
----------------------	-------------	--------------------------

5. Signature of Dept Head/Representative:

SIGNATURE	DATE APPROVED	NAME

6. Additional comments by Operations & Maintenance office:										
DATE		NAME				SIGNATURE				
OPERATION & MAINTENANCE OFFICE TELEPHONE NUMBERS :										

<i>FORM B</i>											
INSTRUCTIONS FOR CONTRACTORS TO CARRY OUT MAINTENANCE WORK											
Scheme:				Enquiry date :				Order number:			
Water Source Number:						Settlement/Plant/Dam:					
Name of Enquirer/s:								Fax NO.:			
Address								Telephone NO:			
								Cell NO:			
1. Please provide the following services: (Mark with a X in the applicable block)											
Quotation						Generators					
Budget Quotation						Pipework					
Site Visit						Reservoirs					
Brake down repairs						Pumps					
Mechanical Maintenance						Valves					
Electrical Maintenance						Cranes					
Dams						Screens / Gates					
Boreholes						Walk ways					
Diesel Engines						Corrosion protection					
Booster pump station						Testing					
Purification Plant						Quality Inspection					
Sewerage Plant						Others					
Detailed Scope of Work:											
1											
2											
3											
4											
5											
6											
DATE				NAME				SIGNATURE			
OPERATION & MAINTENANCE OFFICE TELEPHONE NUMBER:											

COMMISSIONING AND COMPLETION CERTIFICATE

CONTRACTOR: _____ DATE _____

SDM ORDER NO.: _____

SDM BID NO.		(Equip)		SK-8/3/1-3/2012/13 (M/E)		(Civil)
-------------	--	---------	--	-----------------------------	--	---------

Note: Mark with a X where applicable.

	Purification Plant		Borehole		Booster Pump		Sewerage Works
	Pipe Work		Valves		Diesel Engines		Electrical

A. Report to Dept Head:

Name: _____ Signature: _____

Office Name: _____ Date Visited: _____

B. Report to Satellite Office:

Name: _____ Signature: _____

Office Name: _____ Date Visited: _____

1. DETAIL:

1.1 Area Name: _____ Village Name: _____

1.2 Water Source No. H _____ Alternative No. _____

1.3 Maintenance No. W _____ Serial No. _____

1.4 Engine/Motor Type & Model and kW _____ Engine/Motor Type & Model and kW _____

1.5 Pump Type: _____ Pump Model Name: _____

1.6 Pump Type: _____ Pump Model Name: _____

- 1.7 Recommended Yield (l/s): _____ Commissioning Yield (l/s): _____
- 1.8 Recommended Pumping Time (hrs/day): _____ Rising main (pipe) pressure (kPa/Bar): _____
- 1.9 Pump/Motor alignment _____ Pump/Motor vibration test _____
- 1.10 Scope of Work: _____

2.	COMMISSIONING DONE BY: SDM					
	Name	Signature	Date	Contact Number	Fax	Cell No.

3. FAULT LIST

- 3.1 _____

- 3.2 _____

- 3.3 _____

4.	QUALITY ASSURANCE INSPECTION				
	Date inspected	Inspectors name	Signature	Telephone number	Cell No.
4.1					

5.	CONTRACTOR				
	Contractor	Name	Signature	Date	Contact Number
5.1					

Note: Commissioning form: Attached and submitted with the original invoice for payment

PRICING DATA

Tendered rates are for comparison purposes only not for evaluation **(failure to submit completed price data may lead to tender disqualification)**

Bill of Quantities

Work Package 1 - Mechanical Pump Repairs

PART A

ITEM	DESCRIPTION	Rate per hour
1.	<p><u>Maintenance of Mechanical Equipment</u></p> <p><u>Objectives:</u> To maintain mechanical equipment to function as per original design</p> <p><u>Team</u></p>	
1.1	<u>Call Outs</u>	
1.2	Technician	R
1.3	Trade Tested Fitter	R
1.4	Semi-skilled Fitter	R
1.5	Assistant	R
1.6	Supervisor	R
	Total Rates Carried forward to Part E	

PART B

Centrifugal Pumps – 70m³/h to 250m³/h

ITEM	DESCRIPTION	Rate per hour
2.	Pump Repairs	R
2.1	STRIP AND CLEAN	R
2.2	REPLACE BEARINGS	R
2.3	REPAIR BEARING HOUSING	R
2.4	REPLACE BEARING HOUSING	R
2.5	REPLACE BEARING DE	R
2.6	REPLACE BEARING NDE	R
2.6	MACHINING	R
2.7	REPLACE MECHANICAL SEAL DE	R
2.8	REPLACE MECHANICAL SEAL NDE	R
2.9	REPLACE GLAND FOLLOWER	R
2.10	REPLACE SHAFT SLEEVE	R
2.11	ASSEMBLE	R
Sect. 2 cont..	Procurement of pump components (Average Prices for Pumps Raging from 70 to 250m³/h)	Sum
2.12	REPAIR IMPELLER	R
2.13	REPLACE IMPELLER	R
2.14	REPAIR WEAR RING	R
2.15	REPLACE WEAR RING	R
2.16	REPLACE DEFUSERS	R
2.17	REPLACE SHAFT	R
2.18	REPAIR / REPLACE SUCTION CASING	R
2.19	REPAIR/ REPLACE DELIVERY CASING	R
2.20	REPAIR/REPLACE STAGE CASING	R
2.21	SERVICE KIT INCLUDING ALL O-RINGS/GASKETS	R
2.22	BOLTS, NUTS, WASHERS	R

CONTRACT

Part C3: Specification

C100

Specification

2.23	IMPELLER LOCK NUTS /SLEEVES	R
2.24	SHAFT STAGE SLEEVES / SPACERS	R
2.25	CONSUMABLES	R
2.26	PRESSURE TEST	R
2.27	LASER ALIGNMENT	R
2.28	SANDBLAST AND PAINT	R
	Total rate carried forward to Part E	

The rate will be applicable per stage on multistage centrifugal pumps, where necessary.

PART C

Mono-Pumps – 50m³/h to 200m³/h

ITEM	DESCRIPTION	Rate per hour
3.	Pump Repairs	R
3.1	STRIP AND CLEAN	R
3.2	REPLACE BEARINGS	R
3.3	REPAIR BEARING HOUSING	R
3.4	REPLACE BEARING HOUSING	R
3.5	REPLACE BEARING DE	R
3.6	REPLACE BEARING NDE	R
3.7	REPLACE MECHANICAL SEAL DE	R
3.8	REPLACE MECHANICAL SEAL NDE	R
3.9	REPLACE GLAND FOLLOWER	R
3.10	REPLACE SHAFT SLEEVE	R
3.11	ASSEMBLE	R
Sect. 2 cont..	Procurement of pump components (Average Prices for Pumps Raging from 70 to 250m³/h)	Sum
3.12	REPAIR IMPELLER	R
3.13	REPLACE IMPELLER	R
3.14	REPLACE SHAFT	R
3.15	REPAIR/REPLACE STAGE CASING	R
3.16	SERVICE KIT INCLUDING ALL O-RINGS/GASKETS	R
3.17	BOLTS, NUTS, WASHERS	R
3.18	IMPELLER LOCK NUTS /SLEEVES	R
3.19	SHAFT STAGE SLEEVES / SPACERS	R
3.20	CONSUMABLES	R
3.21	PRESSURE TEST	R
3.22	LASER ALIGNMENT	R
3.23	SANDBLAST AND PAINT	R
	Total rate carried forward to Part E	

PART D

Borehole Pumps – 20m³/h to 150m³/h

ITEM	DESCRIPTION	Rate per hour
4.	Pump Repairs	R
4.1	STRIP AND CLEAN	R
4.2	REPLACE BEARINGS	R
4.3	REPAIR BEARING HOUSING	R
4.4	REPLACE BEARING HOUSING	R
4.5	REPLACE BEARING DE	R

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Part C3: Specification

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Specification

4.6	REPLACE BEARING NDE	R
4.7	MACHINING	R
4.8	REPLACE MECHANICAL SEAL DE	R
4.9	REPLACE MECHANICAL SEAL NDE	R
4.10	REPLACE SHAFT SLEEVE	R
4.11	ASSEMBLE	R
Sect. 2 cont..	Procurement of pump components (Average Prices for Pumps Raging from 20 to 150m3/h)	Sum
4.12	REPLACE IMPELLER (S)	R
4.13	REPLACE DEFUSERS	R
4.14	REPLACE SHAFT	R
4.15	SERVICE KIT INCLUDING ALL O-RINGS/GASKETS	R
4.16	BOLTS, NUTS, WASHERS	R
4.17	IMPELLER LOCK NUTS /SLEEVES	R
4.18	SHAFT STAGE SLEEVES / SPACERS	R
4.19	CONSUMABLES	R
4.20	SANDBLAST AND PAINT	R
	Total rate carried forward to Part E	

PART A1**Work Package 2 - Electrical Services:**

ITEM	DESCRIPTION	Rate per hour
1.	<u>Maintenance of Electrical Equipment</u> <u>Objectives:</u> To maintain electrical equipment to function as per original design Medium Voltage <u>Team</u>	
1.1	<u>Call Outs</u>	
1.2	Master Electrician per hour	R
1.3	Trade Tested Electrician per hour	R
1.4	Semi-skilled Electrician per hour	R
1.5	Assistant per hour	R
1.6	Supervisor per hour	R
2.	<u>Service</u>	
2.1	Strip ,clean and servicing for LV breaker	R
2.2	Strip, clean and service of LV breaker	R
2.3	Testing and cleaning of bus buzz	R
2.4	Consumables	R
3.	<u>Cables</u>	
3.1	50mm ² per meter	R
3.2	70mm ² per meter	R
3.3	95mm ² per meter	R
3.4	120mm ² per meter	R
3.5	150mm ² per meter	R

3.6	185mm ² per meter	R
3.7	240mm ² per meter	R
3.8	300mm ² per meter	R
3.9	400mm ² per meter	R
3.10	500mm ² per meter	R
3.11	630mm ² per meter	R
3.12	800mm ² per meter	R
3.13	1000mm ² per meter	R
	Cable Kits	Sum
3.27	Splicing kit sets (50mm ² - 95 mm ²)	R
3.28	Splicing kit sets (120mm ² - 500 mm ²)	R
3.29	Splicing kit sets (630mm ² - 1000 mm ²)	R
4.	Disbursements	
4.1	Rate per kilometer not exceeding 3.2L (D/P) engine (based on Department of Transport rates).	R
	Total rate carried forward to Part F1	

PART B1

Electrical Motor Repairs

Motors below 15kW to be replaced in case of windings failure.

Item	DESCRIPTION	Sum
5.	Electrical Motors supply	
5.1	0.75kW Motor	R
5.2	1.1 kW Motor	R
5.3	1.5 kW Motor	R
5.4	2.2 kW Motor	R
5.5	3 kW Motor	R
5.6	3.7 kW Motor	R
5.7	4 kW Motor	R
5.8	5.5 kW Motor	R
5.9	7.5 kW Motor	R
5.10	11 kW Motor	R
5.11	15 kW Motor	R
5.12	20 kW Motor	R
5.13	25 kW Motor	R
5.14	30 kW Motor	R
5.15	40 kW Motor	R
5.16	50 kW Motor	R
5.17	60 kW Motor	R
5.18	75 kW Motor	R
5.19	100 kW Motor	R
5.20	125 kW Motor	R
5.21	150 kW Motor	R
5.22	175 kW Motor	R

5.23	200 kW Motor	R
5.24	225 kW Motor	R
5.25	250 kW Motor	R
5.26	300 kW Motor	R
	Total carried forward to Part F1	

PART C1

Repairs to Motor Sizes (15kW – 50kW)

ITEM	DESCRIPTION	Rate per hour
6.	Electrical Motor Repairs	
6.1	STRIP AND CLEAN	R
6.2	REWIND	R
6.3	WASH AND BAKE	R
6.4	REPAIR STATOR FLY LEADS	R
6.5	REPLACE CONNECTOR BLOCK	R
6.6	BALANCE ROTOR	R
6.7	REPLACE HEATERS	R
6.8	REPLACE THERMISTORS	R
6.9	REPLACE BEARING DE	R
6.10	REPLACE BEARING NDE	R
6.11	REPLACE COOLING FAN	R
6.12	REPLACE COOLING FAN COWLING	R
6.13	REPLACE COOLING PIPING	R
6.14	MEASURE AND VERIFY SHAFT TOLERANCES	R
6.15	MEASURE AND VERIFY END SHIELD TOLERANCES AND BEARING INSULATION: DE	R
6.16	MEASURE AND VERIFY END SHIELD TOLERANCES AND BEARING INSULATION: NDE	R
6.17	MACHINING AND RE -WORK	R
6.18	BOLTS, NUTS, WASHERS	R
6.19	ASSEMBLE	R
6.20	CONSUMABLES	Sum
6.21	SANDBLAST AND PAINT	Sum
6.22	TEST RUN	Sum
6.23	TEST CERTIFICATE	Sum
	Total Carried Forward to Part F1	

PART D1

Repairs to Motor Sizes (60kW – 125kW)

ITEM	DESCRIPTION	Rate per hour
7.	Electrical Motor Repairs	
7.1	STRIP AND CLEAN	R
7.2	REWIND	R
7.3	WASH AND BAKE	R
7.4	REPAIR STATOR FLY LEADS	R
7.5	REPLACE CONNECTOR BLOCK	R
7.6	BALANCE ROTOR	R
7.7	REPLACE HEATERS	R
7.8	REPLACE THERMISTORS	R
7.9	REPLACE BEARING DE	R
7.10	REPLACE BEARING NDE	R
7.11	REPLACE COOLING FAN	R
7.12	REPLACE COOLING FAN COWLING	R
7.13	REPLACE COOLING PIPING	R
7.14	MEASURE AND VERIFY SHAFT TOLERANCES	R
7.15	MEASURE AND VERIFY END SHIELD TOLERANCES AND BEARING INSULATION: DE	R
7.16	MEASURE AND VERIFY END SHIELD TOLERANCES AND BEARING INSULATION: NDE	R
7.17	MACHINING AND RE -WORK	R
7.18	BOLTS, NUTS, WASHERS	R
7.19	ASSEMBLE	R
7.20	CONSUMABLES	Sum
7.21	SANDBLAST AND PAINT	Sum
7.22	TEST RUN	Sum
7.23	TEST CERTIFICATE	Sum
	Total Carried Forward to Part F1	

PART E1

Repairs to Motor Sizes (150kW – 300kW)

ITEM	DESCRIPTION	Rate per hour
8.	Electrical Motor Repairs	
8.1	STRIP AND CLEAN	R
8.2	REWIND	R
8.3	WASH AND BAKE	R
8.4	REPAIR STATOR FLY LEADS	R
8.5	REPLACE CONNECTOR BLOCK	R
8.6	BALANCE ROTOR	R
8.7	REPLACE HEATERS	R
8.8	REPLACE THERMISTORS	R
8.9	REPLACE BEARING DE	R
8.10	REPLACE BEARING NDE	R
8.11	REPLACE COOLING FAN	R

8.12	REPLACE COOLING FAN COWLING	R
8.13	REPLACE COOLING PIPING	R
8.14	MEASURE AND VERIFY SHAFT TOLERANCES	R
8.15	MEASURE AND VERIFY END SHIELD TOLERANCES AND BEARING INSULATION: DE	R
8.16	MEASURE AND VERIFY END SHIELD TOLERANCES AND BEARING INSULATION: NDE	R
8.17	MACHINING AND RE -WORK	R
8.18	BOLTS, NUTS, WASHERS	R
8.19	ASSEMBLE	R
8.20	CONSUMABLES	Sum
8.21	SANDBLAST AND PAINT	Sum
8.22	TEST RUN	Sum
8.23	TEST CERTIFICATE	Sum
	Total carried to Part F1	

SUMMARY TENDERED RATES – WORK PACKAGE 1 (MECHANICAL SERVICES)

Item	Description	Amount (R)
	PART E	
	SUMMARY OF TENDER VALUE	
1	TOTAL FOR PART A	.....
2	TOTAL FOR PART B	.....
3	TOTAL FOR PART C	.....
4	TOTAL FOR PART D	.....
	SUB TOTAL	_____
	ADD 15% VAT	_____
TOTAL RATES		

SUMMARY TENDERED RATES – WORK PACKAGE 2 (ELECTRICAL SERVICES)

Item	Description	Amount (R)
	PART F1	
	SUMMARY OF TENDER VALUE	
1	TOTAL FOR PART A1	.....
2	TOTAL FOR PART B1	.....
3	TOTAL FOR PART C1	.....
4	TOTAL FOR PART D1	.....
5	TOTAL FOR PART E1	.....
	SUB TOTAL	_____
	ADD 15% VAT	_____
TOTAL RATES		

Tenderer can only tender one of the work packages.