CIDB 7EP OR HIGHER

CIDB REFERENCE NUMBER: _____

PROJECT NO: ERW2510/02

PUBLISH DATE: WEDNESDAY, 20 MAY 2026

DESCRIPTION: RE-TENDER FOR THE APPOINTMENT OF PANEL SERVICE PROVIDER/S IN A FRAMEWORK CONTRACT FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES FOR VARIOUS SITES AT EKURHULENI WATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36) MONTHS DEPARTMENT: INFRASTRUCTURE PLANNING AND PROJECTS

COMPULSORY VIRTUAL BRIEFING SESSION:
Thursday, 11th June 2026 at 10h30

(Virtual Link : https://events.teams.microsoft.com/event/1b466f90-7006-4d70-b447-33a3aa02f28c@1d9cdadc-ce7f-46d7-b303-e5c99a875dc2)
Kindly connect from the ERWAT website to register and attend

CLOSING DATE: *Thursday, 25th June 2026 at 12h00 noon*

FULL NAME OF BIDDER:
(Bidding Entity: cc, (Pty) Ltd, JV, Sole Proprietor, etc.) : _____

CONTACT PERSON : _____

TEL NUMBER : _____

E-MAIL : _____

CIDB REGISTRATION NO. : CRS_____

CENTRAL SUPPLIER DATABASE REG NO. : M_____

BID AMOUNT (VAT INCLUSIVE) : **RATE BASED TENDER:**

ERWAT STAMP

ERWAT
EXCELLENCE IN WATER CARE

PROJECT NO: ERW2510/02

RE-TENDER FOR THE APPOINTMENT OF PANEL SERVICE PROVIDER/S IN A FRAMEWORK CONTRACT FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES FOR VARIOUS SITES AT EKURHULENI WATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36) MONTHS

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ERWAT
EXCELLENCE IN WATER CARE

T1.1 REQUEST FOR PROPOSAL NOTICE AND INVITATION

TENDER NOTICE

Bidders are hereby invited to submit tender offers for the project listed below:

Project No.	Project Description	CIDB Grading	Contact	Compulsory Virtual Briefing Session Date	Closing Date
ERW2510/02	RE – TENDER FOR THE APPOINTMENT OF PANEL SERVICE PROVIDER/S IN A FRAMEWORK CONTRACT FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES FOR VARIOUS SITES AT EKURHULENI WATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36) MONTHS	7 EP OR HIGHER	MS H ZWANE 011 929 7000	**Thursday, 11th June 2026** at **10h30** Registration is required.	**Thursday, 25th June 2026 at 12h00 noon**

Potential bidders may download the bid document from the ERWAT tender site free of charge. Bidders must however note that it remains their responsibility to print the full document, and any omissions submitted due to not printing the full tender document may result in your bid being null and void. Bidders may not alter the downloaded document in any form what so-ever.

A Compulsory clarification meeting with the representative of the employer will be held through a virtual briefing session **https://events.teams.microsoft.com/event/1b466f90-7006-4d70-b447-33a3aa02f28c@1d9cdadc-ce7f-46d7-b303-e5c99a875dc2**. Kindly access the link through the ERWAT website to register and attend the briefing session

Please note this is a compulsory briefing session, and no bids will be accepted if the bidder has not attended this session and documents will only be accepted from contractors whose names appear on the attendance register. ***Kindly note that the company representative that attends this session will be accepted as a person with the relevant technical expertise applicable to this bid.***

Completed Tenders in ink and clearly marked ***"BID ERW2510/02: RE- TENDER FOR THE APPOINTMENT OF PANEL SERVICE PROVIDER/S IN A FRAMEWORK CONTRACT FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES FOR VARIOUS SITES AT EKURHULENI WATER CARE WORKS AS AND WHEN REQUIRED FOR A PERIOD OF 36 MONTHS"*** must be placed in the Tender Box, ERWAT Head Office, Hartebeestfontein Office Park, R25 (Bapsfontein/ Bronkhorstspruit), Kempton Park, not later than ***Thursday, 25th June 2026 @ 12h00*** at which hour and date the Tenders will be opened in public at ERWAT Head Office. Tenders shall remain valid for a period of 120 days from closing date. No late, faxed or other form of Tender will be accepted.

All SCM Enquiries shall be addressed to chantel.kearns@erwat.co.za or Phumzile.mdlalose@erwat.co.za or Inkosinathi.nhlapo@erwat.co.za and All Technical Enquiries shall be addressed to Hlengiwe Zwane at hlengiwe.zwane@erwat.co.za

Bids will be evaluated in terms of ERWAT' Supply Chain Management Policy, the MFMA ACT 56 of 2003 SCM Regulations, the Preferential Procurement Policy Framework Act 2000 and its Regulations, 2022, the General Conditions of Contract for construction (GCC) 2015 and, if applicable, any other special conditions of contract.

"The Special Conditions of Contract are supplementary to that of the General Conditions of Contract. In the event of any contradiction between the GCC or any other applicable contractual agreement, the Municipal Financial Management Act and its applicable regulations will take precedence."

NB: NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE (as defined in Regulation 44 of the Local Government: Municipal Supply Chain Management Regulations).
ERWAT accepts no responsibility for bidders accessing the tender notices from other sites/sources other than the newspapers used, its website (www.erwat.co.za/procurement) and the National Treasury's e-tender portal (www.etenders.gov.za).

WEDNESDAY, 20TH MAY 2026 (date ad is available on the website and advertised)

ERWAT
EXCELLENCE IN WATER CARE

PROJECT NO: ERW2510/02

RE- TENDER FOR THE APPOINTMENT OF PANEL SERVICE PROVIDER/S IN A FRAMEWORK CONTRACT FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES FOR VARIOUS SITES AT EKURHULENI WATER CARE WORKS ON 'AS AND WHEN REQUIRED BASIS' FOR A PERIOD OF 36 MONTHS

T1.2 TENDER DATA

General

The conditions of tender are the Standard Conditions of Tender as contained in Annex F of Board Notice 136 of 2015 in Government Gazette 38960 of 10 July 2015, Construction Industry Development Board (CIDB) Standard for Uniformity in Construction Procurement. See www.cidb.org.za which is reproduced without amendment or alteration for the convenience of Bidders 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.

The following Standard Conditions of Tender as set out in the Tender Data below shall apply to this tender.

Clause No.	TENDER DATA
F1.1	**The Employer is:** Ekurhuleni Water Care Company (ERWAT) Hartebeestfontein Office Park R25 (Bapsfontein/Bronkhorstspruit Road) Kempton Park
F.1.2	**The Tender document's contents is as follows:** **<u>THE TENDER</u>** **Part T1: Tender Procedures (Pink)** T1.1 Tender notice and invitation to Tender

	T1.2 Tender Data **Part T2: Returnable Documents (Pink)** T2.1 List of returnable documents T2.2 Returnable schedules **THE CONTRACT** **Part C1: Agreements and Contract Data (Yellow)** C1.1 Form of Offer and Acceptance C1.2 Contract Data C1.3 Occupational Health and Safety C1.4 Corporate Governance Breach Clause **Part C2: Pricing Data (Yellow)** C2.1 Pricing Instructions C2.2 Bill of Quantities **Part C3: Scope of Work (Blue)** C3.1 Description of Works C3.2 Engineering C3.3 Construction C3.4 Management of Works C3.5 Health and Safety C3.6 Environmental Management During Construction
F1.3	**Interpretation** 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 Tender conditions.
F.1.4	**The Employer's Representatives are:** **SCM: Chantel Kearns/ Phumzile Mdlalose/ Inkosinathi Nhlapo - 011 929-7000** E-mail Address: chantel.kearns@erwat.co.za or Phumzile.mdlalose@erwat.co.za or Inkosinathi.nhlapo@erwat.co.za **Technical: - 011 929 7000** E-mail Address: hlengiwe.zwane@erwat.co.za Attention is drawn to the fact that verbal communication given by the Employer's representative prior to the close of Request for Proposals (Tender) will not be regarded as binding on the employer. Only information issued formally by the employer in writing to the bidders, under the signature of the Accounting Officer or his nominees, will be regarded as amending the Tender documents. Tender offer communicated on paper shall be submitted as an original. In the event that no correspondence or communication is received from ERWAT within one hundred and twenty (120) days after the stipulated closing date and time of the Tender, the Tender proposal will be deemed to be unsuccessful.

F.1.5	**Reject or Accept** The Employer may accept or reject any variation, deviation, Tender offer, or alternative Tender offer, and may cancel the Tender process and reject all Tender offers at any time before the formation of a contract. The employer shall not accept or incur any liability to a bidder for such a cancellation and rejection but will give written reasons for such action upon written request to do so.
F1.6:	**Appointment of Multiple Bidders** ERWAT reserves the right to award this contract to one or more bidders. The lowest bidder or any bid will not necessarily be accepted. The intention of ERWAT is to appoint a Minimum of One (1) bidder, and a Maximum of Three (3) Bidders for this Framework Contract. The decision to appoint multiple bidders will be based on the evaluation of bids received, the nature and scope of the work, and the Company's discretion to ensure optimal project delivery.
F.2.1	**CIDB Requirements** Only those Bidders who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, for a **7 EP class** of construction work, are eligible to have their tenders evaluated. Furthermore, the contractor grading designations (**7 EP class)** for construction works taking place over an agreed number of years (36 Months) shall be based on the entire contract value where such work is: • on an "as and when required" basis Joint ventures are eligible to submit tenders provided that: 1. Every member of the joint venture is registered with the CIDB: 2. The lead partner has a contractor grading designation in the **7 EP class** of construction work; and 3. The combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a **7 EP Class** of construction work or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations. 4. The lead partner must be registered in a contractor grading designation not lower than one level below the required grading designation in the class of construction works under consideration. Please consult the CIDB website for the provisions for joint venture submission. 5. The bulk of the work for this Contract is Mechanical, however it may also include civil, electrical and control & instrumentation aspects. Should these portions be sub-contracted, each Sub-Contractor shall have sufficient CIDB grading in their field to cover their portion of the Contract price. An indication of the portion of the total Contract price allocated to each Sub-Contractor as well as proof of each Sub-Contractors CIDB grading shall be included in the Bidders submissions.
F.2.2	**Cost of Bidding** Accept that the Employer will not compensate the Bidders for any costs incurred in the preparation and submission of a tender offer, including the costs of any testing necessary to demonstrate that aspects of the offer satisfy requirements.
F.2.3	**Check documents** The Bidder shall satisfy himself that the set of tender documents is complete and in accordance with the index. If any page has been omitted or duplicated, or if the script or dimensions, or anything else in the tender document is indistinct, or if doubt exists as to the meaning of any description, or if the tender document contains any obvious errors, the Bidder

	shall immediately notify the Employer accordingly, in writing, so that such discrepancy or indistinctness can be clarified and rectified, as ERWAT or the Agent will not accept any responsibility or consider any claim in connection with such discrepancy or indistinctness, which are not rectified during the tender period.	
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 proposal offer in response to the invitation.	
F2.5	**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.	
F2.6	**Acknowledge Addenda** Acknowledge receipt of addenda to the proposal documents, which the employer may issue, and if necessary, apply for an extension of the closing time stated in the Tender data, in order to take the addenda into account.	
F.2.7	**The arrangements for a compulsory Virtual briefing/clarification meeting are:**	
	Date: **Thursday, 11th June 2026** **Time: 12:00 noon**	**Online:** Kindly access the link through the ERWAT website to register and attend the virtual compulsory briefing session. Virtual Link: **https://events.teams.microsoft.com/event/1b466f90-7006-4d70-b447-33a3aa02f28c@1d9cdadc-ce7f-46d7-b303-e5c99a875dc2**

	Attendance of ERWAT Briefing Sessions Bidders must take note of the provisions for site/briefing sessions as advertised in the media, ERWAT website and or on the e-tender portal. In the event that a compulsory briefing session will be conducted, bidders must attend the session either on site or via virtual platform as indicated in the bid document and advertisement. Bidders will be given a link on the advert and tender document to register prior to the briefing session. On the day of the briefing session, bidders must log onto the link to attend. The virtual platform keeps record of bidders registered and in attendance Documents will only be accepted from bidders whose names appear on the attendance register. Failure to attend the compulsory briefing sessions and bidders whose names do not appear on the register, will render the bidder's submission invalid and will not be considered for evaluation. **Kindly note that the company representative that attends this session will be accepted as a person with the relevant technical expertise applicable to this bid. Please list a minimum of one representative that attended the briefing session below.** Kindly indicate the company representative/s e-mail address who **attended** the briefing session: Name: _____ Name: _____ Email address: _____ Email address: _____ Contact number: _____ Contact number: _____ Kindly note that the above e-mail address/s will be utilised to verify your attendance at the compulsory briefing session conducted on Virtual platform or on-site. In the event that the indicated e-mail address/es cannot be traced on the physical attendance register; virtual platform registration and/or on-line attendance register, it will be taken that your company did not attend the briefing session and will result in your bid not being evaluated. It is the bidder's responsibility to provide correct e-mail address and/or contact details. **Joint Venture:** In the event that the bidding entity wishes to submit an offer as a joint venture, one or both company representatives must attend the briefing session. Kindly indicate above one or both representatives e-mail address who attended the briefing session. Bidders are encouraged to collect/access bidding documents before the briefing session to allow them sufficient time to peruse the scope so that any queries can be dealt with at the briefing session. Bidders will be allowed 10 days from the date of the compulsory briefing session to direct further queries to the SCM department per e-mail. An addendum will be sent to the attending bidders with clarity on questions raised during these 10 days. A copy of the minutes and attendance register will be attached thereto for ease reference. No individual should represent more than one bidder at the compulsory briefing session. At least one member of the JV be represented at the compulsory clarification meeting
F.2.8	**Seek clarification** Questions or queries must be submitted to the Employer at least five (5) working days before the stipulated closing date and time of the Tender. However, ERWAT shall not be liable nor assume liability for failure of the bidder to receive response to any questions and / or queries raised by the bidder by the closing time.

F.2.9	**Pricing the Tender** State the rates and prices in South African Rand (ZAR). • Prices shall be FIXED and FIRM for the first 12 months of the Contract. **Price increments will be based on MBD 3.2 pricing structure annually on the anniversary of this tender.**
F.2.10	**Alterations to documents** Bidder must not make any alterations or additions to the proposal documents, except to comply with instructions issued by the employer, or necessary to correct errors made by the bidder. All signatories to the Tender offer shall sign next to all such alterations. Erasures and the use of masking fluid are prohibited. Copies are not allowed, only original documents will be accepted.
F.2.11	**Submitting a Tender offer** No late, faxed, emailed or other form of Tender will be accepted. Completed Tenders with attached documents, if any, must be submitted in Black ink in sealed envelopes and clearly marked: ***"BID ERW2510/02: RE- TENDER FOR THE APPOINTMENT OF PANEL SERVICE PROVIDER/S IN A FRAMEWORK CONTRACT FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES FOR VARIOUS SITES AT EKURHULENI WATER CARE WORK AS AND WHEN REQUIRED FOR A PERIOD OF 36 MONTHS"*** and must be placed in Tender Box at ERWAT Head Office, Hartebeestfontein Office Park, R25 (Bapsfontein / Bronkhorstspruit), Kempton Park. Accept that the tender submitted to the employer cannot be withdrawn or substituted. **No substitute tender offers will be considered**. All Tenders received by ERWAT will remain in the Company's possession. **A Special Request:** All tender submissions must be provided in hardcopy format on the original bid document as supplied by ERWAT and deposited in the tender box. In addition to the hardcopy, bidders are requested to submit an identical electronic copy (in PDF format) and the BOQ in Microsoft Excel file of the complete tender document via email to **TenderE-Submission@erwat.co.za**. The email must clearly state the tender reference number and the bidder's name in the subject line. The electronic submission must be made by the tender closing date and time. While submission to **TenderE-Submission@erwat.co.za** is not mandatory, bidders are encouraged to do so to assist with the efficient evaluation of bids. Bidders will not be disqualified for not submitting an electronic copy. Both the hardcopy and electronic versions must be identical in every detail, including all completed forms, signed declarations, schedules, and supporting documentation. In the event of any discrepancies between the hardcopy and the electronic copy, the hardcopy version will be considered the official and legally binding submission. Bidders are therefore responsible for ensuring that the contents of both formats are complete, consistent, and fully aligned.
F.2.12	**Information and data to be completed in all respects** To facilitate review of this Tender by ERWAT, it is requested that submissions conform to the following format: 1. **Coversheet:** List Tender Statement, the name of your firm, and the name, address and telephone number of a contact person for questions concerning the Tender submitted.

	2. **Executive Summary:** Provide a brief overview of the project, description of the overall approach to the project, key features of the technologies offered, and an overview of the performance guaranteed. 3. **Relevant Experience and Reference Projects:** Information of relevant projects completed by the Bidder (in South Africa and worldwide) using the specific technologies requested must be provided. 4. **Project Team:** Provide a project team organogram showing the structure and composition of the proposed team. A CV highlighting the relevant project specific experience for each team member must be supplied. 5. **Project Schedule**. Not Applicable 6. **Technical Specification & Datasheets**: All information asked for regarding the technical equipment shall be included here. 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. Responsive Tenders are ONLY those Tenders with all documents and pages, contained herein, that have been signed by the responsible person duly authorised to sign all documents indicated on the returnable document **"FORM C Authority of Signatory".** The above is to be read in conjunction with F3.11 below as well as the Project Specifications detailed in Section C3: Scope of Works.
F.2.13	**Tender Closing** **Closing Date: Thursday, 25th June 2026** **Closing Time: 12H00 Noon**
F.2.14	**Tender offer validity** The Tender offer validity period is 120 Days.
F2.15	**Provide other information** **The bidders are required to submit following documents and if requested to resubmit in case if it was not initially submitted:** (1) Proof of SARS Tax status (pin issued by the South African Revenue Services). (2) Completion of MBD 1,2, 3.2, 4, 5, 6.1, 8 and 9 forms (3) An updated record of payment of rates and taxes (not older than three months) and services to the relevant Municipality must be attached for the bidding company and all its directors. *Refer to FORM A.* The following cases will be reviewed and assessed where applicable: i. Where the bidder or any director/member leases premises and municipal accounts are not in their name, a valid lease agreement with a SAPS Affidavit must be submitted. ii. Bidders that are residing in Traditional lands must attach a recent letter from the Tribal Authority falling within the bid period together with the SAPS Affidavit clearly stating that the bidder does not pay rates and taxes. iii. If the company have directors that are spouses (with the same surname, address in the CK and CSD and the rates and taxes only specify one spouse the rates and taxes will be sufficient for both if submitted. If they are leasing refer to (i). (4) In case of Joint Venture – the Joint Venture Agreement and all supporting documents related to the JV.

F2.16	**Certificates** The successful Bidder is required to submit a letter of intent from an approved insurer undertaking to provide the Performance Guarantee to the format included in Part C1.3 of this Tender Document. This shall be submitted with at the time of concluding the Service Level Agreement.
F3.1	**Opening of tender** Tenders will be opened in public at the ERWAT Head Office, Hartebeestfontein Office Park, R25 (Bapsfontein / Bronkhorstspruit), Kempton Park.
F3.2	**Two-envelope System** A two-envelope procedure will **NOT** be followed.
F3.3	**Non-disclosure** After the opening of the Tender offers, no information relating to the clarification, determination of responsiveness, evaluation and comparison of Tender offers and recommendations concerning the award of the Tender shall be disclosed to any other Bidder or persons not concerned with such process until the award of the Tender has been announced by ERWAT.
F3.4	**Arithmetical errors, omissions and discrepancies** ERWAT is to check BID offers for 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 Bidder's addition of prices, the total of the prices shall govern and the Bidder 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 Bidder does not correct or accept the correction of the arithmetical error in the manner described above.
F3.5	**1. Evaluation of tender offers** The Bidder's notice is drawn to the fact that the evaluation, adjudication and awarding of this Tender will be in terms of the Supply Chain Management Policy of ERWAT and the Preferential Procurement Regulations of 2022. If the submitted Tender does not comply with the Tender conditions, the Tender may be rejected. If specifications are not met, the Tender may also be rejected. With regard to the above, certain actions or errors are unacceptable, and warrant **REJECTION OF THE TENDER,** for example: ▪ Proof of SARS Tax status (pin issued by the South African Revenue Services); ▪ Non submission of company registration certificates. ▪ Pages that were to be completed being removed from the Tender document and have therefore not been

submitted.

- Failure to fully complete form of offer.
- Scratching out without initialling next to the amended rates or information.
- Writing over / painting out rates / the use of Tippex/correction fluid or any erasable ink.
- Failure to attend compulsory briefing meetings
- The Tender has not been properly signed by a party having the authority to do so, according to the **Form C– "Authority for Signatory".**
- No authority for signatory submitted.
- Particulars required in respect of the proposal have not been provided: non- compliance of Tender requirements and/or specifications.
- The Bidder's attempts to influence or has in fact influenced the evaluation and/or awarding of the contract.
- The Proposal has been submitted after the relevant closing date and time.
- If any municipal rates and taxes or municipal service charges owed by that Bidder or any of its directors to the company, or to any other company or municipal entity, are in arrears for more than three months (90 days).
- If any Bidder who during the last five years has failed to perform satisfactorily on a previous contract with the company or any other organ of state after written notice was given to that Bidder that performance was unsatisfactory.

2. Good standing with SA Revenue Services

- Determine whether the bidders tax matters are in order as provided for by SARS.
- The Bidder must complete the MBD 2 form in the returnable schedule and or attach their valid SARS Pin to verify their Tax matters to the designated page of the Tender document.

If the Tender does not meet the requirements contained in the ERWAT Supply Chain Policy, and the mentioned framework, it will be rejected and may not subsequently be made acceptable by correction or withdrawal of the non-conforming deviation or reservation.

3. Penalties

ERWAT will, if upon investigation it is found that a preference in terms of the Preferential Procurement Policy Framework Act, 2000 and these regulations has been obtained on a fraudulent basis, or any specified goals are not attained in the performance of the contract, one or more of the following penalties will be imposed:

- Cancel the contract and recover all losses or damages incurred or sustained from the Bidder.
- Impose a financial penalty of twice the theoretical financial preference associated with the claim, which was made in the Tender.
- Restrict the firm, its shareholders and directors on obtaining any business from ERWAT for a period of 5 years and blacklisted on the National Treasury database of restricted suppliers.

4. Evaluation Criteria

ERWAT will establish a Bid Evaluation Committee (BEC) whose responsibility is to make recommendations to the Bid Adjudication Committee (BAC). The Bid Evaluation Committee will short list and evaluate the bid document in accordance with the criteria below and make recommendations to the BAC.

1) Pre compliance evaluation to be done and pre-qualified bidders goes through for the functionality evaluation. Where some pre-compliance information is not provided the ERWAT supply chain will contact the responsible bidder to submit within 5 working days and failure to do so will result in disqualification.

	2) Score Bid evaluation points for price and specific goals points 3) Calculate total Bid evaluation points, to two decimal places 4) Rank Bid offers from the highest number of Bid evaluation points to the lowest 5) Recommend Bidders with the highest number of Bid evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.
	FUNCTIONALITY CRITERIA: - Note: The minimum required score for functionality is stipulated in the functionality table listed elsewhere in the document. Bidders scoring less than the stipulated threshold on functionality shall not proceed to the next stage of the evaluation. Functionality criteria maximum points in respect of each criterion shall be as set out at the bottom of this table. All Tender submission will be evaluated by at least three evaluators against the Table below. Bidders shall ensure that their tender submissions are sufficiently detailed and that all required information is included in their submissions. Information not provided will result in zero points awarded for the respective item. **Tender evaluation points** Tender evaluation points will be allocated as per the Supply Chain Management policy and the Preferential Procurement Policy Framework Act, 2000: Preferential Procurement Regulations, 2022 including the following: The points allocation for this Tender is: a) Price: 90 b) Specific Goals: 10 Regulations of disputes, objections, complaints and queries will be handled in accordance with the Supply Chain Management Policy of ERWAT.
F3.6	**Contract Documents** The Service Level Agreement (if applicable), Bid document and related attachments shall constitute the complete contract agreement. It should be noted that all ERWAT contracts are subject to the Municipal Financial Management Act (MFMA Act 56 of 2003), therefore in the event that there is any contradiction between the MFMA (Act 56 of 2003) and the GCC or any other applicable contractual agreement, the MFMA (Act 56 of 2003) and its applicable regulations shall take precedence. **This is a CIDB Contract, and the CIDB Board has initiated a B.U.I.L.D Programme which focuses on social development goals, namely, Targeted Enterprise Development and Skills Development. This contract is subject to the CIDB B.U.I.L.D Programme, and the relevant standards shall form part of the contract. This standard requirement as well as any other regulatory or legislative requirements will be included during the Service Level Agreement (SLA) stage.**

F3.7	**Provide copies of the contracts** The number of paper copies of the signed contract to be provided by the Employer is **one**. Refer to clause F2.11.
Additional conditions	The additional conditions of the proposal are: 1) ERWAT may also request that the Bidder provide written evidence that his financial, labour and resources are adequate for carrying out the project. 2) ERWAT reserves the right to appoint a firm of chartered accountants and auditors and / or execute any other financial investigations on the financial resources of any Bidder. The Bidders shall provide all reasonable assistance in such investigations 3) ERWAT reserves the right to award this contract to one or more bidders. The lowest bidder or any bid will not necessarily be accepted. The intention of ERWAT is to appoint a Minimum of One (1) bidder, and a Maximum of Three (3) Bidders for this Framework Contract. The decision to appoint multiple bidders will be based on the evaluation of bids received, the nature and scope of the work, and the Company's discretion to ensure optimal project delivery. 4) The number of bidders that will be appointed and the allocation of activities or items per bidder will be at ERWAT's discretion 5) The lowest bidding price will not necessarily be accepted and ERWAT reserves the right to determine market related rate to be offered to the successful bidders. 6) The rates of the highest-scoring bidder, subject to market evaluation (market related rate), will be offered to the **subsequent qualifying bidders based on tender specification.** 7) If the tender is found to be unauthorised, fruitless and wasteful or irregular as informed through a formal investigation, internal and or external audit outcome, the Auditor General, Council, ERWAT Board of Directors or National Treasury, ERWAT reserves the right to cancel the tender with immediate effect, and the bidder will have no claim to his effect whatsoever. The final terms of payment (where applicable) will be negotiated with the bidder at the time for final close out of the contract.

1.1 TECHNICAL / FUNCTIONALITY EVALUATION

Potential service providers will have to achieve the **minimum points out of 100** as stipulated under the functionality table for their technical proposals before their financial proposals and Specific Goals are evaluated. This is required so that there is a level of comfort that the potential service provider can deliver the project with the required professionalism and quality.

1.1.1 SCORING PROCESS

The Technical / Functional Evaluation Task Team will be established to determine the following:

- The bidders experience similar projects.
- The qualifications and experience of the key staff proposed.
- Bidders quality management system
- Bidder's Financial risk status

No alteration of technical / functionality proposals will be permitted after the deadline for receipt of bids. Questions may be asked for clarification needed to evaluate their proposals, but bidders would not be permitted to change the substance or price of their bids after bid opening. Requests for clarification and the bidder's responses would be made in writing. No interviews will be conducted in this regard.

NB: ERWAT reserves the right to verify all supporting documents including uncertified copies which will only be acceptable, where online verification can be done.

1.1.2 MANDATORY REQUIREMENTS

Scope related Information and Documentation required:		
Please ensure that the following supporting documents are attached to your Bid Document. Failure to submit the below mentioned documents will result in disqualification of your bid. **All supporting documents must be valid at the time of tender closing.**		
Item	**Description**	**Supporting Evidence**
1.	The Contract CIDB 7EP required	Proof of Registration
2.	Bidding company registration as an Electrical Contractor with Department of Employment and Labour (Department of Labour)	Proof of Registration
3.	Bidding company must provide a letter of support and the certifications listed below in a and b. ***N.B: The letter of support must be from a Motor Control Centre (MCC) *manufacturer, addressed to the Bidder. Where OEMs are tendering, only the SABS certificates are required. i.e. only SABS certificates in the name of the OEM will be required.*** a. SABS Certification (Test Report) • Apparatus: Busbars. • With, the test has been carried out in accordance with SANS 60439-1 /IEC 60439-1 or SANS 61439-1&2/IEC 61439-1&2 • Low-voltage switchgear and control gear assemblies b. SABS Certification (Test Report) • Apparatus: Low Voltage Assembly	Proof of certification and letter of support (where applicable)

	• With, the test has been carried out in accordance with SANS 60439-1 /IEC 60439-1 or SANS 61439-1&2/IEC 61439-1&2 • Low-voltage switchgear and control gear assemblies	

NB: Bidders who comply with the mandatory requirements will be considered for technical evaluation.

1.1.3 SCORING CRITERIA FOR CIDB CONTRACTS:

The score for the Technical / Functionality Evaluation will be calculated in accordance with the table below:

CRITERION	CRITERION DETAILS	POINTS
Company Experience Only signed completion certificates or reference letters on the letterheads of the previous client with a clear description of works, contract value, contactable details.	**Please provide reference letters or completion certificates of completed projects, on the relevant clients' company letterhead, for the Manufacturing or Installation or Fabrication or Assembling of the following equipment:** • **Motor Control Centres (MCC) or** • **Electrical Control Panels.** **Bidders to provide Appointment letters/Purchase Orders and completion certificates and/or reference letter for completed projects on client's letterhead:** **The reference letters or completion certificates must at minimum include:** a. Clear project description and project (contract) number b. Minimum project (contract) value of R1.5 million (Vat. Incl) per reference letter or per project. c. The required scope should be clearly indicated. d. Signed with contactable details. e. Partial completions will not be accepted; each letter should represent the entire works completed not section or partially completed. **f.** Submission must be dated and not older than ten (10) years, from the date of completion. • 5 and more Letters/Certificates = 50 • 4 Letters/Certificates = 40 • 3 Letters/Certificates = 30 • 2 Letters/Certificates = 20 • 1 Letter/Certificate = 10 • No reference Letter submitted = 0	**50**
Expertise of key staff Bidders to provide Curriculum Vitae(s) to prove the relevant experience as well as complete pro-forma CVs in full.	**Expertise of key staff**: Bidders shall provide Qualifications (certified copies), Professional registrations (where applicable), Complete Pro-Forma CVs (Form N) and submit Curriculum Vitae (s) demonstrating years of experience in building/fabrication or installation or refurbishment or maintenance of MCC Panels. **The following should be noted:** a. Bidders will not be allowed to repeat the same personnel as representative for any of the other required key staff. b. Experience of key staff will be evaluated based on the years/ months post qualification attainment up to date of tender closure. c. No points shall be allocated for submission of irrelevant experience that does not speak to the Scope of Works for this Contract. d. Copies of Qualifications (certified copies) and Professional registration must be attached as portfolio of evidence. e. All foreign qualifications must be SAQA (South African Qualifications Authority) accredited f. All professional registrations must be in good standing during the period of tender closing. **Project Manager - Professional Electrical Engineer (BTech/Beng) Min. NQF Level 7 (Registered ECSA):** • 0 – 23 Months Experience = 0 • 24 - 35 Months Experience =5 • 36 - 47 Months Experience =10 • 48 - 59 Months Experience =15 • 60 - or more Months experience = 20 **Instrumentation Technician – National Diploma in Electrical Engineering NQF level 6**	**40**

	• 0 – 23 Months Experience = 0 • 24 - 35 Months Experience =5 • 36 - or more Months experience =10 **<u>Electrician with Trade Test (QCTO Accredited):</u>** • 0 – 23 Months Experience = 0 • 24 - 35 Months Experience =5 • 36 - or more Months experience =10	
Financial Resources **Kindly submit a bank rating from the companies bank institution (not older than six months)**	**Based on reference checks with Bidder's Bank.** • Bank Rating A - Undoubted for the amount of enquiry = 10 • Bank Rating B - Good for the amount of your enquiry = 8 • Bank Rating C - Good for the amount quoted, if strictly in the way of business = 6 • Bank Rating D - Fair trade risk for the amount of your enquiry =4 • Bank Rating E - Figures considered too high = 2 • Failure to produce a bank document explicitly stating the Bank rating will result in 0 points being awarded in this category = 0	**10**
TOTAL	**Bidder must score a minimum of 80 points to be considered for further evaluation**	**100**

Notes:

- **All professional registrations must be valid at the time of tender closing, and copies of qualifications (certified copies) and professional registrations shall be attached as portfolio of evidence. Bidders must also complete and sign FORM N.**
- **ERWAT reserves the right to contact the Manufacturers for verification of the Letter of Support.**
- **Only Bidders who score 80 points and more will be considered for the next stage of evaluation.**

ERWAT
EXCELLENCE IN WATER CARE

PROJEC NO: ERW2510/02

RE- TENDER FOR THE APPOINTMENT OF PANEL SERVICE PROVIDER/S IN A FRAMEWORK CONTRACT FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES FOR VARIOUS SITES AT EKURHULENI WATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36) MONTHS

T 2.1 LIST OF RETURNABLE DOCUMENTS

1. Failure to fully complete and sign the relevant returnable documents shall render such a tender offer unresponsive.

2. Bidders shall note that their signatures appended to each returnable form represents a declaration that they vouch for the accuracy and correctness of the information provided, including the information provided by candidates proposed for the specified key positions.

3. Notwithstanding any check or audit conducted by or on behalf of the Employer, the information provided in the returnable documents is accepted in good faith and as justification for entering into a contract with a Bidder. If subsequently any information is found to be incorrect such discovery shall be taken as wilful misrepresentation by that Bidder to induce the contract. In such event the Employer has the discretionary right to terminate the contract.

THE BIDDER MUST COMPLETE AND SIGN THE FOLLOWING RETURNABLE SCHEDULES:

RETURNABLE SCHEDULES REQUIRED FOR TENDER EVALUATION PURPOSES

MBD 1	INVITATION TO BID
MBD 2	TAX CLEARANCE REQUIREMENTS
MBD 3.2	PRICING STRUCTURE: NON-FIRM PRICES
MBD 4	DECLARATION OF INTEREST
MBD 5	DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (ALL APPLICABLE TAXES INCLUDED)
MBD 6.1	PREFERENCE POINTS CLAIM FORM
MBD 7.1	CONTRACT FORM: PURCHASE OF GOODS/SERVICES
	PART 1: TO BE COMPLETED BY THE BIDDER
	PART 2: TO BE COMPLETED BY ERWAT
MBD 8	DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES
MBD 9	CERTIFICATE OF INDEPENDENT BID DETERMINATION
FORM A	MUNICIPAL SERVICES, RATES AND TAXES OR RENTAL AGREEMENT WITH LANDLORD: An updated record of payment of rates and taxes (not older than three months) and services to the relevant Municipality must be attached for the bidding company and all its directors. The following cases will be reviewed and assessed where applicable: i. Where the bidder or any director/member leases premises and municipal accounts are not in their name, a valid lease agreement with a SAPS Affidavit must be submitted. ii. Bidders that are residing in Traditional lands must attach a recent letter from the Tribal Authority falling within the bid period together with the SAPS Affidavit clearly stating that the bidder does not pay rates and taxes. iii. If the company have directors that are spouses (with the same surname, address in the CK and CSD and the rates and taxes only specify one spouse the rates and taxes will be sufficient for both if submitted. If they are leasing refer to (i). Rates and taxes must not be in arrears for longer than 90 (ninety) days of date of closing of bid.
FORM B	NATIONAL TREASURY CENTRALISED SUPPLIER DATABASE
FORM C	AUTHORITY OF SIGNATORY
FORM D	FINANCIAL REFERENCES /BIDDER'S CREDIT RATING AND BANK DETAILS
FORM E	RECORD OF ADDENDA TO TENDER DOCUMENTS
FORM F	CERTIFICATE OF AUTHORITY FOR SIGNATORY TO AGREEMENT IN TERMS OF OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993)
FORM G	OCCUPATIONAL HEALTH AND SAFETY AGREEMENT
FORM H	CERTIFIED COPY OF ID DOCUMENT/S OF OWNERS/MEMBERS/SHAREHOLDERS
FORM I	CURRENT CERTIFICATE OF GOOD STANDING FROM COMPENSATION COMMISSIONER

FORM J	COPY OF COMPANY REGISTRATION DOCUMENTS
FORM K	PROOF OF RELEVANT REGULATORY CERTIFICATION OR OTHER REQUIREMENTS IN TERMS OF THE REQUIRED REGULATORY AUTHORITY AS SET OUT IN THE SCOPE OF WORKS
FORM L	LETTER OF INTENT TO SUBMIT THIRD PARTY LIABILITY INSURANCE AND ALL RISK CONTRACTORS' INSURANCE TO COVER THIS CONTRAC (REQUIRED AT SLA STAGE)
FORM M	BACKGROUND AND WORK EXPERIENCE
FORM N	EXPERTISE OF THE KEY PERSONNEL
FORM O	POPIA CONSENT FORM

Returnable Documents that will be incorporated into the contract

C1.1	OFFER PORTION OF FORM OF OFFER AND ACCEPTANCE
C1.2	CONTRACT DATA (PART 2)

T2.1.1 IMPORTANT: Required Returnable Documentation:

Please ensure that the following supporting documents are attached to your Bid Document. Evaluation of these submissions will be done based on the MFMA requirements.

Item	Description of Document/Proof Sought	**To be completed by the Bidder** on submission of documents: Please fill in **"Yes" or "No"**	**For Office Use Only** Verified by SCM Official: Please fill in **"Yes" or "No"**
1	A valid Tax Clearance Certificate/SARS issued pin		
2	Copy of ID documents of owners/ members/ shareholders (see Bidders Information Section).		
3	Copy of Municipal Statement not older than 3 months OR Letter from landlord stating that you are renting from his/her property OR Copy of Lease agreement and Contact details (Statement and arrears should not be older than 3 months) *Refer to FORM A*		
4	Current Certificate of Good Standing from Compensation Commissioner		

T2.1.2 Other Returnable Documents required for the evaluation.

Item	Description of Document/Proof Sought	**To be completed by the Bidder** on submission of documents: Please fill in **"Yes" or "No"**	**For Office Use Only** Verified by SCM Official: Please fill in **"Yes" or "No"**
1.	Copy of Company/ Registration Documents (see Bidders Information Section).		
2.	Copy of B-BBEE Verification certificate from an accredited Verification Agency or BBBEE Affidavit signed by Commissioner of Oaths, as provisioned in the B-BBEE Act and its Regulations.		
3.	Proof of CSD registration (Supplier number and unique reference ID).		
4.	Proof of CIDB		

ERWAT
EXCELLENCE IN WATER CARE

PROJECT NO: ERW2510/02

RE- TENDER FOR THE APPOINTMENT OF PANEL SERVICE PROVIDER/S IN A FRAMEWORK CONTRACT FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES FOR VARIOUS SITES AT EKURHULENI WATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36) MONTHS

T2.2 RETURNABLE SCHEDULES

MBD 1

PART A
INVITATION TO BID

You are hereby invited to bid for requirements of ERWAT	
Bid Number	**ERW2510/02**
Compulsory Briefing session date and time. *Kindly refer to Clause F.2.7 of the bidding document relating to the Clarification Meeting (provisions for attending briefing sessions)*	**THURSDAY, 11TH JUNE 2026 AT 10H30 - REGISTRATION REQUIRED.** **Briefing Session Virtual Link:** https://events.teams.microsoft.com/event/1b466f90-7006-4d70-b447-33a3aa02f28c@1d9cdadc-ce7f-46d7-b303-e5c99a875dc2 Kindly access the link through the ERWAT website to register and attend.
Closing date	**THURSDAY, 25TH JUNE 2026**
Closing time and venue	12h00 noon at ERWAT Head Office, R25 Bapsfontein Road, Norkem Park
Submission of bid documents	All tender submissions must be provided in hardcopy format on the original bid document as supplied by ERWAT and deposited in the tender box. In addition to the hardcopy, bidders are requested to submit an identical electronic copy (in PDF format) of the complete tender document via email to TenderE-Submission@erwat.co.za. The email must clearly state the tender reference number and the bidder's name in the subject line. The electronic submission must be made by the tender closing date and time. While submission to TenderE-Submission@erwat.co.za is not mandatory, bidders are encouraged to do so to assist with the efficient evaluation of bids. Bidders will not be disqualified for not submitting an electronic copy. Both the hardcopy and electronic versions must be identical in every detail, including all completed forms, signed declarations, schedules, and supporting documentation. In the event of any discrepancies between the hardcopy and the electronic copy, the hardcopy version will be considered the official and legally binding submission. Bidders are therefore responsible for ensuring that the contents of both formats are complete, consistent, and fully aligned.
The successful bidder will be required to fill in and sign a written contract form (MBD7).	

Bidder Information	
Name of Bidding Company	
Company physical address	
Company postal address	
Contact details	Company Representative (Name):
	Telephone:
	Cell phone:
	E-mail address:
National Treasury Central Supplier Database number: (Compulsory)	MAAA
CIDB Grading CRS number	

Vat registration number	
Tax Compliance status	TCS Pin:
Are you the accredited representative in South Africa for the goods/ services/ works offered? If yes, attach proof from the agency your company is accredited to represent	
Total number of items offered	N/A
Total price (including VAT)	R **All Tendered Rates**
SCM related enquiries:	**Chantel Kearns/ Phumzile Mdlalose/ Inkosinathi Nhlapo** E-mail Address: chantel.kearns@erwat.co.za or Phumzile.mdlalose@erwat.co.za or Inkosinathi.nhlapo@erwat.co.za Tel: 011 929 7000
Technical enquiries	Ms. Hlengiwe Nhlapho E-mail: hlengiwe.zwane@erwat.co.za Tel: 011 929 7000

PART B
TERMS AND CONDITIONS FOR BIDDING

1. BID SUBMISSION:

1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.

1.2. **ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED– (NOT TO BE RE-TYPED) OR ONLINE**

1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022, THE GENERAL CONDITIONS OF CONTRACT FOR CONSTRUCTION WORKS (GCC 2015, THIRD EDITION) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.

2. TAX COMPLIANCE REQUIREMENTS

2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.

2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.

2.3 APPLICATION FOR THE TAX COMPLIANCE STATUS (TCS) CERTIFICATE OR PIN MAY ALSO BE MADE VIA E-FILING. IN ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA.

2.4 FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PART B:3.

2.5 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.

2.6 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.

2.7 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.

3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS

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

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

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

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

3.5. IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION? ☐ YES ☐ NO

IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.

NB: Failure to provide any of the above particulars may result in your bid being disqualified.

Name & Surname of Representative: _____

Signature Of Bidder: _____

Capacity Under Which This Bid Is Signed: _____

Date: _____

MBD 2

TAX CLEARANCE CERTFICATE REQUIREMENT

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

NEED A TAX CLEARANCE? GO ONLINE

- Electronically request your Tax Compliance Status which will include a unique PIN which you can provide to any third party (if requested) to enable them to verify your tax compliance status online via e-Filing.
- Request a TCC via e-filing which will give you the option to print the TCC.
- Or request a TCC at a SARS branch where a SARS agent will be able to print or e-mail the TCC to you.
- To register for e-filing go to: www.sarsefiling.co.za

A tax compliant status is a holistic view of your tax compliance level across all your registered tax types.

Is your tax compliance status green?

- Ensure all tax returns are submitted
- No outstanding debt owed to SARS
- SARS has been notified of any change of residential or business address
- Your business is registered for all required tax types e.g. PAYE, VAT, income tax.

Check your tax compliance status by logging onto your e-filing profile and viewing your "my compliance Profile" and rectify any non-compliance.

THIRD PARTY AUTHORISATION TO VIEW BIDDER TCS:

To assist with the evaluation process of your bid we require your consent to check your SARS tax compliance via e-filing. Kindly complete the table below authorising ERWAT to check TCC for tender purposes only.

TCS Details	
Tax payer name	
Trading Name	
Purpose of request	TENDER
Request Reference number	
PIN	
PIN EXPIRY DATE	

Note: Bidders may attach their Tax compliance status printout to the bidding document.

I, _____ in my capacity as _____ duly appointed as authorised signatory holder, hereby grant **ERWAT** permission to check the TCC status of _____ and it is duly understood that the search is for tender purposes only.

NAME AND SURNAME _____

DESIGNATION _____

DATE _____

SIGNATURE _____

FOR ERWAT OFFICE USE ONLY:
VERIFIED ☐YES / ☐NO

MBD 3.2

PRICING SCHEDULE – NON-FIRM PRICES (PURCHASES)

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

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

Name of Bidder: _____	Bid number: **ERW2510/02**
Closing Time : **12:00 NOON**	Closing Date: **Thursday, 25th June 2026**

OFFER TO BE VALID FOR 120 DAYS FROM THE CLOSING DATE OF BID.

ITEM NO.	QUANTITY	DESCRIPTION	BID PRICE IN RSA CURRENCY **(ALL APPLICABLE TAXES INCUDED)
-		Required by:	**EKURHULENI WATER CARE WORKS**
-		At:	**INFRSTRUCTURE PROJECTS AND PLANNING**
-		Brand and model	…..…….
-		Country of origin	……..…….
-		Does the offer comply with the specification(s)?	*YES/NO
-		If not to specification, indicate deviation(s)	…….
-		Period required for delivery	…….
-		Delivery:	*Firm/Not firm

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

*Delete if not applicable

MBD 3.2

PRICE ADJUSTMENTS

A NON-FIRM PRICES SUBJECT TO ESCALATION

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

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

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

Where:

Pa	=	The new escalated price to be calculated.
(1-V) Pt	=	85% of the original bid price. **Note that Pt must always be the original bid price and not an escalated price.**
D1, D2..	=	Each factor of the bid price e.g. Labour, transport, clothing, footwear, etc. The total of the various factors D1,D2…etc. must add up to 100%.
R1t, R2t……	=	Index figure obtained from new index (depends on the number of factors used).
R1o, R2o	=	Index figure at time of bidding.
VPt	=	15% of the original bid price. This portion of the bid price remains firm i.e. it is not subject to any price escalations.

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

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

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

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

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

MBD 3.2

PRICES SUBJECT TO RATE OF EXCHANGE VARIATIONS

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

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

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

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

MBD 4

DECLARATION OF INTEREST

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

2. Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in 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. A Person who is an advisor or consultant contracted with the municipality.

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

   4.1 Full Name of bidder or his or her representative:

   _____

   4.2 Identity Number: | | | | | | | | | | | | | |

   4.3 Position occupied in the Company (director, trustee, shareholder[2]):

   _____

   4.4 Company Registration Number: _____

   4.5 Tax Reference Number: _____

   4.6 VAT Registration Number: _____

   4.7 The names of all directors / trustees / shareholders members, their individual identity numbers and state employee numbers must be indicated in paragraph 5 below.

   4.8 Are you presently in the service of the state?

   YES / NO

   If so, furnish particulars.

   _____

   _____

   4.9 Have you been in the service of the state for the past twelve months?

   YES / NO

   If so, furnish particulars.

   _____

   _____

4.10 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

If so, furnish particulars.

_____

_____

4.11 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

If so, furnish particulars.

_____

_____

4.12 Are any of the company's directors, trustees, managers, principle shareholders or stakeholders in service of the state?

YES / NO

If so, furnish particulars.

_____

_____

4.13 Are any spouse, child or parent of the company's directors, trustees, managers, principle shareholders or stakeholders in service of the state?

YES / NO

If so, furnish particulars.

_____

_____

4.14 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? ***(This refers to all companies involved in, regardless of the commodity – please refer to the last page of the bidding companies CSD report that will show the MAAA numbers of the other active companies the directors are involved in).***

YES / NO

If so, furnish particulars.

_____

_____

5. Full details of directors / trustees / members / shareholders **in the service of the state.** ***** ***(refer to the section below the table for the definition of "in the service of the state".***

FULL NAME	IDENTITY NUMBER	STATE EMPLOYEE NUMBER

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

(a) *A member of –*
- *any municipal council/entity;*
- *any provincial legislature; or*
- *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.

CERTIFICATION

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

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

_____ _____
SIGNATURE **DATE**

_____ _____
POSITION **NAME OF BIDDER**

MBD 5

DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (ALL APPLICABLE TAXES INCLUDED)

For all procurement expected to exceed R10 million (all applicable taxes included), bidders must complete the following questionnaire.

Bidders are required to submit **audited** financial statements (AFS) for the **past three years** for bids where the threshold exceeds R10 million ***if they are required to prepare annual financial statements for auditing by law***.

If your company is not required by law to submit audited financial statements; unaudited/reviewed financial statements will be accepted.

1 **Are you by law required to prepare annual financial statements for auditing?**

***YES/NO**

1.1 If yes, submit **audited** annual financial statements for the **past three years** or since the date of establishment if established during the past three years. *All audited AFS are signed off by a registered Chartered Accountant who is also a Registered Auditor (e.g. registered with IRBA).*

_____

_____

2 Do you have any outstanding undisputed commitments for municipal services towards any municipality for more than three months or any other service provider in respect of which payment is overdue for more than 30 days?

***YES/NO**

2.1 If no, this serves to certify that the bidder has no undisputed commitments for municipal services towards any municipality for more than three months or other service provider in respect of which payment is overdue for more than 30 days.

2.2 If yes, provide particulars.

_____

_____

_____

3 Has any contract been awarded to you by an organ of state during the past five years, including particulars of any material non-compliance or dispute concerning the execution of such contract?

***YES/ NO**

3.1 If yes, furnish particulars

_____

_____

4 Will any portion of goods or services be sourced from outside the Republic, and, if so, what portion and whether any portion of payment from the municipality / municipal entity is expected to be transferred out of the Republic?

***YES / NO**

**** Delete if not applicable***

4.1 If yes, furnish particulars

_____

_____

CERTIFICATION

I, THE UNDERSIGNED (NAME) _____

CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT.

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

_____ _____

SIGNATURE **DATE**

_____ _____

POSITION **NAME OF BIDDER**

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

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1. GENERAL CONDITIONS

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

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

The applicable preference point system for this tender is the ***90/10*** preference point system. The lowest/ highest acceptable tender will be used to determine the accurate system once tenders are received.

1.2 Points for this tender shall be awarded for:

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

The maximum points for this tender are allocated as follows:

	POINTS
PRICE	90
SPECIFIC GOALS	10
TOTAL POINTS FOR PRICE AND SPECIFIC GOALS	**100**

1.3 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.

1.4 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. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

2.1 **POINTS AWARDED FOR PRICE**

2.1.1 THE 90/10 PREFERENCE POINT SYSTEMS

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

90/10

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

Where:

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

3. POINTS AWARDED FOR SPECIFIC GOALS

3.1. 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:

Table 1: Specific goals for the tender and points claimed are indicated per the table below.
***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)	Number of points Claimed by the bidder (90/10 system)
EME or QSE 51% owned by women	2	
EME or QSE 51% owned by youth	2	
EME or QSE 51% owned by people with disabilities	2	
EME or QSE 51% owned by military veterans	2	
EME or QSE within the boundaries of Ekurhuleni Municipality	2	

The above information will be verified in accordance with the bidders B-BBEE certificate, and or a certificate from the companies and intellectual property commission (CIPC), the department of Military Veterans and or other supporting documents. All supporting evidence must be submitted in order to claim the preferential procurement points claimed. ERWAT reserves the right to verify the information submitted.

In the case of multi-parties (Joint ventures, consortiums, partnerships, etc.), allocation of points will be calculated by adding the individual parties in the JV, etc. ownership % together; divide the total by the number of parties in the respective joint ventures, consortiums, partnerships, etc. The average % will thus be the indicating factor for the number of points to be scored limited to the maximum available points.

EXAMPLE

Joint venture:

Party 1 = 51% EME/QSE owned by women
Party 2 = 100% EME/QSE owned by women
= **151%** / 2 parties in the JV = 75% and will score = 2 points

The above principle will apply to points 1, 2, 3 & 4 indicated in Table 1 above.

For point 5: The collective JV agreement's address, or the Lead JV partners' domicile Address will be utilized for scoring of points.

DECLARATION WITH REGARD TO COMPANY/FIRM

3.2. Name of company/firm…….

3.3. Company registration number: ……...

3.4. 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]

3.5. 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: ……

……

……

……

MBD 7.1

CONTRACT FORM - PURCHASE OF GOODS/WORKS

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

PART 1 (TO BE FILLED IN BY THE BIDDER)

1. I hereby undertake to supply all or any of the goods and/or works described in the attached bidding documents to (name of institution) …….…… in accordance with the requirements and specifications stipulated in bid number **ERW2510/02** at the price/s quoted. My offer/s remain binding upon me and open for acceptance by the purchaser during the validity period indicated and calculated from the closing time of bid.

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

   (i) Bidding documents, *viz*
   - Invitation to bid;
   - Tax clearance certificate;
   - Pricing schedule(s);
   - Technical Specification(s);
   - Specific Goals (refer to MBD 6.1)
   - Declaration of interest;
   - Declaration of bidder's past SCM practices;
   - Certificate of Independent Bid Determination;
   - Special Conditions of Contract;

   (ii) General Conditions of Contract; and
   (iii) Other (specify)

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

4. It is noted that this is rates based tender. The contract is limited to Purchase orders issued within the available budget allocated for such on an as and when required basis.

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

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

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

NAME (PRINT)_____

CAPACITY _____

SIGNATURE _____

NAME OF FIRM _____

DATE _____

WITNESSES

1 _____

2 _____

DATE:

MBD 7.1

CONTRACT FORM - PURCHASE OF GOODS/WORKS

PART 2 (TO BE FILLED IN BY THE PURCHASER)

1. I _____ in my capacity as

   _____ accept your bid under reference number:

   ERW2510/02 dated _____ for the supply of goods/works indicated hereunder and/or further specified in the annexure(s).

2. An official order indicating delivery instructions is forthcoming.

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

ITEM NO.	PRICE (ALL APPLICABLE TAXES INCLUDED)	BRAND	DELIVERY PERIOD	B-BBEE STATUS LEVEL OF CONTRIBUTION	MINIMUM THRESHOLD FOR LOCAL PRODUCTION AND CONTENT (if applicable)
	*Kindly refer to the pricing schedule/BOQ**	*Refer to pricing schedule and or scope*	*To be determined as signing of SLA*	*Refer to MBD 6.1*	*Refer to MBD 6.1*

**** It is noted that this is rate-based tender. The contract is limited to Purchase orders issued within the available budget allocated for such on an as and when required basis.***

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

NAME (PRINT)_____

CAPACITY _____

SIGNATURE _____

NAME OF FIRM _____

DATE _____

WITNESSES

1. _____

2. _____

DATE: _____

MBD 8

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

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

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

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

a. abused the company'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. wilfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
d. Been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).

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

Item	Question	Yes	No
4.1	Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector? (Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the *audi alteram partem* rule was applied). The Database of Restricted Suppliers now resides on the National Treasury's website (www.treasury.gov.za) and can be accessed by clicking on its link at the bottom of the home page.	Yes ☐	No ☐
4.1.1	If so, furnish particulars:		
4.2	Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)? The Register for Tender Defaulters can be accessed on the National Treasury's website (www.treasury.gov.za) by clicking on its link at the bottom of the home page.	Yes ☐	No ☐

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

CERTIFICATION

I, THE UNDERSIGNED (FULL NAME_____

CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM 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 ON BEHALF OF BIDDER

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

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

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

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

    a. take all reasonable steps to prevent such abuse;

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

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

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

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

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

DESCRIPTION: RE- TENDER FOR THE APPOINTMENT OF PANEL SERVICE PROVIDER/S IN A FRAMEWORK CONTRACT FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES FOR VARIOUS SITES AT EKURHULENI WATER CARE WORKS ON 'AS AND WHEN REQUIRED BASIS' FOR A PERIOD OF 36 MONTHS

PROJECT NO: ERW2510/02

in response to the invitation for the bid made by:

EKURHULENI WATER CARE COMPANY (ERWAT)
(Name of Municipality/Entity)

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

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

1. I have read and I understand the contents of this Certificate;

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

3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;

4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;

5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:

   (a) has been requested to submit a bid in response to this bid invitation;

   (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and

   (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder

6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium[3] will not be construed as collusive bidding.

7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:

   (a) prices;
   (b) geographical area where product or service will be rendered (market allocation)
   (c) methods, factors or formulas used to calculate prices;

(d) the intention or decision to submit or not to submit, a bid;
(e) the submission of a bid which does not meet the specifications and conditions of the bid; or
(f) bidding with the intention not to win the bid.

8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.

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

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

SIGNATURE	**DATE**
POSITION	**NAME OF BID**

FORM A

MUNICIPAL SERVICES, RATES AND TAXES CLEARANCE CERTIFICATE FOR SUPPLY CHAIN MANAGEMENT PURPOSE

The purpose of this form is to obtain prove that municipal services, rates and taxes of the service provider are **not more than three months in arrears** with the relevant municipality / landlord in the municipal area where the service provider conduct his / her business. Kindly attach the latest municipal rates and taxes account not older than 3 months from date of advertising of bid.

Where bidders are not owners of a property and cannot submit a copy of the municipal account, the following must be completed together with a valid Rental/lease agreement:

(TO BE COMPLETED BY THE LANDLORD)			
Name of the Landlord:			
Property Physical Address:			
Please tick below		**Yes**	**No**
Rental:	in arrears for more than 3 months		
Municipal services:	in arrears for more than 3 months		
Landlord Signature:			
Date: _____ **Landlord's business stamp here (where applicable)**			

FORM B

CONFIRMATION OF REGISTRATION ON NATIONAL TREASURY CENTRALISED SUPPLIER DATABASE

CONFIRMATION OF CSD VENDOR INFORAMTION		
1	VENDOR NAME	
2	CSD APPROVED NUMBER	**M**_____
3	COMPANY REG NUMBER	
4	COMPANY TAX NUMBER	
5	COMPANY VAT NUMBER	
6	CONTACT PERSON	
7	OFFICE TEL. NUMBER	
8	OFFICE FAX NUMBER	
9	E-MAIL ADDRESS	
10	CELL NUMBER	

I, _____ in my capacity as _____ being the authorized signatory, hereby declare that the above information is true and correct.

_____ _____

AUTHORISED SIGNATORY DESIGNATION **NAME AND SURNAME**

_____

RESOLUTION DATE: AUTHORISED SIGNATORY APPOINTMENT

_____ _____

SIGNATURE **DATE**

FORM C

AUTHORITY OF SIGNATORY TO SIGN BIDS

The bid shall be signed by a person duly authorized thereto and the following is applicable:

Company: A resolution by its board of directors authorizing a director or other official of the company to sign the documents on behalf of the company or in the case of Sole Directorship a letter signed by the Director.

Close Corporation: A resolution by its members authorizing a member or other official of the corporation to sign the documents on each member/s behalf.

Partnership: All the partners shall sign the documents unless one partner or a group of partners has been authorized to sign on behalf of each partner, in which case proof of such authorization shall be included in the bid.

Joint Venture: Should two or more firms jointly submit a bid, the bid shall be accompanied by the document of establishment of the joint venture, duly registered and authenticated by a notary public or other official deputed to witness sworn statements, which defines the conditions under which the joint venture will function, the period of duration, the persons authorized to represent the Joint Venture and who are obligated thereby, the participation of the several firms forming the joint venture, and well as any other information necessary to permit a full appraisal of its functioning.

One-person business/sole propriety: This shall be clearly stated, and all documents shall be signed accordingly.

DECLARATION WITH REGARD TO COMPANY/FIRM

Name of company/firm…….

Company registration number/ ID number: ……...

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]

Details of person responsible for Bid Document process:

Name: _____

Contact number: _____

Office address: _____

Signatories for close corporations and companies shall confirm their authority by **attaching** to this form a **duly signed and dated original or certified copy on the Company Letterhead** of the relevant resolution as prescribed by the Company's Act and/or other applicable legislations.

Please note that ERWAT reserves the right to contact the bidder for clarification on submissions related to the authorisations related to the bidding entity.

PRO-FORMA FOR COMPANIES AND CLOSE CORPORATIONS:

"By resolution of the board of directors passed on *(date)* _____

Prof./Dr/Mr/Ms _____

has been duly authorized to sign all documents in connection with the Bid Document for Contract Number _____ and any Contract which may arise there from on behalf

of _____

(BLOCK CAPITALS)

SIGNED ON BEHALF OF THE COMPANY _____

IN HIS CAPACITY AS _____

DATE _____

FULL NAMES OF SIGNATORY _____

AS WITNESSES: **1.** _____

2. _____

Please note that ERWAT reserves the right to contact the bidder for clarification on submissions related to the authorisations related to the bidding entity.

PRO-FORMA FOR JOINT VENTURES:
Certificate of Authority for Joint Ventures

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

Bidders are required to submit a valid fully signed Joint Venture agreement including the roles and responsibilities they will be performing throughout the contract period and indicate the lead partner.

NAME OF FIRM	ADDRESS	DULY AUTHORISED SIGNATORY
		Signature: …… Name: …… Designation: ……
		Signature: …… Name: …… Designation: ……
		Signature: …… Name: …… Designation: ……
		Signature: …… Name: …… Designation: ……

N.B.: THE DULY SIGNED AND DATED ORIGINAL OR CERTIFIED COPY OF AUTHORITY OF SIGNATORY ON COMPANY LETTERHEAD SHOULD BE INCLUDED IN THE RETURNABLE DOCUMENTS PACK.

Please note that ERWAT reserves the right to contact the bidder for clarification on submissions related to the authorisations related to the bidding entity.

FORM D

FINANCIAL REFERENCES/ BIDDERS'S CREDIT RATING AND DETAILS OF BIDDERS BANKING INFORMATION

Notes to Bidder:

1. ***The Bidder shall attach to this form a letter from the bank confirming the bank account and details. A BANK RATING LETTER WILL BE ACCEPTABLE. Failure to provide the required letter with the Bid Document submission shall render the Bidder's offer unresponsive.***
2. The Bidder's banking details as they appear below shall be completed.
3. In the event that the Bidder is a joint venture enterprise, details of all the members of the joint venture shall be similarly provided and attached to this form.

BANK NAME:	
ACCOUNT NAME: *(e.g. ABC Civil Construction cc)*	
ACCOUNT TYPE: *(e.g. Savings, Cheque etc)*	
ACCOUNT NO:	
ADDRESS OF BANK:	
CONTACT PERSON:	
TEL. NO. OF BANK / CONTACT:	
How long has this account been in existence:	0-6 months ☐ 7-12 months ☐ 13-24 months ☐ More than 24 months ☐ (Tick which is appropriate)

_____

Signature on behalf of Bidder

N.B.: ORIGINAL LETTER FROM BANK OR BANK STATEMENT (NOT OLDER THAN THREE MONTHS) SHOULD BE INCLUDED IN THE RETURNABLE DOCUMENTS PACK.

FORM E

RECORD OF ADDENDA TO BID DOCUMENTS

N.B: Please note that where appliable, bidders are required to complete the table below acknowledging receipt of Addendum/s. All pages in relation to the Addendum must be striked through with a note **"REPLACED** by **ADDENDUM/S"**. The revised pages in relation to the Addendum/s must be **attached** as an Annexure to the bid document. The initial documents must remain in the bid document and **MUST NOT BE REMOVED** as this will lead to a disqualification.

Kindly note that where addendums are issued, such are communicated to bidders who attended the briefing session at the e-mail address that is supplied by the bidder/s recorded on the attendance register.

The e-mail address supplied by bidders on the attendance register for physical briefings will be utilised as the official communication address. Where virtual briefings are held, the e-mail address submitted by the suppliers on the registration attendance register will be utilised as the official communication address.

It remains the responsibility of the bidder to ensure that the correct valid e-mail address is captured. ERWAT accepts no responsibility for returned messages reflecting to be undeliverable or due to invalid/non-existing details.

The addendum/s are uploaded onto the ERWAT website under the respective tender number and bidders should visit the website before the closing date and time to ensure that all communication has been accessed and taken into account with the submission of this bid.

I/We confirm that the following Addendum/s listed below have been received and added to this document as an Addendum. Please note you may not modify or remove any part of the original Bid document except for the strikethrough requirement.	
Date	**Addendum/s No**

SIGNATURE ON BEHALF OF BIDDER _____ **DATE** _____

FORM F

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

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

By resolution of the board of directors passed at a meeting held on _____ 20 _____,

Mr//Ms_____ whose signature

appears below, has been duly authorised to sign the AGREEMENT IN TERMS OF THE

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT 85 OF 1993) on behalf of

---

SIGNED ON BEHALF OF THE COMPANY : _____

IN HIS/HER CAPACITY AS : _____

DATE : _____

SIGNATURE OF SIGNATORY : _____

WITNESS: _____ **WITNESS:** _____

NAME (in capitals): _____ **NAME:** _____

FORM G

OCCUPATIONAL HEALTH AND SAFETY AGREEMENT /PLAN (WHERE APPLICABLE)

FORM H

CERTIFIED COPY OF ID DOCUMENT/S OF OWNERS/MEMBERS/SHAREHOLDERS

FORM I

CURRENT CERTIFICATE OF GOOD STANDING FROM COMPENSATION COMMISSIONER

FORM J

COPY OF COMPANY REGISTRATION DOCUMENTS

INLCUDE THE FOLLOWING DOCUMENTS IN THE SUPPORING DOCUMENTS FILE TO BE SUBMITTED WITH THE ORIGINAL BIDDING DOCUMENT

1. **FOR CLOSED CORPORATIONS**

   CK1 or CK2 as applicable (Founding Statement).

2. **FOR COMPANIES**

   - A copy of the Certificate of Incorporation
   - Certified Copies of the ID's of the Directors and
   - The shareholders' register.

3. **JOINT VENTURES, TRUSTS OR CONSORTIUM**

   - Copy of the Joint Venture Agreement between all the parties,
   - As well as the documents in (1) or (2) and (5) of each Joint Venture member.

   A trust, consortium or joint venture will be able to claim for points for their specific goals provided that the entity submits a valid signed agreement.

   Bidders must submit concrete proof of the existence of joint ventures and/or consortium arrangements. National Treasury will accept signed agreements as acceptable proof of the existence of a joint venture and/or consortium arrangement.

   The joint venture and/or consortium agreements must clearly set out the roles and responsibilities of the Lead Partner and the joint venture and/or consortium party. The agreement must also clearly identify the Lead Partner, with the power of attorney to bind the other party/parties in respect of matters pertaining to the joint venture and/or consortium arrangement.

4. **FOR PARTNERSHIP**

   - Certified Copies of the ID's of the partners

5. **ONE-PERSON BUSINESS / SOLE TRADER/SOLE PROPRIETOR**

   - Certified Copy of ID

FORM K

PROOF OF RELEVANT REGULATORY CERTIFICATION OR OTHER REQUIREMENTS IN TERMS OF THE REQUIRED REGULATORY AUTHORITY AS SET OUT IN THE SCOPE OF WORKS

BIDDERS MUST HAVE A MINIMUM CIDB GRADING OF **7 EP** TO QUALIFY FOR EVLUATION.

FORM L

LETTER OF INTENT TO SUBMIT THIRD PARTY LIABILITY INSURANCE AND ALL RISK CONTRACTORS' INSURANCE TO COVER THIS CONTRACT

Bidders are required to ensure the safekeeping and insurance of items in place until such time that the works/goods or services are handed over to ERWAT and ERWAT has signed off thereon. The successful bidder shall submit this letter at the time of concluding the Service Level Agreement.

FORM M

BACKGROUND AND WORK EXPERIENCE

Briefly summarize the Company's experience regarding installation or refurbishment of MCC's or Electrical Control Panels. in Water Treatment Works or Wastewater Treatment Works or such similar industrial application. Select up to five projects completed in South Africa that are similar in scope and magnitude to this project. For each project completed, attach a Certificate of Completion and/ or Reference Letter.

	EMPLOYER	EMPLOYER'S REPRESENTATIVE (NAME, TEL, E-MAIL)	PROJECT TITLE AND DESCRIPTION OF WORK Inc. CAPACITY OF THE WORKS	VALUE OF WORK (R-Rand)	COMPLETION DATE
PROJECT 1					
PROJECT 2					
PROJECT 3					
PROJECT 4					
PROJECT 5					

SIGNED ON BEHALF OF THE COMPANY _____

FULL NAMES OF SIGNATORY _____

IN HIS CAPACITY AS _____

DATE _____

FORM N

EXPERTISE OF THE KEY PERSONNEL

1. **Personnel / Individual adequacy:** Portfolio of evidence (CV) should be provided. Indicating similar projects / jobs completed or undertaken by the personnel stated below.

2. **Qualifications:** Portfolio of evidence should be provided for the key staff with supporting documents for Qualifications (SAQA, QCTO etc. accredited) and detailed organogram.

3. All foreign qualifications must be SAQA (South African Qualifications Authority) accredited.

4. All professional registrations must be in good standing during the period of tender evaluation.

5. **Pro-Forma CV**: A pro-forma curriculum vitae shall be filled in full on the below given forms.

KEY STAFF EXPERIENCE					
Position on this Contract	**Full Name**	**ID No.**	**Qualifications**	**No. of Relevant Years of Experience**	**Professional Registration number**
Project Manager: Professional Electrical Engineer (BTech/Beng) Min. NQF Level 7 (Registered ECSA):					
Instrumentation Technician: National Diploma in Electrical Engineering NQF level 6					
Electrician with Trade Test (QCTO)					

This declaration must be completed as part of the mandatory requirements of this document.

DECLARATION:

I, _____, duly authorized to sign this declaration, hereby confirm/declare that the information submitted as portfolio of evidence in relation to key staff experience, Curriculum vitae (CV) and qualifications is a true reflection of the submission.

SIGNATURE: _____ **DATE:** _____

PRO-FORMA CURRICULUM VITAE OF KEY PERSONNEL/STAFF

This form should be completed for each key person listed in the functionality criterion

Responsibility or role on the project (as per list in form k)	**PROJECT MANAGER: PROFESSIONAL ELECTRICAL ENGINEER MIN. NQF LEVEL 7 (REGISTERED ECSA):**
Name:	**Date of Birth:**
Profession:	**Nationality:**
Qualifications(Attach Proof of Qualification) :	
Professional Membership (If any):	
Name of Employer (Firm) :	
Current Position :	**Years with firm:**
Employment record: (List of chronological order starting with earliest work experience)	
Experience record pertinent to required service:	
Certification: **I, the undersigned, certify that to the best of my knowledge and belief, this data correctly describes me, my qualification and my experience and that I will be available to execute the work for which I have been nominated.** _____ **(Signature of Person named in Schedule) Date**	

This form should be completed for each key person listed in the functionality criterion

Responsibility or role on the project (as per list in form k)	**INSTRUMENTATION TECHNICIAN WITH NATIONAL DIPLOMA IN ELECTRICAL ENGINEERING NQF LEVE 6**
Name:	**Date of Birth:**
Profession:	**Nationality:**
Qualifications (Attach Proof of Qualification):	
Professional Membership (If any):	
Name of Employer (Firm):	
Current Position:	**Years with firm:**
Employment record: (List of chronological order starting with earliest work experience)	
Experience records pertinent to required service:	
Certification: **I, the undersigned, certify that to the best of my knowledge and belief, this data correctly describes me, my qualification and my experience and that I will be available to execute the work for which I have been nominated.** _____ **(Signature of Person named in Schedule) Date**	

This form should be completed for each key person listed in the functionality criterion

Responsibility or role on the project (as per list in form k)	**ELECTRICIAN WITH TRADE TEST - QCTO ACCREDITED**
Name:	**Date of Birth:**
Profession:	**Nationality:**
Qualifications (Attach Proof of Qualification):	
Professional Membership (If any):	
Name of Employer (Firm):	
Current Position:	**Years with firm:**
Employment record: (List of chronological order starting with earliest work experience)	
Experience records pertinent to required service:	
Certification: **I, the undersigned, certify that to the best of my knowledge and belief, this data correctly describes me, my qualification and my experience and that I will be available to execute the work for which I have been nominated.** _____ **(Signature of Person named in Schedule) Date**	

FORM O

POPIA CONSENT FORM

PROTECTION OF PERSONAL INFORMATION ACT, 4 OF 2013

The Service Provider and ERWAT shall comply with the requirements of Protection of Personal Information Act of 2013 ("POPIA") and both parties are to ensure that appropriate measures are implemented to protect all personal information processed by both parties for the duration of the contract and beyond the contract expiry. Any breach where personal information is compromised, this must be reported to the affected party within 24 hours after the discovery of the breach.

The Service Provider shall maintain the confidentiality of all Personal Information, ensure that its personnel, joint venture parties, subcontractors are also bound to process and safeguard any personal information that they are entrusted with.

By signing this referral form:

a) I/we hereby grant my/our voluntary consent that my/our personal information may be processed, collected, used and disclosed in compliance with the Protection of Personal Information Act, 4 of 2013.

b) I/we furthermore agree that my/our personal information may be used for the lawful and reasonable purposes in as far as the ERWAT (responsible party) must use my/our information in the performance of its public legal duty.

c) I/we understand that my/our personal information may be disclosed to a third party in as far as the ERWAT must fulfil its public legal duty.

d) I/we furthermore understand that there are instances in terms of abovementioned Act where my express consent is not necessary to permit the processing of personal information, which may be related to litigation or when the information is publicly available. Further details are available on the ERWAT website.

Company name: _____

Company address: _____

_____

Name & Surname of Company Representative: _____

Signature Of Bidder: _____

Designation: _____

Date: _____

Name& Surname of ERWAT Information Officer:

_____

Signature: _____

Designation: _____

Date: _____

Name& Surname of ERWAT Deputy Information Officer:

_____

Signature: _____

Designation: _____

Date: _____

ERWAT
EXCELLENCE IN WATER CARE

PROJECT NO: ERW2510/02

RE- TENDER FOR THE APPOINTMENT OF PANEL SERVICE PROVIDER/S IN A FRAMEWORK CONTRACT FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES FOR VARIOUS SITES AT EKURHULENI WATER CARE WORKS ON 'AS AND WHEN REQUIRED BASIS FOR A PERIOD OF 36 MONTHS

C1 AGREEMENTS AND CONTRACT DATA

Part C1: Agreements and Contract Data

C1.1 Form of Offer and Acceptance

C1.2 Contract Data

C1.3 Occupational Health and Safety

C1.4 Corporate Governance Breach Clause

C1.1 FORM OF OFFER AND ACCEPTANCE

OFFER

The Employer, identified in the Acceptance signature block, has solicited offers to enter in contract in respect of the following works: ***PROJECT NO: .: ERW2510/02 RE- TENDER FOR THE APPOINTMENT OF PANEL SERVICE PROVIDER/S IN A FRAMEWORK CONTRACT FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES FOR VARIOUS SITES AT EKURHULENI WATER CARE WORKS ON 'AS AND WHEN REQUIRED BASIS' FOR A PERIOD OF 36 MONTHS***

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

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

THE OFFERED RATES FOR THE GOODS, AS SET OUT IN THE PRICING SCHEDULE/BILL OF QUANTITIES (THE PRICES INCLUSIVE OF VALUE ADDED TAX), IS HEREBY CONFIRMED FOR THE PERIOD OF THE CONTRACT PERIOD INCLUDING THE PROVISIONS FOR THE ANNUAL ESCALATIONS (WHERE APPLICABLE)

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

Signature(s) ....

Name(s) ....

Capacity ....

For the Bidder .....
(Name and address of organisation)

Name & Signature
Of Witness ....
Name Date

ACCEPTANCE

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

The terms of the contract are contained in:

- Agreements and Contract Data (which includes this Agreement)
- Pricing Data
- Scope of Work
- Site information

And drawings and documents or parts thereof, which may be incorporated by reference into above stated terms.

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 Bidder and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Agreement. No amendments to or deviations from said documents are valid unless contained in this Schedule, which must be duly signed by the authorised representative(s) of both parties.

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

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

Signature(s) ....

Name(s) ....

Capacity ....

For the Employer .....
(Name and address of organisation)

Name & Signature
Of Witness ....
Name Date

SCHEDULE OF DEVIATIONS

Notes:

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

2. A Bidder's covering letter shall not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid becomes the subject of agreements reached during the process of Offer and Acceptance; the outcome of such agreement shall be recorded here.

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

4. Any change or addition to the tender documents arising from the above 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 .....

.....

By the duly authorised representatives signing this Schedule of Deviations, the Employer and the Bidder agree to and accept the foregoing Schedule of Deviations as the only deviations from and amendments to the documents listed in the 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 Bidder and the Employer during this process of Offer and Acceptance.

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

FOR THE BIDDER:

Signature(s) ....

Name(s) ....

Capacity ....

For the Bidder .....
(Name and address of organisation)

Name & Signature
Of Witness ....
Name Date

FOR THE EMPLOYER

Signature(s) ....

Name(s) ....

Capacity ....

For the Employer .....
(Name and address of organisation)

Name & Signature
Of Witness ....
Name Date

C1.2 CONTRACT DATA

GENERAL CONDITIONS OF CONTRACT

This Contract will be based on the "General Conditions of Contract for Construction Works *General Conditions of Contract 2015 (GCC 2015, Third Edition*)

Documents can be ordered from SAICE who can be contacted through their website www.saice.org.za. Physical address: SAICE House, Block 9, Thornhill Office Park, Bekker Street, Midrand, Johannesburg. Telephone number: (011) 805 5947.

It is agreed that the only variations from the General Conditions of Contract 2015 are those set out hereafter under "Special Conditions of Contract".

SPECIAL CONDITIONS OF CONTRACT

These Special Conditions of Contract (SCC) form an integral part of the Contract. The Special Conditions of Contract shall amplify, modify or supersede, as the case may be, the General Conditions of Contract 2015 to the extent specified below, and shall take precedence and shall govern.

The clauses of the Special Conditions hereafter are numbered "SCC" followed in each case by the number of the applicable clause or subclause in the General Conditions of Contract 2015, and the applicable heading, or (where a new special condition that has no relation to the existing clauses is introduced) by a number that follows after the last clause number in the General Conditions, and an appropriate heading.

"The Special Conditions of Contract are supplementary to that of the General Conditions of Contract. In the event of any contradiction between the GCC or any other applicable contractual agreement, the Municipal Financial Management Act and its applicable regulations will take precedence."

The contract will commence on the last signature date of the Service Level Agreement.

If the tender is found to be unauthorised, fruitless and wasteful or irregular as informed through a formal investigation, internal and or external audit outcome, the Auditor General, Council, ERWAT Board of Directors or National Treasury, ERWAT reserves the right to cancel the tender with immediate effect and the bidder will have no claim to his affect. The final terms of payment (where applicable) will be negotiated with the bidder at the time for final close out of the contract.

AMENDMENTS TO THE GENERAL CONDITIONS OF CONTRACT

DATA PROVIDED BY THE EMPLOYER

Clause	Data
SCC1.3.2	**Add to clause: Applicable legislation** **It should be noted that all ERWAT contracts are subject to the Municipal Financial Management Act (MFMA Act 56 of 2003), therefore in the event that there is any contradiction between the MFMA (*Act 56 of 2003*) and the GCC 2015 or any other applicable contractual agreement, the MFMA (*Act 56 of 2003*) and its applicable regulations shall take precedence.**
	Definitions The definitions contained in Clause 1.1 are hereby amended and/or supplemented as follows:
SCC1.1.1.7	**Add to Clause:** **The Framework Agreement is subject to the best practices published in terms of the B.U.I.L.D Programme. (Government gazette 28 April 2023)** **It will be the condition of contract that:** i. The contractor shall achieve in the performance of the contract the ***Contract Skills Development Goal (CSDG)*** established in the CIDB Standard for Developing Skills through Infrastructure Contracts as published in **Gazette Notice No.48491 of 28 April 2023.** ii. The contractor shall achieve in the performance of the *contract* ***the Contract Participation Goals (CPG)*** relating to the engagement of targeted enterprises as established in the CIDB Standard for Indirect Targeting for Enterprise Development through Construction works Contracts, published in Gazette **Notice No.36190 of 25 February 2013**
SCC 1.1.1.13	The Defects Liability Period is **12** months from the date of the Certificate of Completion. The Defects Liability Period is **12** months from the date of the Certificate of Completion per installation.
SCC 1.1.1.14	The Works shall be completed within **36** months from the commencement date on an "as and when required basis". The Purchase Orders of the Works shall be placed within **36** months from the commencement date on an "as and when required basis".
SCC 1.1.1.15 **1.2.1.2**	The Name of the Employer is **ERWAT** The address of the Employer is: The Managing Director Hartebeestfontein Office Park R25 (Bapsfontein/Bronkhorstspruit) Kempton Park Telephone: 011 929 7000
SCC 3.2.3	**Add the following:** Approval of the Employer is required for:

Clause	Data
	i). Cessions – issuing of cessions by the Contractor is expressly prohibited except if and when prior written approval of the Employer under the signature of the Accounting Officer for the issue of the cession has been requested and obtained ii). Use of contingencies – for all items for which rates have not been approved in terms the contract. iii). Extension of Time – extension of time can only be granted by the Employer.
SCC 4.1.2	**Add the following:** **"**When completed, the parts of the works designed by the Contractor, to the extent specified in the Contract, shall be fit for the purposes for which the Works are intended"
SCC 4.4.1	**Add the following:** The Contractor is to submit to the Employer in writing a request for appointment of a particular sub-contractor. Accompanying this request is to be the full detail of the sub-contractor, including: ▪ Previous experience ▪ Work which will be sub-contracted to him/her ▪ Approximate value of the work to be sub-contracted Before the Employer in terms of Clause 6.10 hereof issues any certificate that includes any payment in respect of work done or goods supplied by any sub-contractor appointed in accordance with the provisions of Clause 4.4 of the General Conditions of Contract for Construction works (2015, Third Edition), he shall be entitled to call upon the Contractor to furnish reasonable proof that all payments (less retention moneys) included in previous certificates in respect of the work or goods of such sub-contractors have been made or discharged by the Contractor, in default of which, unless the Contractor: ▪ Informs the Employer in writing that he has reasonable cause for withholding or refusing such payment; and ▪ Submits to the Employer reasonable proof that he has so informed such sub-contractor in writing
SCC 4.9.1	**Add the following:** "All equipment on site shall be in a good working order and is to be in such a condition that it can achieve production rates which are typical of the industry standards. Should any equipment, in the opinion of the Employer, be substandard or breaks down frequently to such an extent that it affects the progress on the project, the Employer may instruct the Contractor to replace such equipment.''
SCC 5.3.1	**Add the following to 5.3.1:** The documentation required before Commencement of the Works are: • Health & Safety Plan (Refer to Cl. 4.3 of GCC 3rd Ed 2015) • Initial Programme (Refer to Cl. 5.6 of GCC 3rd Ed 2015) • Security (Deed of Guarantee) (refer to Cl. 6.2 of GCC 3rd Ed 2015) • Insurances (Refer to Cl. 8.6 of GCC 3rd Ed 2015)
SCC 5.3.3	**Add the following:** The time to the documentation required before Commencement of the Works execution is **28** days

Clause	Data
SCC 5.4.1	**Add the following:** The Commencement Date shall be the date the contractor is given possession of site.
SCC 5.8.1	**Add the following:** The special non-working days are the official builder's holiday plus all statutory public holidays.
SCC 5.12	**Add the following:** A delay caused by inclement weather conditions will be regarded as a delay only if, in the opinion of the Employer, all progress on an item or items of work on the critical path of the working programme of the contractor has been brought to a halt. Delays on working days only (based on a five-day working week) will be taken into account for the extension of time, but the Contractor shall make provision in his programme of work for an expected delay of "n" working days caused by normal rainy weather, for which he will not receive any extension of time, where "n" equals 5 days. Extension of time during working days will be granted to the degree to which actual delays, as defined above, exceed the number of "n" workings days.
SCC 5.12.2.1	**Add the following:** Extensions of time in respect of clause 5.12 in respect of abnormal rainfall shall be calculated using the following formula for each calendar month or part thereof: $V = (Nw - Nn) + \frac{(Rw - Rn)}{X}$ Where: V = Extension of time in calendar days in respect of the calendar month under consideration. Nw = Actual number of days during the calendar month on which a rainfall of 10 mm or more has been recorded. Nn = Average number of days in the relevant calendar month, as derived from existing rainfall records, on which a rainfall of 20mm or more has been recorded for the calendar month. Rw = Actual average rainfall in mm recorded for the calendar month under consideration. Rn = Average rainfall in mm for the calendar month as derived from existing rainfall records as stated in the Site Information. For purposes of the Contract Nn, Rn, X and Y shall have those values assigned to them in the South African Weather Service's rainfall records of the nearest station to the site. If V is negative and its absolute value exceeds Nn, then V shall be taken as equal to minus Nn. The total extension of time shall be the algebraic sum of all monthly totals for the period under consideration, but if the total is negative the time for completion shall not be reduced due to subnormal rainfall. Extensions of time for part of a month shall be calculated using pro rata values of Nn and Rn.

Clause	Data
	This formula does not take account flood damage which could cause further or concurrent delays and will be treated separately as far as extension of time is concerned. The factor (Nw – Nn) shall be considered to represent a fair allowance for variations from the average in the number of days during which rainfall exceeds 10 mm. The factor (Rw-Rn) shall be considered to represent a fair allowance for variations from the average in the number of days during which the rainfall did not exceed 10 mm, but wet conditions prevented or disrupted work. For the purpose of applying the formula, accurate rain gauging shall be taken at a suitable point on the Site and the Contractor shall at his own expense, take all necessary precautions to ensure that rain gauges cannot be interfered with by unauthorized persons.
SCC 5.13.1	**Add the following:** The penalty for failing to complete the works shall be calculated as follows; Purchase Order value multiply 0.04% per day.
SCC 6.2.1	**Add the following:** The Security to be provided by the Contractor shall be the Performance guarantee liability of **10 %** of the Purchase Order. This guarantee shall be delivered within 21 days of the Commencement Date.
SCC 6.2.2	**Add the following:** The Form of Guarantee is to contain the wording of the pro-forma document included in the General Conditions of Contract (Pro-forma included in section C1.3 to this document). Form of Guarantee: construction guarantee: the successful bidder will be required to submit a construction guarantee that is equal to 10% of the total contract value all-inclusive and must be submitted to the SCM office within 10 working days from date of appointment. Only original guarantees issued by an accredited and registered financial institution will be accepted and will only be released on final completion of works."
SCC 6.9.1	All materials shall comply with the requirements of the South African Bureau of Standards and shall bear the official standardization mark. Where SABS standard does not exist for a certain material, or a material does not bear the official standardization mark, the Client's Representatives approval of such material must be gained before use thereof.
SCC 6.10.1.5	**Add the following:** The percentage advance on materials not yet built into the Permanent Works but received on site is **80** %.
SCC 6.10.3	**Add the following:** The **5%** retention of the purchase order value will be released upon completion of the works and the remaining **5%** retention amount shall be released at the end of **12 months** defects liability period.
SCC 6.10.4	**Add the following:** The limit of retention money is **10** % of the purchase order value.

Clause	Data
SCC 7.2.1	**Add the following:** All materials shall comply with the requirements of the South African Bureau of Standards, and shall bear the official standardization mark. Where SABS/SANS/ISO standard does not exist for a certain material, or a material does not bear the official standardization mark, the Employers approval of such material must be gained before use thereof.
SCC 8.6.1.1.2	**Add the following:** The value of the materials supplied by the Employer to be included in the insurance sum is nil.
SCC 8.6.1.1.3	**Add the following:** The required insured amount to cover professional fees for repairing damaged infrastructure and equipment and loss of time on the construction schedule is to be 15% of the Purchase Order value.
SCC 8.6.1.3	**Add the following:** The limit of indemnity for liability insurance is 10 % of Purchase Order value. This will be finalized at Service Level Agreement (SLA)stage
SCC 1.1.1.8	**Add the following: Add New Clause, Clause 1.1.1.8A**: Terms for Issuing of Work Orders/Instruction to Perform Work (IPW): The Service Provider acknowledges that it is the objective of the Employer to create a Framework agreement for this tender for the Contract Period of Performance to ensure that as-and-when the Employer requires services scoped as per this contract; the Service Provider is in position, without delay, to render such services. Thus, to this end: a) The Employer does not guarantee a minimum or maximum expected quantum of work/services or fee value of work/services other than that which may be formally issued and accepted by the Services Provider during the term of the framework agreement. Emphasis is made on CIDB Practice None 15 (Synopsis and Introduction)), that the CIDB grading should not be understood as a commitment to a minimum quantum of work equal to the lower limit of the CIDB grade applicable to this contract. The issuing of orders will be subject to budget availability and other factors that may influence prioritisation of services to the client during the term of the agreement. b) The Framework agreement may not bind the Employer to only make use of the agreement to meet the needs of the organisation. c) The Employer shall reserve the right to allocate purchase orders to more than one service provider depending on the nature of the assignment. d) When the framework agreement is concluded, it has a zero value or specified volumes of works/services, and the Employer shall have no obligation to pay the Service Provider appointed to the framework agreement.
SCC 1.1.1.8	**Add New Clause 1.1.1.8B,** Selection of Service Providers for Work Orders/Instruction to Perform Work (IPW): Work Orders from a framework agreement with a number of Service Providers covering the same scope of work may be made with and without requiring competition amongst the framework Service Providers.

Clause	Data
	Therefore, as is the case of this framework agreement, non-competition and competition shall follow the following terms: **1.Non-Competition:** for the scope of work where the prices, fees and expenses have been adequately provided, the selection of service providers shall be conducted without competition and based on the following terms: a) For all works that are considered to be associated with low to moderate inherent risks in the opinion of the employer, selection of service providers from the panel shall be mainly conducted on a rotational basis. And service providers shall be placed in the panel from the bidder who scores the highest preferential points to the bidder who scores the lowest preferential points. b) For works that significantly warrant risk concerns, the employer shall reserve the right to invite the Service Provider(s) who in their opinion is most suitable to provide the work in the best interest of the Employer. Factors such as largely identical previous experience in the works/service being instructed, specialist expertise, financial models, etc shall influence such decisions. c) The value of the batch, task or package order is less than the threshold for the quotation procedure. **2.Competition**: in the Framework contract shall be opened, and contractors invited to submit quotations to provide work/services in terms of the Works Order in the cases where: a) The terms of the framework contract require modification, or b) The terms in the framework agreement are insufficiently precise or complete to cover the requirements of the Works Order (e.g., Time based Fees, uncertainty of scope,ect); or c) The competitive process will provide a better quality of service and good value for money. d) There is no advantage or justifiable reason for issuing a Works Oder to a particular Framework Service Provider.

PART 2: DATA PROVIDED BY THE CONTRACTOR

Sub-Clause	Data
1.1.17	The Contractor is: Name: ..... The Address of the Contractor is: Address (physical): .... Address (postal): .... Telephone: ..... Facsimile: ..... E-mail: .....
1.1.22	Contractors Representative Name: ..... Telephone: ..... Facsimile: ..... E-mail: .....

C1.3 FORM OF GUARANTEE

PROJECT NO: ERW2510/02

RE-TENDER FOR THE APPOINTMENT OF PANEL SERVICE PROVIDER/S IN A FRAMEWORK CONTRACT FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES FOR VARIOUS SITES AT EKURHULENI WATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36.) MONT

WHEREAS .....

at .....

(Hereinafter referred to as "the Employer")

Entered into, on the..... day of ..... 20....., at .....

a Contract with .....

at .....

(Hereinafter referred to as "the Contractor")

for the construction of .....

.....

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

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

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

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

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

3. This guarantee shall remain in full force and effect until the issue of the Certificate of Completion in terms of the Contract, unless we are advised in writing by the Employer before the issue of the said Certificate of his intention to institute claims, and the particulars thereof,

in which event this guarantee shall remain in full force and effect until all such claims have been paid or liquidated.

4. Our total liability hereunder shall not exceed the sum of (R.....).

5. We hereby choose *domicilium citandi et executandi* for all purposes arising hereof at

IN WITNESS WHEREOF this guarantee has been executed by us at ..... on this .....

day of ... 20.....

As witnesses:

1. ..... Signature

2. ..... Signature

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

Address

.....

.....

.....

C1.4 OCCUPATIONAL HEALTH AND SAFETY

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

THIS AGREEMENT IS made at .....

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

Between EKURHULENI WATER CARE COMPANY (ERWAT) (hereinafter called "the Employer") of the one

part, herein represented by .....

In his capacity as .....

and delegate of the Employer in terms of the Employer's standard powers of delegation pursuant to the provisions of Act No 7 of 1998,

and .....

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

.....

in his capacity as .....

and being duly authorized by virtue of a resolution appended hereto as Annexure A;

WHEREAS the Employer requires certain works be constructed, viz RE-TENDER FOR THE APPOINTMENT OF PANEL SERVICE PROVIDER/S IN A FRAMEWORK CONTRACT FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES FOR VARIOUS SITES AT EKURHULENI WATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASI36 NO.) COMMISSIONS and has accepted a Bid by the Mandatory for the construction, completion and maintenance of such Works and whereas the Employer and the Mandatory have agreed to certain arrangements and procedures to be followed in order to ensure compliance by the Mandatory with the provisions of the Occupational Health and Safety Act, 1993 (Act 85 of 1993).

NOW THEREFORE THIS AGREEMENT WITNESSED AS FOLLOWS:

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

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

(a) the date of the Final Approval Certificate issued in terms of Clause 5.16 of the General Conditions of Contract 2010 (hereinafter referred to as "the GCC"), as contained in the Contract Documents pertaining to this Contract, or

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

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

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

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

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

(iii) Section 37: Acts or omissions by employees or mandatories

(iv) Sub-section 37(2) relating to the purpose and meaning of this Agreement

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

4 In addition to the requirements of Clause 8.4 of the GCC (as amended by Special Condition of Contract) and all relevant requirements of the above-mentioned Volume, the Mandatory agrees to execute all the Works forming part of this Contract and to operate and utilize all machinery, Plant and equipment in accordance with the Act.

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

6. The Mandatory warrants that all his and his subcontractors' workmen are covered in terms of the Compensation for Occupational Injuries and Diseases Act, 1993 (Act No 130 of 1993), which cover, shall remain in force whilst any such workmen are present on site. A letter of good standing from the Compensation Commissioner to this effect must be produced to the Employer upon signature of the agreement.

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

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

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

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

In witness hereof the parties are to set their signatures hereon in the presence of the subscribing witnesses:

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

Witness ..... Witness .....

(Name) ..... (Name) .....
(Print) (Print)

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

Witness ..... Witness .....

(Name) ..... (Name) .....
(Print) (Print)

ANNEXURE A

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

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

By resolution of the board of directors passed at a meeting held on ..... 20.....,

Mr//Ms ..... whose signature

appears below, has been duly authorised to sign the AGREEMENT IN TERMS OF THE

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT 85 OF 1993) on behalf of .....

.....

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

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

DATE : .....

SIGNATURE OF SIGNATORY : .....

WITNESS : ..... WITNESS : .....

NAME (in capitals): ..... NAME.....:

C1.5 CORPORATE GOVERNANCE BREACH CLAUSE

1. Ekurhuleni Water Care Company ("ERWAT") requires [insert name of company] ("the Company") to comply, mutatis mutandis with the Code contained in the King III Report and Code of Good Corporate Governance (below "the Code") for the term of this Agreement and any extension thereof.

2. The Company irrevocably undertakes and agrees that it will, mutatis mutandis, comply with the Code for the term of this Agreement and any extensions thereof.

3. The Company acknowledges and agrees that:

   3.1 It is essential that the Company complies with the Code, in order to discharge all of its obligations under and in terms of the Agreement in a proper, efficient and professional manner, and

   3.2 ERWAT will be prejudiced and may suffer damages in the event of the Company failing to comply with the Code.

4. The Company shall be required, within seven (7) days of the end of each calendar month during the term of this Agreement (and any extensions thereof), to furnish ERWAT with a written certificate, signed by the directors of the Company [alternatively members of the Close Corporation], certifying that the Company has complied with the provisions of the Code during the preceding months.

5. ERWAT shall have the right, without assigning any reason therefore and at any time, to appoint either the Institute of Directors of South Africa or a firm of chartered accountants or attorneys, to conduct an audit of the business and affairs of the Company in order to ascertain whether the Company is indeed complying with the terms of the Code.

   To this end, the Company irrevocably undertakes and agrees to co-operate fully with the party conducting such investigation for and on behalf of ERWAT and to make available to such party all such documentation and all such information as the investigation party may require to fully discharge its obligations under and in terms hereof and to report fully to ERWAT.

   In the event of it being found that the Company is not complying with the Code, then ERWAT shall be entitled to (a) regard this as a breach of the agreement and (b) recover the costs of the investigation, on an attorney and client basis, from the Company. In the event of it being found that the Company is, in fact, discharging its obligations under and in terms of the Code, then ERWAT shall bear the costs incurred in such investigation. In either of the aforegoing events, the Company shall be entitled to receive a copy of the written report once same has been concluded by the investigating party.

6. In the event of the Code being replaced with another Code (or similar document), then such replacement document shall replace the Code and a reference to the Code shall be deemed to be a reference to such replacement document. The reference to the Code shall be deemed to include any statutory codification of directors' obligations and duties which may be enacted in the Republic of South Africa at any time in the future.

7. In entering into this Agreement, the Company represents and warrants to ERWAT that it is familiar with the Code, that it fully understands and appreciates the rights, obligations and recommendations therein contained and agrees to be bound thereby as herein recorded.

Initial: _____

ERWAT
EXCELLENCE IN WATER CARE

PROJECT NO: ERW2510/02

RE- TENDER FOR THE APPOINTMENT OF PANEL SERVICE PROVIDER/S IN A FRAMEWORK CONTRACT FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES FOR VARIOUS SITES AT EKURHULENI WATER CARE WORKS ON 'AS AND

C2 PRICING DATA

C2.1 Pricing Instructions

C2.2 Bill of Quantities

ERWAT
EXCELLENCE IN WATER CARE

PROJECT NO: ERW2510/02

RE-TENDER FOR THE APPOINTMENT OF PANEL SERVICE PROVIDER/S IN A FRAMEWORK CONTRACT FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES FOR VARIOUS SITES AT EKURHULENI WATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF 36 MONTHS

C2.1 PRICING INSTRUCTIONS

1. This Contract is a Framework Agreement and shall be solely used to provide services on as-instructed basis, the Service Provider shall only tender rates against each item given in the Schedule of Rates so that as-and when the employer requires services scoped as per this contract; the Service Provider is in position, without delay, to render such services.

2. The Service Provider shall tender his rates considering that the employer does not commit itself to offer the Service Provider any minimum or maximum volume and or value of work during the term of the Framework Agreement. Emphasis is made on CIDB Practice None 15 (Synopsis and Introduction), that the CIDB grading should not be understood as a commitment to a minimum quantum of work equal to the lower limit of the CIDB grade applicable to this contract. The issuing of orders will be subject to budget availability and other factors that may influence prioritisation of services to the client during the term of the agreement.

3. The Schedule of Rates shall be read together with the scope of works including all technical specifications, and the service providers shall be expected to provide rates that are specific to the requirements of the scope of works and technical specifications contained in the bid.

4. The Service Provider shall ensure that a rate/amount is entered against each item in the Schedule of Rates. An item against which no rate or amount is entered shall be deemed grounds for a partially completed bid document and will lead to disqualification.

5. The rates/amounts tendered in the Schedule of Rates shall be the full inclusive rates/amounts to the Employer for the work described under the several items. Such rates/amounts shall cover all the costs and expenses that may be required in and for the construction of the work described, and shall cover the costs of all general risks, profits, overhead charges, taxes (including value-added tax), liabilities and obligations set forth or implied in the documents on which the Tender is based. The Service Provider shall ensure that all inserted rates are reasonable as these shall be used during bid evaluation and shall become the basis for payment of all work that will be carried out during the Term of the Framework Agreement.

6. The applicable Conditions of Contract, the Contract Data, the Specifications (including the Project Specifications) and the Drawings (where attached) shall be read in conjunction with the Schedule of Rates.

7. Descriptions in the Schedule of Rates are abbreviated and may differ from those in the Standardized and Project Specifications. No consideration will be given to any claim by the Contractor submitted on such a basis.

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

9. For the purposes of this Schedule of Rates, the following words shall have the meanings hereby assigned to them:

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

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

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

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

12. Mistakes made by the Bidder in completion of the Schedule of Rates shall not be erased or covered with correcting fluid. A line shall be drawn through the incorrect entry, and the correct entry shall be written above the deletion and initialled by the Bidder. Failure to observe this Condition will lead to the Tender being disqualified.
13. **This is a Rates based contract developed under an indicative scope of work and therefore there are no quantities or Totals set out in the pricing schedule, Work Orders will only be generated on "as and when" required basis according to the rates offered and accepted at the negotiation and award stage.**

14. Work Orders generated on "as and when" basis shall contain estimate quantities for the proposed Works. The actual quantities of work/services rendered as finally measured and accepted and certified for payment in accordance with the applicable Conditions of Contract, and not the estimate quantities set out in the Bill of Quantities for the Works Order, will be used to determine payments to the Contractor. The validity of the Contract shall in no way be affected by differences between the quantities in the Bill of Quantities for the generated Works Order and the quantities certified for payment.

15. The successful bidder will be required to submit a quote for the works required prior to being issued an official order and will be limited to the rates as set out herein.

16. Evaluation for price scoring will be done by calculating the line items in the table below to an indicative sum to determine the highest scoring bidder as provided for in the PPPFA Regulation 2022.

17. The effect of changes in prices or law on the amounts due shall be adjusted on the following basis:

    a) No price adjustment over the first 12-month period of the Contract.

    b) On the 12-month anniversary date of the signing of the agreement, the rates shall be adjusted by a twelve-month year on year CPI index (as published in the monthly bulletin PO141.1 of statistics South Africa) ruling on the 12-month anniversary date of the signing of the contract.

    c) Where CPI is not practically implementable, CPA will be considered based on the indices referred to in the MBD 3.2 form. ERWAT reserve the right to request additional information from the bidder to substantiate the bidders' request above CPI.

18. It is the Main Contractor's responsibility to make sure their offered Rates are market-related such that they can in turn pay market-related Rates to subcontractors. Should there be a deficit between the Main Contractor's rates and the Subcontractor's tendered or negotiated Rates, the main Contractor will have to cover for such difference.

19. The Contractor's monthly invoice shall be accompanied by confirmation from the Engineer or his duly authorised representative that items listed for payment have been successfully executed and/or delivered as required. Failure to obtain such confirmation from the Engineer or his duly authorised representative shall result in non-payment of the Contractor's invoice until the default has been corrected, or the deemed incomplete items are excluded from the invoice.

20. The Contractor shall note that payment shall only be made for Works activities successfully (delivering the end result) executed, complying with the quality requirements and provided to the Engineer or his duly authorised representative.

21. The Provisional Sums and Tendered amounts/prices shall be applicable per Works Order or IPW issued and should not be deemed to represent the maximum available budget for the entire Framework Contract.

22. **Provisional Sum and Allowable for Contingencies**

22.1. The Contractor must obtain a minimum of three quotations (where possible) to be approved in writing by the relevant ERWAT Chief Financial Officer before proceeding with the Works.

22.2. The Provisional Sums and Contingencies shall be applicable to the maximum amount in each case where a Works Order is released and shall be considered to be available to the maximum amount for any Works Order generated until the contract expires. It shall be noted that these sums shall not be understood to be the total Provisional Sums and Contingencies applied once off to the entire contract.

23. The Preliminary and General rates and amounts shall be applicable to the maximum in each case each Works Order at a time and shall in no wise be understood as the maximum allowable amounts for the entire duration of the contract.

24. The Preliminary and General rates and amounts shall be applicable to the maximum amount in each case where a Works Order is released and shall be considered to be available to the maximum amount for any Works Order generated until the contract expires. It shall be noted that these amounts and rates shall not be understood to be the total Preliminary and Generals applied once off to the entire contract.

25. As per the CIDB Practice Notes, the procurement strategy followed in this contract shall follow the method of applying a maximum CIDB grade for each Financial Year, the CIDB grading of 7 EP shall be applied as the maximum CIDB grade for each Financial Year for the term of the Framework Agreement, and shall not be considered to be the once off CIDB grading for the entire term of the contract.

26. ERWAT reserves the right to negotiate with bidders, the tendered rates will be subject to negotiation, and the employer will satisfy itself that prices are not too low to warrant risks with service delivery failure or too high to warrant risks with cost overruns.

(The price should be inclusive of all direct and indirect costs (including transport, labour and other applicable fees).

The following will be accepted to be a fully completed pricing schedule:

A price is written/typed in Ink. No pencil or tippex will be accepted. Please note that where bidders opt to type in the prices, the original bid document will be accepted by ERWAT. The document is not to be retyped and no additional pricing schedule in the bidder's format will be accepted. In the event that there are two pricing schedules submitted by the bidder, the original issued document from ERWAT will prevail. Bidders are not allowed to STRIKE THROUGH the BOQ and only the abbreviations as stated below, will be accepted:

No charge = N/C
Included = Incl
R0 will be accepted as no charge.

If pricing is left blank, or the bidder indicated N/A, it will be accepted to be incomplete and non-responsive bid.

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C2.2 BILL OF QUANTITIES/SCHEDULE OF RATES

1. SECTION A: PRELIMINARY AND GENERAL FOR VARIOUS EKURHULENI WATER CARE WORKS

a) OCCUPATIONAL HEALTH AND SAFETY REQUIREMENTS

ITEM	DESCRIPTION	UNIT	RATE (VAT INCLUSIVE) R
1	Development of Health & Safety File	Each	R
2	Safety Signage: Information Boards and Signs including danger tapes as well as barricades, Measurement Verification (During Execution).	Each	R
3	Electrical Compliance Certificate (COC)	Each	R

b) PLANNING, EXECUTION AND QUALITY REQUIREMENTS FOR VARIOUS SITES

ITEM	DESCRIPTION	UNIT	RATE (VAT INCLUSIVE) R
1	The removal of the existing equipment. ERWAT will tend to the disposal thereof.	sum	R
2	Disposal of rubble and transportation to the nearest approved local authority transfer station or land fill site	Per km	R
3	Tracing existing cabling(fibre optic, lighting, small feeder circuits, extend, re-route and reconnect same onto new Distribution Board/MCC Panel)	m	R
4	Labelling of all circuits and draw boxes with permanent screw on type labels as described in Project Detailed Specifications.	sum	R
5	General arrangement drawings, wiring diagrams, terminal strip wiring diagrams, panel layout drawings, auxiliary wiring diagrams, Installation details, Cash Flow Projections, Bi-Weekly Progress Reports for the duration of the Contract and 4x Close-Out Report with O & M Manual, SOPs and testing procedure and termination schedules (soft copies and A3 hardcopies in PDF and AutoCAD format)	sum	R
6	Pre-inspection and Factory Acceptance Testing of all equipment covered by this contract including quality control plan (including accommodation or transportation to and from location where such testing / pre-inspection is to occur should it be outside the radius of 80km from related plant or head office for 3 of ERWAT's representatives.)	each	R
7	Allow for testing, balancing of Phases and commissioning of the whole electrical installation including lighting and power	Sum	R
8	Commissioning and Hand Over Activities (including Commissioning Report)	each	R

9	40 Hours Training for Pumps: Design, Operations, and Maintenance for Plant Personnel recognised within the SAQA National Qualification Framework	each	R
10	Supply and install 35mm locally manufactured padlocks and locking devices as well as master keys.(3 sets) with purpose-made PVC labels to lock and unlock all DB's, SDB's and lockable draw boxes.	Sum	R

c) **EQUIPMENT PLANT HIRE (WET RATE) FOR VARIOUS SITES**

ITEM	DESCRIPTION	UNIT	RATE (VAT INCLUSIVE) R
1	LDV (Light Duty Vehicle)	Day	R
2	Scaffolding	Day	R
3	1000 KVA Standby Diesel Generator System (wet rate)	Day	R
4	800 KVA Standby Diesel Generator System (wet rate)	Day	R
5	630 KVA Standby Diesel Generator System (wet rate)	Day	R
6	400 KVA Standby Diesel Generator System (wet rate)	Day	R
8	200 KVA Standby Diesel Generator System (wet rate)	Day	R
9	Truck, with 4 Ton Capacity Crane	Day	R
10	$6m^3$ Tipper Truck	Day	R
11	$10m^3$ Tipper Truck	Day	R
12	Bobcat	Day	R
13	Standard Size TLB	Day	R
14	Excavator (0.1kW per tined width of bucket)	Day	R
15	Compactor (Vibrating Plate)	Day	R
16	4" Trash Pump	Day	R
17	6" Mobile Diesel Pump & Auxiliaries (Including Layflats)	Day	R
18	Combination Super Sucker Truck (with High Pressure Jetting Capabilities)	Day	R
19	Lifting Equipment (8 Ton Crane) & Accessories	Day	R
20	Lifting Equipment (20 Ton Crane) & Accessories	Day	R
21	Lifting Equipment (25 Ton Crane) & Accessories	Day	R
22	Lifting Equipment (35 Ton Crane) & Accessories	Day	R
23	Lifting Equipment (55 Ton Crane) & Accessories	Day	R
24	Lifting Equipment (90 Ton Crane) & Accessories	Day	R
25	Lifting Equipment (110 Ton Crane) & Accessories	Day	R
26	Lifting Equipment (220 Ton Crane) & Accessories	Day	R
27	Lifting Equipment (275 Ton Crane) & Accessories	Day	R

28	18m Working Height Cherry Picker (230kg SWL)	Day	R
29	28m Working Height Cherry Picker (230kg SWL)	Day	R
30	43m Working Height Cherry Picker (272kg SWL)	Day	R
31	Artisan Fitter's Toolbox	Day	R
32	Electrician's Toolbox	Day	R
33	Mechanician's Toolbox	Day	R
34	Standard Welding Equipment (Complete Set)	Day	R
35	Standard Cutting Torch (Complete Set)	Day	R
36	Standard Grinder 9''	Day	R

d) **CIVIL WORKS**

ITEM	DESCRIPTION	UNIT	RATE (VAT INCLUSIVE) R
1	Concrete foundation for MCC panels completes with excavation, steel reinforcing, foundation bolts and template set, back fill and compacting etc.	metre/square	R
2	Soil bearing pressure test certificates	each	R
3	Test certificates or concrete 10/30/40 days for plinth foundation	each	R
4	Trenching by hand for LV cable / sleeve, 400 mm wide x 700 mm deep, including backfilling and compaction (for power, signal and fibre cables) **(Pickable ground)**	m	R
5	Trenching by hand for LV cable / sleeve, 400 mm wide x 700 mm deep, including backfilling and compaction (for power, signal and fibre cables) **(Clay ground)**	m	R
6	Trenching by hand for LV cable / sleeve, 400 mm wide x 700 mm deep, including backfilling and compaction (for power, signal and fibre cables) (**Hard ground)**	m	R
7	Disposal of surplus or unsuitable material including haulage up to 10 km from site.	/km	R
8	Break-up and re-instate paving along cable route after installation of sleeve.	metre/square	R
9	Install concrete manhole (900mm dia) with cover	Per ring	R

e) **INSTALLATION PERSONNEL FOR VARIOUS SITES**

PERSONNEL FOR VARIOUS SITES			
ITEM	**DESCRIPTION**	**UNIT**	**RATE (Incl. VAT)**
1.	Electrical Engineer	hr	
2.	Electrical Technologist	hr	
3.	Structural/ Civil Engineer (Pr. Eng)	hr	
4.	Structural/ Civil Technologist (Pr. Tech)	hr	
5.	Environmental Officer	hr	
6.	Health & Safety Officer (Pr. SACPCMP)	hr	
7.	Installation Fitter	hr	
8.	Installation Electrician	hr	
9.	Installation Instrumentation Technician	hr	
10.	Instrumentation Mechanician's Toolbox	hr	
11.	Installation Rigger	hr	
12.	Draughtsperson	hr	
13.	Semi-Skilled Worker (Trade Aid Assistant)	hr	
14.	General Worker	hr	

2. SECTION B: SCHEDULE OF RATES FOR EXISTING TECHNOLOGIES

Supply, delivery and install - mcc panel including door mount louvers, extraction fans, double handling if stored, pre- installation activities, quality assurance, and modifications and providing required certification as per this contract (Tenderers to price each control / equipment cubicle separately in accordance with the typical items of equipment to be installed inside, same as indicated in the Specification. Allowance shall be made for all busbars, wiring, cut-outs, etc required)

The replacement of equipment is subject to the requirements of:
SANS 10142-1:2024 Edition 3.2

"Components should be selected for their suitability for application taking into account information available from the component manufacturers. It might be necessary to derate the component depending on the environment and application conditions."

Based on the SANS requirement listed above to ensure that addition to exiting motor control centres and electrical control panels are compliant the major installed base of equipment types are listed for this specific application. As well a an alternative for green fields project were this requirement is not applicable. For the alternative technologies quoted on, brochures will be required during the Service Level Agreement (SLA's).

2.1. SCHNEIDER TECHNOLOGY: ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES (MCC PANELS, ELECTRICAL WORK)

2.1.1. Control cubicles:

Supply, delivery and installation of typical Incomer compartment cubicle, incl. kWh meter complete with power analyser, surge arrestors, bus bars, etc. with both main incoming and generator MCB's rated as indicated in the table below;

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	60A @ 10 kA	each	R
2	100A @ 15 kA	each	R
3	150A @ 15 kA	each	R
4	250A @ 25 kA	each	R
5	300A @ 25 kA	each	R
6	60A @ 10 kA	each	R
7	300 to 630A @ 50 kA	each	R
8	Supply and delivery of panel door mount louvers and extraction fans	each	R
9	Supply and delivery of MCC room ventilation system including wall mount louvers and extraction fans (including civil and installation works)	each	R

2.1.2. Supply, delivery and installation of Single pump control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, excl. pump motor drive VSD Starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	3 kW pump	each	R
2	5.5 KW pump	each	R
3	7,5 kW pump	each	R
4	11 kW pump	each	R
5	15 kW pump	each	R
6	30 kW pump	each	R
7	37 kW pump	each	R
8	45 kW pump	each	R
9	55 kW pump	each	R
10	75 kW pump	each	R
11	90 kW pump	each	R
12	132 kW pump	each	R
13	315 kW pump	each	R

2.1.3. Supply, delivery and installation of Single pump control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, excl. pump motor drive Soft Starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	3 kW pump	each	R
2	5.5 KW pump	each	R
3	7,5 kW pump	each	R
4	11 kW pump	each	R
5	15 kW pump	each	R
6	30 kW pump	each	R
7	37 kW pump	each	R
8	45 kW pump	each	R
9	55 kW pump	each	R

10	75 kW pump	each	R
11	90 kW pump	each	R
12	132 kW pump	each	R
13	315 kW pump	each	R

2.1.4. Supply, delivery and installation of Single mixer control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excluding pump motor drive VSD starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	1.1 kW mixer	each	R
2	1.5 kW mixer	each	R
3	2.2 kW mixer	each	R
4	3 kW mixer	each	R
5	7.5 kW mixer	each	R
6	15 kW mixer	each	R

2.1.5. Supply, delivery and installation of Single mixer control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl pump motor drive Soft Starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	1.1 kW mixer	each	R
2	1.5 kW mixer	each	R
3	2.2 kW mixer	each	R
4	3 kW mixer	each	R
5	7.5 kW mixer	each	R
6	15 kW mixer	each	R

2.1.6. Supply, delivery and installation of Single mixer control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl mixer motor drive VSD starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R

1	1.1 kW mixer	each	R
2	3 kW mixer	each	R

2.1.7. Supply, delivery and installation of Single mixer control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl mixer motor drive soft starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	1.1 kW mixer	each	R
2	3 kW mixer	each	R

2.1.8. Supply, delivery and installation of Single mechanical screen control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl screen motor drive VSD starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Screen	each	R
2	0.75 kW Screen	each	R
3	1.1 kW Screen	each	R
4	3 kW Screen	each	R

2.1.9. Supply, delivery and installation of Single mechanical screen control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excluding screen motor drive soft starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Screen	each	R
2	0.75 kW Screen	each	R
3	1.1 kW Screen	each	R
4	3 kW Screen	each	R

2.1.10. Supply, delivery and installation of Single screw conveyor screen control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excluding motor drive VSD starters ratings in the table below:

Item	Description	Unit Of Measure	

			Rate (VAT INCLUSIVE) **R**
1	0.75 kW screw conveyor	each	R
2	1.1 kW screw conveyor	each	R
3	2.2 kW screw conveyor	each	R
4	3 kW screw conveyor	each	R
5	4 kW screw conveyor	each	R

2.1.11. Supply, delivery and installation of Single screw conveyor screen control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excluding motor drive soft starters ratings in the table below:

Item	**Description**	**Unit Of Measure**	**Rate (VAT INCLUSIVE)** **R**
1	0.75 kW screw conveyor	each	R
2	1.1 kW screw conveyor	each	R
3	2.2 kW screw conveyor	each	R
4	3 kW screw conveyor	each	R
5	4 kW screw conveyor	each	R

2.1.12. Supply, delivery and installation of Single Blower control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excluding motor drive VSD starters ratings in the table below:

Item	**Description**	**Unit Of Measure**	**Rate (VAT INCLUSIVE)** **R**
1	1.5 kW Blower	each	R
2	7.5 kW Blower	each	R
3	11 kW Blower	each	R
4	15 kW Blower	each	R
5	400 kW Blower	each	R

2.1.13. Supply, delivery and installation of Single Blower control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl motor drive soft starters ratings in the table below:

Item	**Description**	**Unit Of Measure**	**Rate (VAT INCLUSIVE)** **R**
1	1.5 kW Blower	each	R

2	7.5 kW Blower	each	R
3	11 kW Blower	each	R
4	15 kW Blower	each	R
5	400 kW Blower	each	R

2.1.14. Supply, delivery and installation of Single Compressors control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive DOL starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	5.5 kW Compressor	each	R
2	7.5 kW Compressor	each	R
3	15 kW Compressor	each	R
4	30 kW Compressor	each	R

2.1.15. Supply, delivery and installation of Single Compressors control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive VSD starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	5.5 kW Compressor	each	R
2	7.5 kW Compressor	each	R
3	15 kW Compressor	each	R
4	30 kW Compressor	each	R

2.1.16. Supply, delivery and installation of Single Compressors control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive soft starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	5.5 kW Compressor	each	R
2	7.5 kW Compressor	each	R
3	15 kW Compressor	each	R
4	30 kW Compressor	each	R

2.1.17. Supply, delivery and installation of Single Sediment Tank control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive DOL starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Motor	each	R
2	0.75 kW Motor	each	R

2.1.18. Supply, delivery and installation of Single Sediment Tank control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive VSD starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Motor	each	R
2	0.75 kW Motor	each	R

2.1.19. Supply, delivery and installation of Single Sediment Tank control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive soft starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Motor	each	R
2	0.75 kW Motor	each	R

2.1.20. Supply, delivery and installation of Single Grid removal control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive DOL starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Motor	each	R
2	0.75 kW Motor	each	R

2.1.21. Supply, delivery and installation of Single Grid removal control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive VSD starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Motor	each	R
2	0.75 kW Motor	each	R

2.1.22. Supply, delivery and installation of Single Grid removal control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive soft starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Motor	each	R
2	0.75 kW Motor	each	R

2.1.23. Supply, delivery and installation of Single Aerator control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive DOL starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
2	37 kW Motor	Sum	R
3	55 kW Motor	Sum	R
4	75 kW Motor	Sum	R

2.1.24. Supply, delivery and installation of Single Aerator control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive VSD starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
2	37 kW Motor	Sum	R
3	55 kW Motor	Sum	R
4	75 kW Motor	Sum	R

2.1.25. Supply, delivery and installation of Single Aerator control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive soft starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
2	37 kW Motor	Sum	R
3	55 kW Motor	Sum	R
4	75 kW Motor	Sum	R

2.1.26. Supply, delivery and installation VSD inside new Motor Control Panel cubicles for ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.18 kW Motor	each	R
2	0.5 kW Motor	each	R
3	0.55 kW Motor	each	R
4	0.75 kW Motor	each	R
5	1.1 kW Motor	each	R
6	1.5 kW Motor	each	R
7	2.2 kW Motor	each	R
8	3 kW Motor	each	R
9	4 kW Motor	each	R
10	5.5 KW Motor	each	R
11	7,5 kW Motor	each	R
12	8.5 kW Motor	each	R
13	11 kW Motor	each	R
14	12 kW Motor	each	R
15	15 kW Motor	each	R
16	18.5 kW Motor	each	R
17	22 kW Motor	each	R
18	30 kW Motor	each	R
19	37 kW Motor	each	R
20	45 kW Motor	each	R
21	55 kW Motor	each	R
22	75 kW Motor	each	R
23	90 kW Motor	each	R
24	132 kW Motor	each	R

25	315 kW Motor	each	R
26	400 kW Motor	each	R

2.1.27. Supply, delivery and installation of input reactor (choke) for VSD inside new Motor Control Panel cubicles for ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.18 kW Motor	each	R
2	0.5 kW Motor	each	R
3	0.55 kW Motor	each	R
4	0.75 kW Motor	each	R
5	1.1 kW Motor	each	R
6	1.5 kW Motor	each	R
7	2.2 kW Motor	each	R
8	3 kW Motor	each	R
9	4 kW Motor	each	R
10	5.5 KW Motor	each	R
11	7,5 kW Motor	each	R
12	8.5 kW Motor	each	R
13	11 kW Motor	each	R
14	12 kW Motor	each	R
15	15 kW Motor	each	R
16	18.5 kW Motor	each	R
17	22 kW Motor	each	R
18	30 kW Motor	each	R
19	37 kW Motor	each	R
20	45 kW Motor	each	R
21	55 kW Motor	each	R
22	75 kW Motor	each	R
23	90 kW Motor	each	R
24	132 kW Motor	each	R
25	315 kW Motor	each	R
26	400 kW Motor	each	R

2.1.28. Supply, delivery and installation of Output reactor (choke) for VSD inside new Motor Control Panel cubicles for ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.18 kW Motor	each	R
2	0.5 kW Motor	each	R
3	0.55 kW Motor	each	R
4	0.75 kW Motor	each	R
5	1.1 kW Motor	each	R
6	1.5 kW Motor	each	R
7	2.2 kW Motor	each	R
8	3 kW Motor	each	R
9	4 kW Motor	each	R
10	5.5 KW Motor	each	R
11	7,5 kW Motor	each	R
12	8.5 kW Motor	each	R
13	11 kW Motor	each	R
14	12 kW Motor	each	R
15	15 kW Motor	each	R
16	18.5 kW Motor	each	R
17	22 kW Motor	each	R
18	30 kW Motor	each	R
19	37 kW Motor	each	R
20	45 kW Motor	each	R
21	55 kW Motor	each	R
22	75 kW Motor	each	R
23	90 kW Motor	each	R
24	132 kW Motor	each	R
25	315 kW Motor	each	R
26	400 kW Motor	each	R

2.1.29. Supply, delivery and installation for soft starter equipment type inside new Motor Control Panel cubicles for ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	3 kW motor	each	R
2	7.5 kW motor	each	R
3	15 kW motor	each	R
4	30 kW motor	each	R
5	37 kW motor	each	R
6	55 kW motor	each	R
7	75 kW motor	each	R
8	90 kW motor	each	R
9	132 kW motor	each	R
10	260 kW motor	each	R

2.1.30. Supply and delivery set of three ultra-rapid fuses for all VSD / Soft Starter equipment installed in MCC panel ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.18 kW Motor	each	R
2	0.5 kW Motor	each	R
3	0.55 kW Motor	each	R
4	0.75 kW Motor	each	R
5	1.1 kW Motor	each	R
6	1.5 kW Motor	each	R
7	2.2 kW Motor	each	R
8	3 kW Motor	each	R
9	4 kW Motor	each	R
10	5.5 KW Motor	each	R
11	7,5 kW Motor	each	R
12	8.5 kW Motor	each	R
13	11 kW Motor	each	R
14	12 kW Motor	each	R
15	15 kW Motor	each	R

16	18.5 kW Motor	each	R
17	22 kW Motor	each	R
18	30 kW Motor	each	R
19	37 kW Motor	each	R
20	45 kW Motor	each	R
21	55 kW Motor	each	R
22	75 kW Motor	each	R
23	90 kW Motor	each	R
24	132 kW Motor	each	R
25	315 kW Motor	each	R
26	400 kW Motor	each	R

2.1.31. Supply, delivery and installation of Moulded case circuit breaker complete with interconnecting tails, etc. installed inside MCC Panel, kiosk, etc ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	300 to 630A 3 Pole 50kA Circuit Breaker.	each	R
2	300A 3 Pole 25kA Circuit Breaker.	each	R
3	250A 3 Pole 25kA Circuit Breaker.	each	R
4	150A 3 Pole 15kA Circuit Breaker.	each	R
5	100A 3 Pole 10kA Circuit Breaker.	each	R
6	80A 3 Pole 10kA Circuit Breaker.	each	R
7	63A 3 Pole 10kA Circuit Breaker.	each	R
8	40A 3 Pole 10kA Circuit Breaker.	each	R
9	40A 2 Pole 10kA Circuit Breaker.	each	R
10	20A 3 Pole 10kA Circuit Breaker.	each	R
11	20A 2 Pole 10kA Circuit Breaker.	each	R
12	80A 3 Pole 10kA Circuit Breaker.	each	R
13	63A 2 Pole 10kA Circuit Breaker.	each	R
14	20A 1 Pole 6kA Circuit Breaker.	each	R
15	16A 1 Pole 6kA Circuit Breaker.	each	R
16	10A 1 Pole 6kA Circuit Breaker.	each	R
17	3 Phase + N Class 2 surge protection (Dehn guard & Dehn Gap)	each	R
18	63A E/L Unit (3P + N)	each	R

19	63A E/L Unit (1P + N)	each	R

2.1.32. Supply, delivery and installation of **Single M340 PLC Level 2** / HMI control compartment complete with PLC and HMI equipment, I/O and communication cards, etc as specified with sufficient I/O modules as listed below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	Main Power supply (230VAC-24 VDC)	each	R
2	Main Power supply (24 VDC-24 VDC)	each	R
3	CPU Modbus Ethernet	each	R
4	Communication Module Ethernet Device Scanning	each	R
5	4 slot Backplane	each	R
6	6 slot Backplane	each	R
7	8 slot Backplane	each	R
8	12 slot Backplane	each	R
9	4-20 mA Ethernet Converter	each	R
10	Ethernet Manageable Switch 2 Fibre and 6 Copper	each	R
11	Ethernet Manageable Switch 2 Fibre and 24 Copper	each	R
12	Termination box- IP 20 rated polyester enclosures with hinged door and enough space to allow for a 25% extension	each	R
13	3.5" Touch Screen Panel HMI	each	R
14	12" Touch Screen Panel HMI	each	R
15	8 Channels AI Isolated	each	R
16	4 Channel AO Isolated	each	R
17	8 Channels DI Positive sink	each	R

18	8 Channels DO Positive	each	R
21	16 Channels DI Positive sink	each	R
22	16 Channels DO Positive	each	R
25	32 Channels DI Positive sink	each	R
26	32 Channels DO Positive	each	R
27	64 Channels DI Positive sink	each	R
28	64 Channels DO Positive	each	R
29	All PLC and auxiliary software e.g. EcoStruxure Control Expert for PLC, Ecostruxure Operator Terminal for HMI or EcoStruxure Automation Expert both PLC and HMI	each	R
30	Certified system integrator training for one person optional + WWW Badge	each	R

2.1.33. Supply, delivery and installation **M580 PLC** / HMI control compartment complete with PLC and HMI equipment, I/O and communication cards, etc as specified with sufficient I/O modules, as listed below:

Item	**Description**	**Unit Of Measure**	**Supply And Deliver Rate (Including VAT)**
1	Main Power supply (230VAC-24 VDC)	each	R
2	Main Power supply (24 VDC-24 VDC)	each	R
3	CPU Modbus Ethernet	each	R
4	Communication Module Ethernet Device Scanning	each	R
5	4 slot Backplane	each	R
6	6 slot Backplane	each	R
7	8 slot Backplane	each	R
8	12 slot Backplane	each	R
9	4-20 mA Ethernet Converter	each	R

10	Ethernet Manageable Switch 2 Fibre and 6 Copper	each	R
11	Ethernet Manageable Switch 2 Fibre and 24 Copper	each	R
12	Termination box- IP 20 rated polyester enclosures with hinged door and enough space to allow for a 25% extension	each	R
13	3.5" Touch Screen Panel HMI	each	R
14	12" Touch Screen Panel HMI	each	R
15	8 Channels AI Isolated	each	R
16	4 Channel AO Isolated	each	R
17	8 Channels DI Positive sink	each	R
18	8 Channels DO Positive	each	R
21	16 Channels DI Positive sink	each	R
22	16 Channels DO Positive	each	R
25	32 Channels DI Positive sink	each	R
26	32 Channels DO Positive	each	R
27	64 Channels DI Positive sink	each	R
28	64 Channels DO Positive	each	R
29	All PLC and auxiliary software e.g. EcoStruxure Control Expert for PLC, Ecostruxure Operator Terminal for HMI or EcoStruxure Automation Expert both PLC and HMI	each	R
30	Certified system integrator training for one person optional + WWW Badge	each	R

2.1.34. Supply, delivery and installation **M580 dpac PLC** Level 2 / HMI control compartment complete with PLC and HMI equipment, I/O and communication cards, etc as specified with sufficient I/O modules, as listed below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	Main Power supply (230VAC-24 VDC)	each	R
2	Main Power supply (24 VDC-24 VDC)	each	R
3	CPU Modbus Ethernet	each	R
4	Communication Module Ethernet Device Scanning	each	R
5	4 slot Backplane	each	R
6	6 slot Backplane	each	R
7	8 slot Backplane	each	R
8	12 slot Backplane	each	R
9	4-20 mA Ethernet Converter	each	R
10	Ethernet Manageable Switch 2 Fibre and 6 Copper	each	R
11	Ethernet Manageable Switch 2 Fibre and 24 Copper	each	R
12	Termination box- IP 20 rated polyester enclosures with hinged door and enough space to allow for a 25% extension	each	R
13	3.5" Touch Screen Panel HMI	each	R
14	12" Touch Screen Panel HMI	each	R
15	8 Channels AI Isolated	each	R
16	4 Channel AO Isolated	each	R
17	8 Channels DI Positive sink	each	R
18	8 Channels DO Positive	each	R
21	16 Channels DI Positive sink	each	R

22	16 Channels DO Positive	each	R
25	32 Channels DI Positive sink	each	R
26	32 Channels DO Positive	each	R
27	64 Channels DI Positive sink	each	R
28	64 Channels DO Positive	each	R
29	All PLC and auxiliary software e.g. EcoStruxure Control Expert for PLC, Ecostruxure Operator Terminal for HMI or EcoStruxure Automation Expert both PLC and HMI	each	R
30	Certified system integrator training for one person optional + WWW Badge	each	R

2.1.35. Supply, delivery and installation **Soft PLC** / HMI control compartment complete with PLC and HMI equipment, I/O and communication cards, etc as specified with sufficient I/O modules, as listed below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	Main Power supply (230VAC-24 VDC)	each	R
2	Main Power supply (24 VDC-24 VDC)	each	R
3	CPU Modbus Ethernet	each	R
4	Communication Module Ethernet Device Scanning	each	R
5	4 slot Backplane	each	R
6	6 slot Backplane	each	R
7	8 slot Backplane	each	R
8	12 slot Backplane	each	R
9	4-20 mA Ethernet Converter	each	R
10	Ethernet Manageable Switch 2 Fibre and 6 Copper	each	R
11	Ethernet Manageable Switch	each	R

	2 Fibre and 24 Copper		
12	Termination box- IP 20 rated polyester enclosures with hinged door and enough space to allow for a 25% extension	each	R
13	3.5" Touch Screen Panel HMI	each	R
14	12" Touch Screen Panel HMI	each	R
15	8 Channels AI Isolated	each	R
16	4 Channel AO Isolated	each	R
17	8 Channels DI Positive sink	each	R
18	8 Channels DO Positive	each	R
21	16 Channels DI Positive sink	each	R
22	16 Channels DO Positive	each	R
25	32 Channels DI Positive sink	each	R
26	32 Channels DO Positive	each	R
27	64 Channels DI Positive sink	each	R
28	64 Channels DO Positive	each	R
29	All PLC and auxiliary software e.g. EcoStruxure Control Expert for PLC, Ecostruxure Operator Terminal for HMI or EcoStruxure Automation Expert both PLC and HMI	each	R
30	Certified system integrator training for one person optional + WWW Badge	each	R

2.2. SIEMENS TECHNOLOGY: ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES (MCC PANELS, ELECTRICAL WORK)

Supply, delivery and install - mcc panel including door mount louvers, extraction fans, double handling if stored, pre- installation activities, quality assurance, and modifications and providing required certification as per this contract (Tenderers to price each control / equipment cubicle separately in accordance with the typical items of equipment to be installed inside, same as indicated in the Specification. Allowance shall be made for all busbars, wiring, cut-outs, etc required)

2.2.1. SIEMENS TECHNOLOGY: ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES (MCC PANELS, ELECTRICAL WORK)

2.2.2. Control cubicles:
Supply, delivery and installation of typical Incomer compartment cubicle, incl. kWh meter complete with power analyser, surge arrestors, bus bars, etc. with both main incoming and generator MCB's rated as indicated in the table below;

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	60A @ 10 kA	each	R
2	100A @ 15 kA	each	R
3	150A @ 15 kA	each	R
4	250A @ 25 kA	each	R
5	300A @ 25 kA	each	R
6	60A @ 10 kA	each	R
7	300 to 630A @ 50 kA	each	R
8	Supply and delivery of panel door mount louvers and extraction fans	each	R
9	Supply and delivery of MCC room ventilation system including wall mount louvers and extraction fans (including civil and installation works)	each	R

2.2.3. Supply, delivery and installation of Single pump control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, excl. pump motor drive VSD Starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	3 kW pump	each	R
2	5.5 KW pump	each	R
3	7,5 kW pump	each	R

4	11 kW pump	each	R
5	15 kW pump	each	R
6	30 kW pump	each	R
7	37 kW pump	each	R
8	45 kW pump	each	R
9	55 kW pump	each	R
10	75 kW pump	each	R
11	90 kW pump	each	R
12	132 kW pump	each	R
13	315 kW pump	each	R

2.2.4. Supply, delivery and installation of Single pump control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, excl. pump motor drive Soft Starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	3 kW pump	each	R
2	5.5 KW pump	each	R
3	7,5 kW pump	each	R
4	11 kW pump	each	R
5	15 kW pump	each	R
6	30 kW pump	each	R
7	37 kW pump	each	R
8	45 kW pump	each	R
9	55 kW pump	each	R
10	75 kW pump	each	R
11	90 kW pump	each	R
12	132 kW pump	each	R
13	315 kW pump	each	R

2.2.5. Supply, delivery and installation of Single mixer control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl pump motor drive VSD starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	1.1 kW mixer	each	R
2	1.5 kW mixer	each	R
3	2.2 kW mixer	each	R
4	3 kW mixer	each	R
5	7.5 kW mixer	each	R
6	15 kW mixer	each	R

2.2.6. Supply, delivery and installation of Single mixer control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl pump motor drive Soft Starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	1.1 kW mixer	each	R
2	1.5 kW mixer	each	R
3	2.2 kW mixer	each	R
4	3 kW mixer	each	R
5	7.5 kW mixer	each	R
6	15 kW mixer	each	R

2.2.7. Supply, delivery and installation of Single mixer control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl mixer motor drive VSD starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	1.1 kW mixer	each	R
2	3 kW mixer	each	R

2.2.8. Supply, delivery and installation of Single mixer control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl mixer motor drive soft starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	1.1 kW mixer	each	R
2	3 kW mixer	each	R

2.2.9. Supply, delivery and installation of Single mechanical screen control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl screen motor drive VSD starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Screen	each	R
2	0.75 kW Screen	each	R
3	1.1 kW Screen	each	R
4	3 kW Screen	each	R

2.2.10. Supply, delivery and installation of Single mechanical screen control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl screen motor drive soft starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Screen	each	R
2	0.75 kW Screen	each	R
3	1.1 kW Screen	each	R
4	3 kW Screen	each	R

2.2.11. Supply, delivery and installation of Single screw conveyor screen control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl motor drive VSD starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.75 kW screw conveyor	each	R
2	1.1 kW screw conveyor	each	R
3	2.2 kW screw conveyor	each	R

4	3 kW screw conveyor	each	R
5	4 kW screw conveyor	each	R

2.2.12. Supply, delivery and installation of Single screw conveyor screen control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl motor drive soft starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.75 kW screw conveyor	each	R
2	1.1 kW screw conveyor	each	R
3	2.2 kW screw conveyor	each	R
4	3 kW screw conveyor	each	R
5	4 kW screw conveyor	each	R

2.2.13. Supply, delivery and installation of Single Blower control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl motor drive VSD starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	1.5 kW Blower	each	R
2	7.5 kW Blower	each	R
3	11 kW Blower	each	R
4	15 kW Blower	each	R
5	400 kW Blower	each	R

2.2.14. Supply, delivery and installation of Single Blower control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl motor drive soft starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	1.5 kW Blower	each	R
2	7.5 kW Blower	each	R
3	11 kW Blower	each	R
4	15 kW Blower	each	R
5	400 kW Blower	each	R

2.2.15. Supply, delivery and installation of Single Compressors control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl motor drive DOL starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	5.5 kW Compressor	each	R
2	7.5 kW Compressor	each	R
3	15 kW Compressor	each	R
4	30 kW Compressor	each	R

2.2.16. Supply, delivery and installation of Single Compressors control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl motor drive VSD starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	5.5 kW Compressor	each	R
2	7.5 kW Compressor	each	R
3	15 kW Compressor	each	R
4	30 kW Compressor	each	R

2.2.17. Supply, delivery and installation of Single Compressors control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl motor drive soft starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	5.5 kW Compressor	each	R
2	7.5 kW Compressor	each	R
3	15 kW Compressor	each	R
4	30 kW Compressor	each	R

2.2.18. Supply, delivery and installation of Single Sediment Tank control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive DOL starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Motor	each	R
2	0.75 kW Motor	each	R

2.2.19. Supply, delivery and installation of Single Sediment Tank control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive VSD starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Motor	each	R
2	0.75 kW Motor	each	R

2.2.20. Supply, delivery and installation of Single Sediment Tank control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive soft starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Motor	each	R
2	0.75 kW Motor	each	R

2.2.21. Supply, delivery and installation of Single Grid removal control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive DOL starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Motor	each	R
2	0.75 kW Motor	each	R

2.2.22. Supply, delivery and installation of Single Grid removal control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive VSD starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R

1	0.55 kW Motor	each	R
2	0.75 kW Motor	each	R

2.2.23. Supply, delivery and installation of Single Grid removal control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive soft starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Motor	each	R
2	0.75 kW Motor	each	R

2.2.24. Supply, delivery and installation of Single Aerator control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive DOL starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
2	37 kW Motor	Sum	R
3	55 kW Motor	Sum	R
4	75 kW Motor	Sum	R

2.2.25. Supply, delivery and installation of Single Aerator control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive VSD starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
2	37 kW Motor	Sum	R
3	55 kW Motor	Sum	R
4	75 kW Motor	Sum	R

2.2.26. Supply, delivery and installation of Single Aerator control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive soft starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
2	37 kW Motor	Sum	R
3	55 kW Motor	Sum	R
4	75 kW Motor	Sum	R

2.2.27. Supply, delivery and installation VSD inside new Motor Control Panel cubicles for ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.18 kW Motor	each	R
2	0.5 kW Motor	each	R
3	0.55 kW Motor	each	R
4	0.75 kW Motor	each	R
5	1.1 kW Motor	each	R
6	1.5 kW Motor	each	R
7	2.2 kW Motor	each	R
8	3 kW Motor	each	R
9	4 kW Motor	each	R
10	5.5 KW Motor	each	R
11	7,5 kW Motor	each	R
12	8.5 kW Motor	each	R
13	11 kW Motor	each	R
14	12 kW Motor	each	R
15	15 kW Motor	each	R
16	18.5 kW Motor	each	R
17	22 kW Motor	each	R
18	30 kW Motor	each	R
19	37 kW Motor	each	R
20	45 kW Motor	each	R
21	55 kW Motor	each	R
22	75 kW Motor	each	R
23	90 kW Motor	each	R
24	132 kW Motor	each	R
25	315 kW Motor	each	R
26	400 kW Motor	each	R

2.2.28. Supply, delivery and installation of input reactor (choke) for VSD inside new Motor Control Panel cubicles for ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.18 kW Motor	each	R
2	0.5 kW Motor	each	R
3	0.55 kW Motor	each	R
4	0.75 kW Motor	each	R
5	1.1 kW Motor	each	R
6	1.5 kW Motor	each	R
7	2.2 kW Motor	each	R
8	3 kW Motor	each	R
9	4 kW Motor	each	R
10	5.5 KW Motor	each	R
11	7,5 kW Motor	each	R
12	8.5 kW Motor	each	R
13	11 kW Motor	each	R
14	12 kW Motor	each	R
15	15 kW Motor	each	R
16	18.5 kW Motor	each	R
17	22 kW Motor	each	R
18	30 kW Motor	each	R
19	37 kW Motor	each	R
20	45 kW Motor	each	R
21	55 kW Motor	each	R
22	75 kW Motor	each	R
23	90 kW Motor	each	R
24	132 kW Motor	each	R
25	315 kW Motor	each	R
26	400 kW Motor	each	R

2.2.29. Supply, delivery and installation of Output reactor (choke) for VSD inside new Motor Control Panel cubicles for ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.18 kW Motor	each	R
2	0.5 kW Motor	each	R

3	0.55 kW Motor	each	R
4	0.75 kW Motor	each	R
5	1.1 kW Motor	each	R
6	1.5 kW Motor	each	R
7	2.2 kW Motor	each	R
8	3 kW Motor	each	R
9	4 kW Motor	each	R
10	5.5 KW Motor	each	R
11	7,5 kW Motor	each	R
12	8.5 kW Motor	each	R
13	11 kW Motor	each	R
14	12 kW Motor	each	R
15	15 kW Motor	each	R
16	18.5 kW Motor	each	R
17	22 kW Motor	each	R
18	30 kW Motor	each	R
19	37 kW Motor	each	R
20	45 kW Motor	each	R
21	55 kW Motor	each	R
22	75 kW Motor	each	R
23	90 kW Motor	each	R
24	132 kW Motor	each	R
25	315 kW Motor	each	R
26	400 kW Motor	each	R

2.2.30. Supply, delivery and installation for soft starter equipment type inside new Motor Control Panel cubicles for ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	3 kW motor	each	R
2	7.5 kW motor	each	R
3	15 kW motor	each	R
4	30 kW motor	each	R
5	37 kW motor	each	R

6	55 kW motor	each	R
7	75 kW motor	each	R
8	90 kW motor	each	R
9	132 kW motor	each	R
10	260 kW motor	each	R

2.2.31. Supply and delivery set of three ultra-rapid fuses for all VSD / Soft Starter equipment installed in MCC panel ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.18 kW Motor	each	R
2	0.5 kW Motor	each	R
3	0.55 kW Motor	each	R
4	0.75 kW Motor	each	R
5	1.1 kW Motor	each	R
6	1.5 kW Motor	each	R
7	2.2 kW Motor	each	R
8	3 kW Motor	each	R
9	4 kW Motor	each	R
10	5.5 KW Motor	each	R
11	7,5 kW Motor	each	R
12	8.5 kW Motor	each	R
13	11 kW Motor	each	R
14	12 kW Motor	each	R
15	15 kW Motor	each	R
16	18.5 kW Motor	each	R
17	22 kW Motor	each	R
18	30 kW Motor	each	R
19	37 kW Motor	each	R
20	45 kW Motor	each	R
21	55 kW Motor	each	R
22	75 kW Motor	each	R
23	90 kW Motor	each	R
24	132 kW Motor	each	R

25	315 kW Motor	each	R
26	400 kW Motor	each	R

2.2.32. Supply, delivery and installation of Moulded case circuit breaker complete with interconnecting tails, etc. installed inside MCC Panel, kiosk, etc ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	300 to 630A 3 Pole 50kA Circuit Breaker.	each	R
2	300A 3 Pole 25kA Circuit Breaker.	each	R
3	250A 3 Pole 25kA Circuit Breaker.	each	R
4	150A 3 Pole 15kA Circuit Breaker.	each	R
5	100A 3 Pole 10kA Circuit Breaker.	each	R
6	80A 3 Pole 10kA Circuit Breaker.	each	R
7	63A 3 Pole 10kA Circuit Breaker.	each	R
8	40A 3 Pole 10kA Circuit Breaker.	each	R
9	40A 2 Pole 10kA Circuit Breaker.	each	R
10	20A 3 Pole 10kA Circuit Breaker.	each	R
11	20A 2 Pole 10kA Circuit Breaker.	each	R
12	80A 3 Pole 10kA Circuit Breaker.	each	R
13	63A 2 Pole 10kA Circuit Breaker.	each	R
14	20A 1 Pole 6kA Circuit Breaker.	each	R
15	16A 1 Pole 6kA Circuit Breaker.	each	R
16	10A 1 Pole 6kA Circuit Breaker.	each	R
17	3 Phase + N Class 2 surge protection (Dehn guard & Dehn Gap)	each	R
18	63A E/L Unit (3P + N)	each	R
19	63A E/L Unit (1P + N)	each	R

2.2.33. Supply, delivery and installation Single PLC / HMI control compartment complete with PLC and HMI equipment, I/O and communication cards, etc as specified with sufficient I/O modules as listed below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1.	Main load supply 8 Amp (230VAC-24 VDC)	each	R

2.	Segment supply 25W (24 VDC-24 VDC)	each	R
3.	CPU (Modbus/TCP Profinet) + Memory card	each	R
4.	Communication Module TCP/IP	each	R
5.	PLC Mounting rail 830mm	each	R
6.	Interface module (Profinet; Modbus/TCP)	each	R
7.	Ethernet Manageable Switch 2 Fibre and 6 Copper	each	R
8.	Ethernet Manageable Switch 2 Fibre and 24 Copper	each	R
9.	4" Multi Touch Screen Panel HMI	each	R
10.	12" Multi Touch Screen Panel HMI	each	R
11.	8 Channels AI + Front connector	each	R
12.	8 Channels AO + Front connector	each	R
13.	16 Channels AI + Front Connector	each	R
14.	16 Channels DI + Front connector	each	R
15.	16 Channels DO + Front connector	each	R
16.	32 Channels DI + Front connector	each	R
17.	32 Channels DO + Front connector	each	R
18.	64 Channels DI + Front connector	each	R
19.	64 Channels DO+ Front connector	each	R
20.	All PLC and auxiliary software	each	R
21.	Certified system integrator training for one person	each	R

3.1. **ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES – ANY SIMILAR ALTERNATIVE EQUIPMENT MANUFACTURER: ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES (MCC PANELS, ELECTRICAL WORK)**

Supply, delivery and install - mcc panel including door mount louvers, extraction fans, double handling if stored, pre- installation activities, quality assurance, and modifications and providing required certification as per this contract (Tenderers to price each control / equipment cubicle separately in accordance with the typical items of equipment to be installed inside, same as indicated in the Specification. Allowance shall be made for all busbars, wiring, cut-outs, etc required)

3.1.1. **ANY SIMILAR ALTERNATIVE TECHNOLOGY: ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES (MCC PANELS, ELECTRICAL WORK)**

3.1.2. Control cubicles:
Supply, delivery and installation of typical Incomer compartment cubicle, incl. kWh meter complete with power analyser, surge arrestors, bus bars, etc. with both main incoming and generator MCB's rated as indicated in the table below;

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	60A @ 10 kA	each	R
2	100A @ 15 kA	each	R
3	150A @ 15 kA	each	R
4	250A @ 25 kA	each	R
5	300A @ 25 kA	each	R
6	60A @ 10 kA	each	R
7	300 to 630A @ 50 kA	each	R
8	Supply and delivery of panel door mount louvers and extraction fans	each	R
9	Supply and delivery of MCC room ventilation system including wall mount louvers and extraction fans (including civil and installation works)	each	R

3.1.3. **Supply, delivery and installation of Single pump control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, excl. pump motor drive <u>VSD Starters</u> ratings in the table below:**

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	3 kW pump	each	R
2	5.5 KW pump	each	R
3	7,5 kW pump	each	R

4	11 kW pump	each	R
5	15 kW pump	each	R
6	30 kW pump	each	R
7	37 kW pump	each	R
8	45 kW pump	each	R
9	55 kW pump	each	R
10	75 kW pump	each	R
11	90 kW pump	each	R
12	132 kW pump	each	R
13	315 kW pump	each	R

3.1.4. **Supply, delivery and installation of Single pump control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, excl. pump motor drive <u>Soft Starters</u> ratings in the table below:**

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	3 kW pump	each	R
2	5.5 KW pump	each	R
3	7,5 kW pump	each	R
4	11 kW pump	each	R
5	15 kW pump	each	R
6	30 kW pump	each	R
7	37 kW pump	each	R
8	45 kW pump	each	R
9	55 kW pump	each	R
10	75 kW pump	each	R
11	90 kW pump	each	R
12	132 kW pump	each	R
13	315 kW pump	each	R

3.1.5. **Supply, delivery and installation of Single mixer control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl pump motor drive <u>VSD starters</u> ratings in the table below:**

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	1.1 kW mixer	each	R
2	1.5 kW mixer	each	R
3	2.2 kW mixer	each	R
4	3 kW mixer	each	R
5	7.5 kW mixer	each	R
6	15 kW mixer	each	R

3.1.6. **Supply, delivery and installation of Single mixer control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl pump motor drive <u>Soft Starters</u> ratings in the table below:**

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	1.1 kW mixer	each	R
2	1.5 kW mixer	each	R
3	2.2 kW mixer	each	R
4	3 kW mixer	each	R
5	7.5 kW mixer	each	R
6	15 kW mixer	each	R

3.1.7. **Supply, delivery and installation of Single mixer control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl mixer motor drive <u>VSD starters</u> ratings in the table below:**

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	1.1 kW mixer	each	R
2	3 kW mixer	each	R

3.1.8. **Supply, delivery and installation of Single mixer control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl mixer motor drive <u>soft starters</u> ratings in the table below:**

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	1.1 kW mixer	each	R
2	3 kW mixer	each	R

3.1.9. **Supply, delivery and installation of Single mechanical screen control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl screen motor drive VSD starters ratings in the table below:**

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Screen	each	R
2	0.75 kW Screen	each	R
3	1.1 kW Screen	each	R
4	3 kW Screen	each	R

3.1.10. Supply, delivery and installation of Single mechanical screen control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl screen motor drive soft starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Screen	each	R
2	0.75 kW Screen	each	R
3	1.1 kW Screen	each	R
4	3 kW Screen	each	R

3.1.11. Supply, delivery and installation of Single screw conveyor screen control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl motor drive VSD starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.75 kW screw conveyor	each	R
2	1.1 kW screw conveyor	each	R
3	2.2 kW screw conveyor	each	R
4	3 kW screw conveyor	each	R
5	4 kW screw conveyor	each	R

3.1.12. **Supply, delivery and installation of Single screw conveyor screen control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl motor drive soft starters ratings in the table below:**

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.75 kW screw conveyor	each	R
2	1.1 kW screw conveyor	each	R
3	2.2 kW screw conveyor	each	R
4	3 kW screw conveyor	each	R
5	4 kW screw conveyor	each	R

3.1.13. **Supply, delivery and installation of Single Blower control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl motor drive VSD starters ratings in the table below:**

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	1.5 kW Blower	each	R
2	7.5 kW Blower	each	R
3	11 kW Blower	each	R
4	15 kW Blower	each	R
5	400 kW Blower	each	R

3.1.14. Supply, delivery and installation of Single Blower control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl motor drive soft starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	1.5 kW Blower	each	R
2	7.5 kW Blower	each	R
3	11 kW Blower	each	R
4	15 kW Blower	each	R
5	400 kW Blower	each	R

3.1.15. Supply, delivery and installation of Single Compressors control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl motor drive DOL starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	5.5 kW Compressor	each	R
2	7.5 kW Compressor	each	R
3	15 kW Compressor	each	R
4	30 kW Compressor	each	R

3.1.16. Supply, delivery and installation of Single Compressors control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl motor drive VSD starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	5.5 kW Compressor	each	R
2	7.5 kW Compressor	each	R
3	15 kW Compressor	each	R
4	30 kW Compressor	each	R

3.1.17. Supply, delivery and installation of Single Compressors control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl motor drive soft starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	5.5 kW Compressor	each	R
2	7.5 kW Compressor	each	R
3	15 kW Compressor	each	R
4	30 kW Compressor	each	R

3.1.18. Supply, delivery and installation of Single Sediment Tank control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive DOL starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Motor	each	R

2	0.75 kW Motor	each	R

3.1.19. Supply, delivery and installation of Single Sediment Tank control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive VSD starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Motor	each	R
2	0.75 kW Motor	each	R

3.1.20. Supply, delivery and installation of Single Sediment Tank control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive soft starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Motor	each	R
2	0.75 kW Motor	each	R

3.1.21. Supply, delivery and installation of Single Grid removal control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive DOL starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Motor	each	R
2	0.75 kW Motor	each	R

3.1.22. Supply, delivery and installation of Single Grid removal control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive VSD starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Motor	each	R
2	0.75 kW Motor	each	R

3.1.23. **Supply, delivery and installation of Single Grid removal control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive soft starters ratings in the table below:**

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.55 kW Motor	each	R

2	0.75 kW Motor	each	R

3.1.24. Supply, delivery and installation of Single Aerator control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive DOL starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	37 kW Motor	Sum	R
2	55 kW Motor	Sum	R
3	75 kW Motor	Sum	R

3.1.25. Supply, delivery and installation of Single Aerator control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive VSD starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	37 kW Motor	Sum	R
2	55 kW Motor	Sum	R
3	75 kW Motor	Sum	R

3.1.26. Supply, delivery and installation of Single Aerator control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive soft starters ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	37 kW Motor	Sum	R
2	55 kW Motor	Sum	R
3	75 kW Motor	Sum	R

3.1.27. Supply, delivery and installation VSD inside new Motor Control Panel cubicles for ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.18 kW Motor	each	R
2	0.5 kW Motor	each	R
3	0.55 kW Motor	each	R
4	0.75 kW Motor	each	R
5	1.1 kW Motor	each	R

6	1.5 kW Motor	each	R
7	2.2 kW Motor	each	R
8	3 kW Motor	each	R
9	4 kW Motor	each	R
10	5.5 KW Motor	each	R
11	7,5 kW Motor	each	R
12	8.5 kW Motor	each	R
13	11 kW Motor	each	R
14	12 kW Motor	each	R
15	15 kW Motor	each	R
16	18.5 kW Motor	each	R
17	22 kW Motor	each	R
18	30 kW Motor	each	R
19	37 kW Motor	each	R
20	45 kW Motor	each	R
21	55 kW Motor	each	R
22	75 kW Motor	each	R
23	90 kW Motor	each	R
24	132 kW Motor	each	R
25	315 kW Motor	each	R
26	400 kW Motor	each	R

3.1.28. Supply, delivery and installation of input reactor (choke) for VSD inside new Motor Control Panel cubicles for ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.18 kW Motor	each	R
2	0.5 kW Motor	each	R
3	0.55 kW Motor	each	R
4	0.75 kW Motor	each	R
5	1.1 kW Motor	each	R
6	1.5 kW Motor	each	R
7	2.2 kW Motor	each	R
8	3 kW Motor	each	R

9	4 kW Motor	each	R
10	5.5 KW Motor	each	R
11	7,5 kW Motor	each	R
12	8.5 kW Motor	each	R
13	11 kW Motor	each	R
14	12 kW Motor	each	R
15	15 kW Motor	each	R
16	18.5 kW Motor	each	R
17	22 kW Motor	each	R
18	30 kW Motor	each	R
19	37 kW Motor	each	R
20	45 kW Motor	each	R
21	55 kW Motor	each	R
22	75 kW Motor	each	R
23	90 kW Motor	each	R
24	132 kW Motor	each	R
25	315 kW Motor	each	R
26	400 kW Motor	each	R

3.1.29. Supply, delivery and installation of Output reactor (choke) for VSD inside new Motor Control Panel cubicles for ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.18 kW Motor	each	R
2	0.5 kW Motor	each	R
3	0.55 kW Motor	each	R
4	0.75 kW Motor	each	R
5	1.1 kW Motor	each	R
6	1.5 kW Motor	each	R
7	2.2 kW Motor	each	R
8	3 kW Motor	each	R
9	4 kW Motor	each	R
10	5.5 KW Motor	each	R
11	7,5 kW Motor	each	R

12	8.5 kW Motor	each	R
13	11 kW Motor	each	R
14	12 kW Motor	each	R
15	15 kW Motor	each	R
16	18.5 kW Motor	each	R
17	22 kW Motor	each	R
18	30 kW Motor	each	R
19	37 kW Motor	each	R
20	45 kW Motor	each	R
21	55 kW Motor	each	R
22	75 kW Motor	each	R
23	90 kW Motor	each	R
24	132 kW Motor	each	R
25	315 kW Motor	each	R
26	400 kW Motor	each	R

3.1.30. Supply, delivery and installation for soft starter equipment type inside new Motor Control Panel cubicles for ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	3 kW motor	each	R
2	7.5 kW motor	each	R
3	15 kW motor	each	R
4	30 kW motor	each	R
5	37 kW motor	each	R
6	55 kW motor	each	R
7	75 kW motor	each	R
8	90 kW motor	each	R
9	132 kW motor	each	R
10	260 kW motor	each	R

3.1.31. Supply and delivery set of three ultra-rapid fuses for all VSD / Soft Starter equipment installed in MCC panel ratings in the table below:

Item	Description	Unit Of Measure	Rate (VAT INCLUSIVE) R
1	0.18 kW Motor	each	R
2	0.5 kW Motor	each	R
3	0.55 kW Motor	each	R
4	0.75 kW Motor	each	R
5	1.1 kW Motor	each	R
6	1.5 kW Motor	each	R
7	2.2 kW Motor	each	R
8	3 kW Motor	each	R
9	4 kW Motor	each	R
10	5.5 KW Motor	each	R
11	7,5 kW Motor	each	R
12	8.5 kW Motor	each	R
13	11 kW Motor	each	R
14	12 kW Motor	each	R
15	15 kW Motor	each	R
16	18.5 kW Motor	each	R
17	22 kW Motor	each	R
18	30 kW Motor	each	R
19	37 kW Motor	each	R
20	45 kW Motor	each	R
21	55 kW Motor	each	R
22	75 kW Motor	each	R
23	90 kW Motor	each	R
24	132 kW Motor	each	R
25	315 kW Motor	each	R
26	400 kW Motor	each	R

3.1.32. Supply, delivery and installation of Moulded case circuit breaker complete with interconnecting tails, etc. installed inside MCC Panel, kiosk, etc ratings in the table below:

Item	Description	Unit Of Measure	

			Rate (VAT INCLUSIVE) **R**
1	300 to 630A 3 Pole 50kA Circuit Breaker.	each	R
2	300A 3 Pole 25kA Circuit Breaker.	each	R
3	250A 3 Pole 25kA Circuit Breaker.	each	R
4	150A 3 Pole 15kA Circuit Breaker.	each	R
5	100A 3 Pole 10kA Circuit Breaker.	each	R
6	80A 3 Pole 10kA Circuit Breaker.	each	R
7	63A 3 Pole 10kA Circuit Breaker.	each	R
8	40A 3 Pole 10kA Circuit Breaker.	each	R
9	40A 2 Pole 10kA Circuit Breaker.	each	R
10	20A 3 Pole 10kA Circuit Breaker.	each	R
11	20A 2 Pole 10kA Circuit Breaker.	each	R
12	80A 3 Pole 10kA Circuit Breaker.	each	R
13	63A 2 Pole 10kA Circuit Breaker.	each	R
14	20A 1 Pole 6kA Circuit Breaker.	each	R
15	16A 1 Pole 6kA Circuit Breaker.	each	R
16	10A 1 Pole 6kA Circuit Breaker.	each	R
17	3 Phase + N Class 2 surge protection (Dehn guard & Dehn Gap)	each	R
18	63A E/L Unit (3P + N)	each	R
19	63A E/L Unit (1P + N)	each	R

3.1.33. Supply, delivery and installation Single PLC / HMI control compartment complete with PLC and HMI equipment, I/O and communication cards, etc as specified with sufficient I/O modules as listed below:

Item	**Description**	**Unit Of Measure**	**Supply And Deliver Rate (Including VAT)**
1	Main Power supply (230VAC-24 VDC)	each	R
2	Main Power supply (24 VDC-24 VDC)	each	R
3	CPU Modbus Ethernet	each	R
4	Communication Module Ethernet Device Scanning	each	R
5	4 slot Backplane	each	R
6	6 slot Backplane	each	R
7	8 slot Backplane	each	R

8	12 slot Backplane	each	R
9	4-20 mA Ethernet Converter	each	R
10	Ethernet Manageable Switch 2 Fibre and 6 Copper	each	R
11	Ethernet Manageable Switch 2 Fibre and 24 Copper	each	R
12	Termination box- IP 20 rated polyester enclosures with hinged door and enough space to allow for a 25% extension	each	R
13	3.5" Touch Screen Panel HMI	each	R
14	12" Touch Screen Panel HMI	each	R
15	8 Channels AI	each	R
16	8 Channels AO	each	R
17	8 Channels DI	each	R
18	8 Channels DO	each	R
19	16 Channels AI	each	R
20	16 Channels AO	each	R
21	16 Channels DI	each	R
22	16 Channels DO	each	R
23	32 Channels AI	each	R
24	32 Channels AO	each	R
25	32 Channels DI	each	R
26	32 Channels DO	each	R
27	64 Channels DI	each	R
28	64 Channels DO	each	R
29	All PLC and auxiliary software	each	R
30	Certified system integrator training for one person	each	R

4. AUXILIARY ELECTRICAL EQUIPMENT

4.1. **Supply, delivery and installation of LV, PVCAS cable in trench or sleeve or cable tray ratings and sizes listed in the table below:**

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	120 mm² Cu x 4 Core cable.	m	R
2	95 mm² Cu x 4 Core cable.	m	R
3	70 mm² Cu x 4 Core cable.	m	R
4	70 mm² Single core insulated (Black) earth conductor	m	R
5	70 mm² Insulated Earth conductor for above	m	R
6	50 mm² Cu x 4 Core cable.	m	R
7	50 mm² Single core insulated (Black) earth conductor	m	R
8	50 mm² Insulated Earth conductor for above	m	R
9	50 mm² Single core insulated (Black) earth conductor	m	R
10	50 mm² 3 Core Copper cable.	m	R
11	35 mm² Cu x 4 Core cable.	m	R
12	25 mm² Cu x 4 Core cable.	m	R
13	25 mm² Insulated Earth conductor for above	m	R
14	25 mm² Single core insulated (Black) earth conductor	m	R
15	25 mm² 3 Core Copper cable.	m	R
16	16 mm² Cu x 4 Core cable.	m	R
17	16 mm² Insulated Earth conductor for above	m	R
18	10 mm² Cu x 4 Core cable.	m	R
19	4.1.1. 10 mm² Insulated Earth conductor for above	m	R
20	10 mm² 3 Core Copper cable.	m	R
21	6 mm² Cu x 4 Core cable.	m	R
22	6 mm² Insulated Earth conductor for above	m	R
23	4 mm² Cu x 4 Core cable.	m	R
24	4 mm² Insulated Earth conductor for above	m	R
25	4 mm² 3 Core Copper cable.	m	R

26	2, 5 mm² Cu x 4 Core cable.	m	R
27	2,5 mm² Insulated Earth conductor for above	m	R
28	2, 5 mm² 3 Core Copper cable.	m	R
29	2, 5 mm² 2 Core Copper cable.	m	R
30	1, 5 mm² Cu x 4 Core cable.	m	R
31	1,5 mm² Insulated Earth conductor for above	m	R
32	1, 5 mm² 3 Core Copper cable.	m	R
33	1, 5 mm² 2 Core Copper cable.	m	R
34	Make provision for the scan of concrete floor slabs and walls for cable routes (2 Full Days)	day	R
35	Make provision for the re-routing of existing cables	m	R

4.2. Supply, delivery and installation of Dura cast resin through joint in LV, PVCAS cable ratings and sizes listed in the table below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	120 mm² Cu x 4 Core cable.	m	R
2	95 mm² Cu x 4 Core cable.	m	R
3	70 mm² Cu x 4 Core cable.	m	R
4	70 mm² Insulated Earth conductor for above	m	R
5	50 mm² Cu x 4 Core cable.	m	R
6	50 mm² Insulated Earth conductor for above	m	R
7	50 mm² Single core insulated (Black) earth conductor	m	R
8	50 mm² 3 Core Copper cable.	m	R
9	35 mm² Cu x 4 Core cable.	m	R
10	25 mm² Cu x 4 Core cable.	m	R
11	25 mm² Insulated Earth conductor for above	m	R
12	25 mm² Single core insulated (Black) earth conductor	m	R
13	25 mm² 3 Core Copper cable.	m	R
14	16 mm² Cu x 4 Core cable.	m	R
15	16 mm² Insulated Earth conductor for above	m	R
16	10 mm² Cu x 4 Core cable.	m	R
17	10 mm² Insulated Earth conductor for above	m	R
18	10 mm² 3 Core Copper cable.	m	R
19	6 mm² Cu x 4 Core cable.	m	R
20	6 mm² Insulated Earth conductor for above	m	R
21	4 mm² Cu x 4 Core cable.	m	R
22	4 mm² Insulated Earth conductor for above	m	R
23	4 mm² 3 Core Copper cable.	m	R
24	2, 5 mm² Cu x 4 Core cable.	m	R
25	2,5 mm² Insulated Earth conductor for above	m	R
26	2, 5 mm² 3 Core Copper cable.	m	R
27	2, 5 mm² 2 Core Copper cable.	m	R
28	1, 5 mm² Cu x 4 Core cable.	m	R
29	1,5 mm² Insulated Earth conductor for above	m	R

30	1, 5 mm² 3 Core Copper cable.	m	R
31	1, 5 mm² 2 Core Copper cable.	m	R

4.3. Supply, delivery and installation of cable terminations and connections for LV, PVCAS cables at kiosk /MCC panel / motors / equipment using brass cable gland, brass locknut, neoprene rubber shroud and crimp lugs in line with applicable legislation and industrial good practices. Ratings and sizes listed in the table below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	120 mm² Cu x 4 Core cable (Indoor)	m	R
2	95 mm² Cu x 4 Core cable. (Indoor)	m	R
3	70 mm² Cu x 4 Core cable. (Indoor)	m	R
4	70 mm² Insulated Earth conductor for above(Indoor)	m	R
5	50 mm² Cu x 4 Core cable. (Indoor)	m	R
6	50 mm² Insulated Earth conductor for above(Indoor)	m	R
7	50 mm² Single core insulated (Black) earth conductor(Indoor)	m	R
8	50 mm² 3 Core Copper cable. (Indoor)	m	R
9	35 mm² Cu x 4 Core cable. (Indoor)	m	R
10	25 mm² Cu x 4 Core cable. (Indoor)	m	R
11	25 mm² Insulated Earth conductor for above**(Indoor)**	m	R
12	25 mm² Single core insulated (Black) earth conductor(Indoor)	m	R
13	25 mm² 3 Core Copper cable. (Indoor)	m	R
14	16 mm² Cu x 4 Core cable. (Indoor)	m	R
15	16 mm² Insulated Earth conductor for above(Indoor)	m	R
16	10 mm² Cu x 4 Core cable. (Indoor)	m	R
17	10 mm² Insulated Earth conductor for above(Indoor)	m	R
18	10 mm² 3 Core Copper cable. (Indoor)	m	R
19	6 mm² Cu x 4 Core cable. (Indoor)	m	R
20	6 mm² Insulated Earth conductor for above(Indoor)	m	R
21	4 mm² Cu x 4 Core cable. (Indoor)	m	R
22	4 mm² Insulated Earth conductor for above(Indoor)	m	R
23	4 mm² 3 Core Copper cable. (Indoor)	m	R

24	2, 5 mm² Cu x 4 Core cable. (Indoor)	m	R
25	2,5 mm² Insulated Earth conductor for above(Indoor)	m	R
26	2, 5 mm² 3 Core Copper cable. (Indoor)	m	R
27	2, 5 mm² 2 Core Copper cable. (Indoor)	m	R
28	1, 5 mm² Cu 4 Core cable. (Indoor)	m	R
29	1,5 mm² Insulated Earth conductor for above(Indoor)	m	R
30	1, 5 mm² 3 Core Copper cable. (Indoor)	m	R
31	1, 5 mm² 2 Core Copper cable. (Indoor)	m	R

4.4. Supply, delivery and installation of cable terminations and connections for overall screened, steel wire armoured, twisted pair type instrumentation cables at MCC panel / equipment / remote E-stop stations /Pratley or termination box using brass cable gland, brass locknut, neoprene rubber shroud and crimp lugs in line with applicable legislation and industrial good practices. Ratings and sizes listed in the table below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	1, 5 mm² X 1 pair	m	R
2	1, 5 mm² X 4 pair	m	R
3	1, 5 mm² X 8 pair	m	R
4	Terminate and connect instrumentation cables supplied with pressure / flow sensors, no flow / float Switches, PT 100 sensors, etc at MCC panel / junction box using compression type glands and crimp lugs.	sum	R

4.5. Supply, delivery and installation of cable terminations and connections for hard drawn (HD) bare copper earth wire laid in trench / sleeve /cable tray in line with applicable legislation and industrial good practices. Ratings and sizes listed in the table below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	50 mm²	m	R
2	35 mm²	m	R
3	25 mm²	m	R
4	16 mm²	m	R

5	6 mm²	m	R
6	4 mm²	m	R

4.6. Supply, delivery and installation of cable terminations and connections for Hard drawn (HD) bare copper earth wire terminated at kiosk / MCC panel / pump motor / Pratley or termination box in line with applicable legislation and industrial good practices. Ratings and sizes listed in the table below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	50 mm²	m	R
2	35 mm²	m	R
3	25 mm²	m	R
4	16 mm²	m	R
5	6 mm²	m	R
6	4 mm²	m	R
7	Main AMF / MCC earth consisting of approx 30 metre length of 70mm² PVC bare copper conductor installed in trench, 2 x 4,5 metre long earth spikes and 2 x earth spike markers.	Sum	R

4.7. Supply, delivery and installation of steel conduit with support fixings (saddles/couplings/ adaptors), cast in concrete, surface bed screed, fixed to wood, roof members suspended ceiling, steel, etc., run in roof space chased and/or fixed in brickwork including bend in line with applicable legislation and industrial good practices details and sizes listed in the table below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	40 mm Ø	m	R
2	32 mm Ø	m	R
3	25 mm Ø	m	R
4	20 mm Ø	m	R

4.8. Supply, delivery and installation of PVC conduit with support fixings (saddles/couplings/ adaptors), cast in concrete, surface bed screed, fixed to wood, roof members suspended ceiling, steel, etc., run in roof space chased and/or fixed in brickwork including bend in line with applicable legislation and industrial good practices details and sizes listed in the table below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	75 mm Ø	m	R
2	50 mm Ø	m	R
3	40 mm Ø	m	R
4	32 mm Ø	m	R
5	25 mm Ø	m	R
6	20 mm Ø	m	R

4.9. Supply, delivery and installation of steel conduit accessories, outlet boxes and cover plate to suit number, size or type of entries, fixed onto conduit and including fixing screws in line with applicable legislation and industrial good practices details and sizes listed in the table below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	100mm x 100mm x 50mm deep box (Flush)	each	R
2	100mm x 100mm x 50mm deep box (Surface)	each	R
3	100mm x 50mm x 50mm deep box (Flush)	each	R
4	100mm x 50mm x 50mm deep box (Surface)	each	R
5	65mm Round steel box	each	R
6	85mm x 130mm Fibreglass IP54 York box	each	R

4.10. Supply, delivery and installation, (Reticulation – Sleeves / Man Holes) PVC Sleeves including short lengths and jointing, laid in trench (trenching and backfilling measured elsewhere). PVC fittings with "Safe lock" seal ring joints in line with applicable legislation and industrial good practices details and sizes listed in the table below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	110 mm Diameter PVC sleeve [flush mount]	m	R
2	50 mm Diameter PVC sleeve [flush mount]	m	R

4.11. Supply, delivery and installation of surface mounted, weather and vandal proof instrumentation junction boxes rated IP 65 minimum, complete with all terminals, connectors, etc for all cable / conduit terminations in line with applicable legislation and industrial good practices details and sizes listed in the table below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	Typical pump (i.e. flow switch, PT 100's, Klixons, etc	each	R
2	Typical Mixer (seal fail, Klixons, etc)	each	R
3	Typical Screen (over torque, etc)	each	R
4	Sump (ultrasonic sensor, float switches, etc)	each	R
5	Three way, IP 68 EZEE-FIT Ex n Pratley No. 0 Instrumentation cable box, complete with Kwikblok mountings, Kwikblocks, etc. or similar	each	R

4.12. Supply, delivery and installation of 600 / 1000 V PVC insulated copper conductors wiring drawn into conduit / cable tray, including terminations, etc in line with applicable legislation and industrial good practices details and sizes listed in the table below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	4 mm²	m	R
2	2,5 mm²	m	R

4.13. Supply, delivery and installation of weatherproof light switches and socket outlets in line with applicable legislation and industrial good practices details and sizes listed in the table below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	One way light switch	each	R
2	Two way light switch	each	R
3	One way socket outlet old standards 16 Amp 3-pin including new SANS 164-2-ZA Plug	each	R
4	Two way One way socket outlet old standards 16 Amp 3-pin including new SANS 164-2-ZA Plug	each	R

4.14. Supply, delivery and installation of indoor light switches and socket outlets in line with applicable legislation and industrial good practices details and sizes listed in the table below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	One way light switch	each	R
2	Two way light switch	each	R

3	One way socket outlet old standards 16 Amp 3-pin including new SANS 164-2-ZA Plug	each	R
4	Two way One way socket outlet old standards 16 Amp 3-pin including new SANS 164-2-ZA Plug	each	R

4.15. Supply, delivery and installation of trunking/cable tray complete with fixings, example hangers, caddy clips, nuts, washers, rivets, splices, Tee- pieces, 4 way cross overs, elbows, clamps, anchors in line with applicable legislation and industrial good practices details and sizes listed in the table below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	16 x 16mm PVC white compact mini-trunking.	Per meter	R
2	40 x 25mm PVC white compact mini-trunking.	Per meter	R

4.16. Supply, delivery and installation of Cable Tray - Hot dipped galvanised steel mesh cable tray installed against wall / floor. Item to include all brackets, stainless steel mounting screws / bolts in line with applicable legislation and industrial good practices details and sizes listed in the table below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	400mm wide	m	R
2	200mm wide	m	R
3	100mm wide	m	R
4	50mm wide	m	R
5	Stainless steel cable marking tags minimum size 9.5 mm wide. With a minimum of 25 characters per tag	Each	R

4.17. Supply, delivery and installation of Fibre Optic, Data cables and auxiliary equipment in line with applicable legislation and industrial good practices details and sizes listed in the table below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	4-Core Fibre Optic Cable (Multi Mode)	m	R
2	Splicing of 4-Core Fibre Optic Cable (Multi Mode)	each	R
3	4-Core Fibre Optic Cable (Single Mode)	m	R
4	Splicing of 4-Core Fibre Optic Cable (Single Mode)	each	R
5	Cat5 networking cable, including splicing etc.	m	R

6	Cut off old RJ45 module in existing power skirting and re-install (Crimp) new RJ45 module in new power skirting. Complete	each	R
7	Remove data, communication, power cables and wires from Power skirting and re-install in new power skirting (Measured per m power skirting).	m	R
8	Re-commission entire data installation to ensure all the data points is in a working condition.	Sum	R
9	Re-label entire data installation to ensure all the data points are labelled.	each	R

4.18. Supply, delivery and installation of light fittings and auxiliary equipment in line with applicable legislation and industrial good practices details and sizes listed in the table below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	1200 x 600mm Recessed	each	R
2	Recessed downlighter	each	R
3	Cove Lighting (strip light c/w splices, etc.)	m	R
4	Spot light (on surface mounted track)	each	R
5	Wall mounted Bulkhead	each	R
6	Footlight (300mm AFFL)	each	R
7	Open channel 2 tube fluorescent fitting	each	R
8	Ceiling mounted fitting	each	R
9	Flood light	each	R
10	Bollard light	each	R
11	Open channel 1 tube fluorescent fitting	each	R
12	Emergency Exit fitting	each	R
13	Motion Detection Sensors	each	R
14	230V surface mounted track c/w splices, brackets, etc.	m	R
15	IP 65, enclosed fluorescent type luminaire similar or approved equal to the Lascon Corolite 10N type with 2x 58W lamps or similar	each	R
16	150 W HPS luminaires with internal eyelids, glass diffusers and decorative skirt similar or approved equal to Bekanova type or similar.	each	R
17	Supply, delivery and installation of a Photo cell	each	R

4.19. Supply, delivery and installation of, main earthing system including earthing & lightning Protection as well as all auxiliary equipment and sundry materials in line with applicable legislation and industrial good practices details and sizes listed in the table below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	70 mm² earth wire	m	R
2	70 mm² earth wire ends lugged	each	R
3	70 mm² earth wire ends clamped at earth rods	each	R
4	1,83 m. long earth electrodes	each	R
5	Earth test points, incl. Copper to aluminium joints	each	R
6	CADWELD conductor joints	each	R
7	Bond earth wire to building reinforcement	each	R
8	500 x 50 x 3mm earth bar c/w accessories	each	R
9	300 x 50 x 3mm earth bar c/w accessories	each	R

4.20. Supply, delivery and installation of, fire detection system as well as all auxiliary equipment and sundry materials in line with applicable legislation and industrial good practices details and sizes listed in the table below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	Supply and install Addressable Fire Control Panel (1 loop) 230V, EN54 approved	each	R
2	Analogue Addressable - 2 loop analogue control panel, 230V, EN54 approved	each	R
3	Analogue Addressable - 4 loop analogue control panel, 230V, EN54 approved	each	R
4	Supply and install System Passive mimic diagram (A4 framed)	each	R
5	Supply and install 12VDC 9Ah Battery	each	R
6	Supply and install Optical Smoke Detectors	each	R
7	Supply and install Optical Heat Detectors	each	R
8	Supply and install Multi-criteria: -Heat and smoke combination Detector	each	R
9	Supply and install Optical Flame Detectors	each	R
10	Supply and install manual call points	each	R

11	Addressable Beacon/Sounder Inc. Base	each	R
12	Supply and install Loop 24VDC Strobe Siren combination/ beacon.	each	R
13	Supply and install Emergency break glass unit/manual call point	each	R
14	Fire resistant cable- PH120 (Rated for 120 minutes) and accessories	m	R
15	Supply and install Input-Output unit I\O unit)	each	R
16	24VDC 2A Power Supply - Complete	each	R
17	25mm 4 way round box complete with lid	each	R
18	Supply and install 5kg CO2 fire extinguisher (with accessories)	each	R
19	Test and Commission the complete Fire Detection installation	Sum	R
20	Labelling of complete Fire Detection system	each	R
21	System Wiring Diagrams	each	R
22	System Logbook and Holder	each	R
23	System Zone and Layout Diagrams	each	R
24	Independent Inspection and test - CoC	each	R
25	12 Month Guarantee	each	R

4.21. Test and commissioning in line with applicable legislation and industrial good practices details and sizes listed in the table below:

Item	Description	Unit Of Measure	Supply And Deliver Rate (Including VAT)
1	Complete installation, programming and commissioning of MCC panels for all equipment supplied (including panel mount ventilating unit, level meters, PLC and VSD's as specified on data sheet and cable connections) and incorporating nearby distribution boards into new MCC panel	sum	R
2	Maintenance and servicing of equipment during defects liability period (12 Months)	each	R

Description	Amount (incl. VAT)
*Provisional Sum subject to approval	R9 000 000.00
Administrative fee	R500.00

a. Provisional sum has been included in the pricing schedule and will only be applicable where related goods are required that are not catered for in the pricing schedule.
b. Items will be on an as-and-when-required basis, subject to prior approval.
c. ERWAT may request a quote from the appointed bidder/s (where applicable) for the items/services required.
d. ERWAT reserves the right to verify market-related costs, which includes the sourcing of alternative quotation for the items/services in relation to actual cost verification.
e. Payments for such items/services will be on actuals, plus the administrative fee as listed in the pricing schedule. Please note that the administrative fee will only be applicable to items not listed in the pricing schedule, limited to per order/ per job, which will be deducted from the provisional sum.
f. The supporting documentation that must be supplied is the quotation from the appointed company or third-party supplier.
g. The provisional sum value is valid for the total contract period.

NB. Warranty will take effect from the date of handover.

I, the undersigned, the authorised designated signatory, undertake to carry out the works in accordance with the conditions of contract, the specifications for the tender sum as indicated and within the time for completion as specified in the Contract.

BIDDER'S name: _____

BIDDER'S signature: _____ Date: _____

Name of Firm: _____

Address _____

_____

_____

Telephone number: _____

Fax Number: _____

Cellular number: _____

E Mail Address: _____

LIST OF IMPORTED ITEMS

Contractors to list all items which are not solely South African manufactured.

ITEM	DESCRIPTION	R VALUE	ROE
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ERWAT

EXCELLENCE IN WATER CARE

RE- TENDER FOR THE APPOINTMENT OF PANEL SERVICE PROVIDER/S IN A FRAMEWORK CONTRACT FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES FOR VARIOUS SITES AT EKURHULENI WATER CARE WORKS ON 'AS AND WHEN REQUIRED BASIS' FOR A PERIOD OF 36 MONTHS

C3 SCOPE OF WORK

DETAILED CONTENTS (VOLUME 3)

PART C3 SCOPE OF WORKS

C3.1 DESCRIPTION OF THE WORKS IS DIVIDED INTO FOUR SECTIONS

C3.1.1 BACKGROUND

The Ekurhuleni Water Care Company (ERWAT) manages 19 water care works which receive both domestic and industrial wastewater. The design average dry weather capacity of the individual works varies from 1 Mℓ/day to a s high as 170 Mℓ/day. The Electrical infrastructure in the Water Care Works require continuous maintenance, replacement and improvement in order to provide reliable and optimum operation of the Water Care Works; therefore ERWAT is seeking to establish a Framework Agreement with service providers that have extensive experience in the design, manufacturing, installation, and maintenance of Electrical Distribution Switchboard and Motor Control Centres, that can deliver a high-quality and reliable solution for ERWAT on an "as and when" basis for a period of thirty-six months.

The Framework Agreement shall follow the standard definition and conditions of Framework Agreements as contained in the National Treasury documents for Infrastructure Procurement and Delivery Management (SIPDM). The Employer does not bind itself to the Service Providers to issue a minimum or maximum quantum of work/services or fee value of work/services during the term of the Framework Agreement, therefore when the Framework Agreement is awarded or concluded it shall have a zero-contract price or zero-volume of specified works/services attached. The Service Provider shall note that the intention of the Employer is to set up a Framework Agreement for a specific contract term to ensure that as-and-when the Employer requires services scoped per this contract; the Service Provider is in position, without delay to render such services.

This tender will also be dependent on the availability of the Capital Budget, note should be taken that only the tendered rates which have been agreed between ERWAT and Service Provider shall constitute the award.

C3.1.2 GENERAL AND MANDATORY REQUIREMENTS

C3.1.2.1 GENERAL REQUIREMENT

i. Site induction training has to be completed before any work can be undertaken. (both general and site specific)
ii. The contractor must comply with the ERWAT Permit to Work and Safe operation procedures.
iii. All the relevant work permits and authorization has to be obtained before any work can be under taken.
iv. All work done and equipment supplied has to be in accordance with the applicable standards as listed in this document.
v. No work shall be undertaken without an official purchase order or written confirmation via e-mail in case of an emergency from the designated ERWAT representative.
vi. No equipment may be removed from site without written permission from the relevant plant manager.
vii. The installation of any equipment shall include the putting back into operation, testing, special testing (if required) and adjustments on the equipment.
viii. A project and quality control plan will be required for any installation of equipment.

ix. All the required tools, consumables, testing facilities, and other requirements to perform the work as per the Contract shall be provided by the contractor.
x. ERWAT reserves the right to hold the contractor responsible for any equipment that will be damaged due to the contractor's negligence or poor workmanship.
xi. ERWAT reserves the right to award this contract to one or more bidders.
xii. The Contract is for a duration **of Thirty-Six 36 (No.) Calendar Months**.
xiii. Prices shall be **FIXED and FIRM** for the first 12 months of the Contract. Price increments will be based on **CPI** annually on the anniversary of this tender
xiv. All new equipment and newly supplied parts shall carry **a minimum** twelve (12 No.) calendar months **WARRANTY** from date of acceptance by ERWAT representative
xv. Key staff complement

N.B. Please note that the majority of exiting equipment bases comprised of the two manufacturers listed, Schneider electric and Siemens. To ensure connectivity operability and maintainability all sites with exiting equipment must be supplied with the same as exiting equipment. The similar alternative equipment will be considered where this requirement is not applicable.

Also note. In relation to the SANS 10142-1 system components can only be replaced with identical type and rated components any deviation must be approved by original equipment manufacturers.

C3.1.3 EXTENT OF THE WORKS

1. INTRODUCTION

The main focus of the scope is to install new Motor Control Centres, Programmable Logic Controllers (PLC), Variable Speed Drives (VSD), fibre optic network, Supervisory Control and Data Acquisition (SCADA) system to enable full automatic control, remote monitoring and data acquisition. The design and manufacturing of the motor control centers must be done in accordance with the detailed requirements contained in this document in alignment with the site requirements. The bidder must take into account all the factors including the ambient temperature in the building and any other contributing factors. Any challenges in relation to the overheating of equipment including during the defects liability period will be the bidders responsibility.

2. CURRENT/EXISTING INFRASTRUCTURE CONDITIONS

The current infrastructure conditions in the 19 Water Care Works are that most of the electrical infrastructure mainly operates on either Schneider Technology or Simens Technology. Based on our combined studies and Erwat experience including the shared experienced in the engineering space, it is critical to consider the compatibility of technologies during maintenance or replacement these components of the electric infrastructure (e.g., plant automation is sensitive to the compatibility of software across the different technology providers). This specification is designed around the mainly existing technologies, and all other alternative technologies shall be expected similar or compatible with the existing technologies.

3. TECHNICAL SCOPE OF WORK FOR MOTOR CONTROL CENTRES

The Scope of Work for this Contract is (but not limited to): The Contractor shall perform all work and furnish labour, equipment and materials, construction plant, temporary works (including site welfare and temporary supplies), equipment, auxiliaries and accessories, special tools, spare parts and performing all operations and work required for the design, engineering, material selection, manufacturing, inspection and testing, delivery at site including packing, forwarding, loading, transportation to site, transportation from Supplier's premises to construction site, erection, finishing, painting, testing commissioning, performance guarantee tests with all materials, tools.

The manufacturing of the Motor Control Centres (MCC), Electrical Control Panels must comply with the certification listed below in a and b, as detailed in the mandatory requirements of this tender. ERWAT reserves the right to verify this compliance during the contract period. Any changes in the supplier of the equipment must be approved by ERWAT and be comply to the listed requirements.

a. SABS Certification (Test Report)
- Apparatus: Main Busbars.
- With, the test have been carried out in accordance with SANS 60439-1 /IEC 60439-1 or SANS 61439-1&2/IEC 61439-1&2
- Low-voltage switchgear and control gear assemblies

b. SABS Certification (Test Report)
- Apparatus: Low Voltage Assembly
- With, the test have been carried out in accordance with SANS 60439-1 /IEC 60439-1 or SANS 61439-1&2/IEC 61439-1&2
- Low-voltage switchgear and control gear assemblies

The standards and specification listed below but not limited will be implement during the contract period where applicable. The latest version of the listed standards and specification will be applicable in the event that any revisions or updates is implemented at the time of award or during the tender period. No equipment that is found to be non-compliant to any of the listed standards or any other regulatory of legislative standard will be accepted.

3.2 REFERENCE STANDARDS AND SPECIFICATIONS

In general work and materials shall be in accordance with the latest practice and in particular in accordance with the latest revision of the following specifications, and any amendments thereto, the SANS specification taking precedence:

The standards and specification listed below but not limited will be implement during the contract period where applicable. The latest version of the listed standards and specification will be applicable in the event that any revisions or updates is implemented at the time of award or during the tender period. No equipment that is found to be non-compliant to any of the listed standards or any other regulatory of legislative standard will be accepted.

- SANS 10142-1 The wiring of premises Part 1: Low-voltage installations

- IEC 60364-4-44, Low-voltage electrical installations – Part 4-44: Protection for safety – Protection against voltage disturbances and electromagnetic disturbances.
- IEC 60664-1, Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests.
- IEC 61557-8, Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. – Equipment for testing, measuring or monitoring of protective measures – Part 8: Insulation monitoring devices for IT systems.
- IEC 62116, Utility-interconnected photovoltaic inverters – Test procedure of islanding prevention measures.
- SANS 164-0, Plug and socket-outlet systems for household and similar purposes for use in South Africa – Part 0: General requirements.
- SANS 164-1, Plug and socket-outlet systems for household and similar purposes for use in South Africa – Part 1: Two-pole and earth, 16 A 250 V a.c. system.
- SANS 164-2, Plug and socket-outlet systems for household and similar purposes for use in South Africa – Part 2: Two-pole and earth and 2 pin (Class II), 16 A 250 V a.c. system.
- SANS 164-2-1, Plug and socket-outlet systems for household and similar purposes for use in South Africa – Part 2-1: Two-pole and earth, 16 A 250 V a.c. partially dedicated system.
- SANS 164-2-2, Plug and socket-outlet systems for household and similar purposes for use in South Africa – Part 2-2: Two-pole and earth, 16 A 250 V a.c. fully dedicated system.
- SANS 164-3, Plug and socket-outlet systems for household and similar purposes for use in South Africa – Part 3: Two-pole and earth, 6 A 250 V a.c. system.
- SANS 164-4, Plug and socket-outlet systems for household and similar purposes for use in South Africa – Part 4: Two-pole and earth, 16A 250V a.c. dedicated system.
- SANS 164-5, Plug and socket-outlet systems for household and similar purposes for use in South Africa – Part 5: Two-pole, 2,5 A 250 V a.c. system.
- SANS 10142-1:2021 Edition 3 SANS 164-6, Plug and socket-outlet systems for household and similar purposes for use in South Africa – Part 6: Two-pole (Class II), 16 A 250 V a.c. system.
- SANS 337, Plugs and sockets outlets for use in the fixed installation of stoves.
- SANS 529, Heat-resisting wiring cables.
- SANS 556-1:2018, Low-voltage switchgear – Part 1: Circuit-breakers.
- SANS 556-2-1, Low-voltage switchgear – Part 2-1: Earth leakage circuit-breakers.
- SANS 556-2-2, Low-voltage switchgear – Part 2-2: Earth leakage switches.
- SANS 556-2-5, Low-voltage switchgear – Part 2-5: Earth leakage switches – Switches that incorporate residual current protection.
- SANS 780, Distribution transformers.
- SANS 950, Non-metallic conduit fittings for use in electrical installations.
- SANS 1012, Electric light dimmers (Metric units).
- SANS 1019, Standard voltages, currents and insulation levels for electricity supply.
- SANS 1063, Earth rods, couplers and connections.
- SANS 1085, Metallic wall outlet boxes for the enclosure of electrical accessories.
- SANS 1186-1, Symbolic safety signs – Part 1: Standard signs and general requirements.
- SANS 1195, Busbars.
- SANS 1213, Mechanical cable glands.
- SANS 1411-1, Materials of insulated electric cables and flexible cords – Part 1: Conductors.
- SANS 1418-1, Aerial bundled conductor systems – Part 1: Cores.
- SANS 1433-1, Electrical terminals and connectors – Part 1: Terminal blocks having screw and screwless terminals.
- SANS 1433-2, Electrical terminals and connectors – Part 2: Flat push-on connectors.
- SANS 1507-1, Electric cables with extruded solid dielectric insulation for fixed installations (300/500 V to 1 900/3 300 V) – Part 1: General.

- SANS 1507-2, Electric cables with extruded solid dielectric insulation for fixed installations (300/500 V to 1 900/3 300 V) – Part 2: Wiring cables.
- SANS 1507-3, Electric cables with extruded solid dielectric insulation for fixed installations (300/500 V to 1 900/3 300 V) – Part 3: PVC Distribution cables.
- SANS 10142-1:2021 Edition 3 SANS 1507-4, Electric cables with extruded solid dielectric insulation for fixed installations (300/500 V to 1 900/3 300 V) – Part 4: XLPE Distribution cables.
- SANS 1507-5, Electric cables with extruded solid dielectric insulation for fixed installations (300/500 V to 1 900/3 300 V) – Part 5: Halogen-free distribution cables.
- SANS 1507-6, Electric cables with extruded solid dielectric insulation for fixed installations (300/500 V to 1 900/3 300 V) – Part 6: Service cables.
- SANS 1524-1, Electricity payment systems – Part 1: Payment meters.
- SANS 1574-3, Electric flexible cables with solid extruded dielectric insulation – Part 3: PVCinsulated cables for industrial use.
- SANS 1574-5, Electric flexible cables with solid extruded dielectric insulation – Part 5: Rubberinsulated cables for industrial use.
- SANS 1619, Small power distribution units (ready-boards) for single-phase 230 V service connections.
- SANS 1777, Photoelectric control units for lighting (PECUs). SANS 1799, Watt-hour meters – AC electronic meters for active energy.
- SANS 1973-1, Low-voltage switchgear and control gear ASSEMBLIES – Part 1: Type-tested ASSEMBLIES with stated deviations and a rated short-circuit withstand strength above 10 kA.
- SANS 1973-3, Low-voltage switchgear and control gear ASSEMBLIES – Part 3: Safety of ASSEMBLIES with a rated prospective short-circuit current of up to and including 10 kA.
- SANS 10086-1, The installation, inspection and maintenance of equipment used in explosives atmospheres – Part 1: Installations including surface installations on mines.
- SANS 10087-1, The handling, storage, distribution and maintenance of liquefied petroleum gas in domestic, commercial, and industrial installations – Part 1: Liquefied petroleum gas installations involving gas storage containers of individual water capacity not exceeding 500 L and a combined water capacity not exceeding 3 000 L per installation SANS 10089-2, The petroleum industry – Part 2: Electrical and other installations in the distribution and marketing sector.
- SANS 10108, The classification of hazardous locations and the selection of equipment for use in such locations. SANS 10142-1-1, The wiring of premises – Part 1-1: Low-voltage installation in medical locations.
- SANS 10142-1:2021 Edition 3
- SANS 10198-4, The selection, handling and installation of electric power cables of rating not exceeding 33 kV – Part 4: Current ratings.
- SANS 10198-10, The selection, handling and installation of electric power cables of rating not exceeding 33 kV – Part 10: Jointing and termination of paper-insulated cables.
- SANS 10198-11, The selection, handling and installation of electric power cables of rating not exceeding 33 kV – Part 11: Jointing and termination of screened polymeric-insulated cables.
- SANS 10199, The design and installation of earth electrodes.
- SANS 10313, Protection against lightning – Physical damage to structures and life hazard.
- SANS 50196-1/EN 196-1, Methods of testing cement – Part 1: Determination of strength.
- SANS 50196-2/EN 196-2, Methods of testing cement – Part 2: Chemical analysis of cement.
- SANS 60079-0/IEC 60079-0, Explosive atmospheres – Part 0: General requirements.
- SANS 60079-14/IEC 60079-14, Explosive atmospheres – Part 14: Electrical installations design, selection and erection. SANS 60269-1/IEC 60269-1, Low-voltage fuses – Part 1: General requirements.
- SANS 60309-1/IEC 60309-1, Plugs, socket-outlets and couplers for industrial purposes – Part 1: General requirements.
- SANS 60309-2/IEC 60309-2, Plugs, socket-outlets and couplers for industrial purposes – Part 2: Dimensional interchangeability requirements for pin and contact-tube accessories.

- SANS 60364-7-712/IEC 60364-7-712, Low voltage electrical installations – Part 7-712: Requirements for special installations or locations – Solar photovoltaic (PV) power supply systems.
- SANS 60439-1 /IEC 60439-1 or SANS 61439-1&2/IEC 61439-1&2/IEC 60439-1, Low-voltage switchgear and control gear assemblies – Part 1: Typetested and partially type-tested assemblies.
- SANS 60529/IEC 60529, Degrees of protection provided by enclosures (IP Code).
- SANS 60570/IEC 60570, Electrical supply track systems for luminaires.
- SANS 60598-2-18/IEC 60598-2-18, Luminaires – Part 2: Particular requirements – Section 18: Luminaires for swimming pools and similar applications.
- SANS 60598-2-23/IEC 60598-2-23, Luminaires – Part 2-23: Particular requirements – Extra low voltage lighting systems for filament lamps.
- SANS 60601-1/IEC 60601-1, Medical electrical equipment – Part 1: General requirements for basic safety and essential performance.
- SANS 10142-1:2021 Edition 3 SANS 60669-1/IEC 60669-1, Switches for household and similar fixed-electrical installations – Part 1: General requirements.
- SANS 60669-2-1/IEC 60669-2-1, Switches for household and similar fixed electrical installations – Part 2-1: Particular requirements – Electronic switches.
- SANS 60730-2-7/IEC 60730-2-7, Automatic electrical controls for household and similar use – Part 2-7: Particular requirements for timers and time switches.
- SANS 60884-1/IEC 60884-1, Plugs and socket-outlets for household and similar purposes – Part 1: General requirements.
- SANS 60906-3/IEC 60906-3, IEC system of plugs and socket-outlets for household and similar purposes – Part 3: SELV plugs and socket-outlets, 16 A 6 V, 12 V, 24 V, 48 V, a.c. and d.c.
- SANS 60947-2:2020/IEC 60947-2:2019, Low-voltage switchgear and control gear – Part 2: Circuit breakers.
- SANS 60947-3/IEC 60947-3, Low-voltage switchgear and control gear – Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units.
- SANS 60947-4-1/IEC 60947-4-1, Low-voltage switchgear and control gear – Part 4-1: Contactors and motor-starters – Electromechanical contactors and motor-starters.
- SANS 60947-4-2/IEC 60947-4-2, Low-voltage switchgear and control gear – Part 4-2: Contactors and motor-starters – Semiconductor motor controllers, starters and soft-starters.
- SANS 60947-4-3/IEC 60947-4-3, Low-voltage switchgear and control gear – Part 4-3: Contactors and motor-starters – AC semiconductor controllers and contactors for non-motor loads.
- SANS 60947-5-1/IEC 60947-5-1, Low-voltage switchgear and control gear – Part 5-1: Control circuit devices and switching elements – Electromechanical control circuit devices.
- SANS 60947-5-2/IEC 60947-5-2, Low-voltage switchgear and control gear – Part 5-2: Control circuit devices and switching elements – Proximity switches.
- SANS 60947-5-5/IEC 60947-5-5, Low-voltage switchgear and control gear – Part 5-5: Control circuit devices and switching elements – Electrical emergency stop device with mechanical latching function.
- SANS 60947-6-1/IEC 60947-6-1, Low-voltage switchgear and control gear – Part 6-1: Multiple function equipment – Transfer switching equipment.
- SANS 10142-1:2021 Edition 3 SANS 60998-2-1/IEC 60998-2-1, Connecting devices for low-voltage circuits for household and similar purposes – Part 2-1: Particular requirements for connecting devices as separate entities with screw-type clamping units.
- SANS 60998-2-2/IEC 60998-2-2, Connecting devices for low-voltage circuits for household and similar purposes – Part 2-2: Particular requirements for connecting devices as separate entities with screwless-type clamping units.
- SANS 61000-4-5/IEC 61000-4-5, Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test.
- SANS 61084-1/IEC 61084-1, Cable trunking and ducting systems for electrical installations – Part 1: General requirements.

- SANS 61215/IEC 61215, Crystalline silicon terrestrial photovoltaic (PV) modules – Design qualification and type approval.
- SANS 61238-1/IEC 61238-1, Compression and mechanical connectors for power cables for rated voltages up to 30 kV (Um = 36 kV) – Part 1: Test methods and requirements.
- SANS 61347-2-2/IEC 61347-2-2, Lamp control gear – Part 2-2: Particular requirements for d.c. or a.c. supplied electronic step-down convertors for filament lamps.
- SANS 61386-1/IEC 61386-1, Conduit systems for cable management – Part 1: General requirements.
- SANS 61386-21/IEC 61386-21, Conduit systems for cable management – Part 21: Particular requirements – Rigid conduit systems.
- SANS 61386-22/IEC 61386-22, Conduit systems for cable management – Part 22: Particular requirements – Pliable conduit systems.
- SANS 61386-23/IEC 61386-23, Conduit systems for cable management – Part 23: Particular requirements – Flexible conduit systems.
- SANS 61439-1/IEC 61439-1, Low-voltage switchgear and control gear assemblies – Part 1: General rules.
- SANS 61439-2/IEC 61439-2, Low-voltage switchgear and control gear assemblies – Part 2: Power switchgear and control gear assemblies.
- SANS 61439-4/IEC 61439-4, Low-voltage switchgear and control gear assemblies – Part 4: Particular requirements for assemblies for construction sites (ACS).
- SANS 61439-5/IEC 61439-5, Low-voltage switchgear and control gear assemblies – Part 5: Assemblies for power distribution in public networks.
- SANS 10142-1:2021 Edition 3 SANS 61439-6/IEC 61439-6, Low-voltage switchgear and control gear assemblies – Part 6: Busbar trunking systems (busways).
- SANS 61558-1/IEC 61558-1, Safety of power transformers, power supplies, reactors and similar products – Part 1: General requirements and tests.
- SANS 61558-2-2/IEC 61558-2-2, Safety of power transformers, power supplies, reactors and similar products – Part 2-2: Particular requirements and tests for control transformers and power supplies incorporating control transformers.
- SANS 61558-2-4/IEC 61558-2-4, Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V – Part - 2-4: Particular requirements and tests for isolating transformers and power supply units incorporating isolating transformers.
- SANS 61558-2-5/IEC 61558-2-5, Safety of transformers, reactors, power supply units and combinations thereof – Part 2-5: Particular requirements and test for transformers for shavers, power supply units for shavers and shaver supply units.
- SANS 61558-2-6/IEC 61558-2-6, Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V – Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers.
- SANS 61558-2-15/IEC 61558-2-15, Safety of transformers, reactors, power supply units and combinations thereof – Part 2-15: Particular requirements and tests for isolating transformers for the supply of medical locations.
- SANS 61643-11/IEC 61643-11, Low-voltage surge protective devices – Part 11: Surge protective devices connected to low-voltage power distribution systems – Requirements and test methods.
- SANS 61643-12/IEC 61643-12, Low-voltage surge protective devices – Part 12: Surge protective devices connected to low-voltage power systems – Selection and application principles.
- SANS 61646/IEC 61646, Thin-film terrestrial photovoltaic (PV) modules – Design qualification and type approval.
- SANS 62053-11/IEC 62053-11, Electricity metering equipment (a.c.) – Particular requirements – Part 11: Electromechanical meters for active energy (classes 0,5, 1 and 2).
- SANS 62053-21/IEC 62053-21, Electricity metering equipment (a.c.) – Particular requirements – Part 21: Static meters for active energy (classes 1 and 2).
- SANS 62103/IEC 62103, Electronic equipment for use in power installations.
- SANS 62305-2/IEC 62305-2, Protection against lightning – Part 2: Risk management.

- SANS 62606, General requirements for arc fault detection devices. UL 508, Standard for Industrial Control Equipment.
- SANS NRS 097-2-1: Grid Interconnection of Embedded Generation part 2 Small-scale embedded generation, section 1 utility interface.
- SANS NRS 097-2-3: Grid Interconnection of Embedded Generation part 2 Small-scale embedded generation, section 3 Simplified Utility Connection Criteria for low-voltage connected generators

In line with these requirements, the Contractor will be responsible for all relevant Plans, Working Methodologies and Registers, which will include, but not be limited to the following:
***NB:** The **Supply, Installation and Commissioning of Fibre cables, SCADA System, full automation and communication of the plant** shall be witnessed by the ERWAT Engineer or his appointed representative.

3.3 ELECTRICAL DISTRIBUTION SWITCHBOARD SPECIFICATION

i. The scope of work includes the furnishing of all labour, material and services for the design, supply, manufacture, testing, works inspection, delivery to site, offloading, placing into position, site assembly, pre-commissioning, commissioning assistance and rectification of defects during warranty period of 12 months(stipulating turn-around time) for 400V Distribution Switchboard and Motor Control Panels as specified herein.
ii. The Contractor will be required to decommission, remove and transport the existing MCC panels, equipment, rerouting of cables, old cables (that need to be removed) and cable trays onsite to designated site.
iii. Determine the electrical load requirements and select appropriate switchboard ratings.
iv. Design the switchboard layout, ensuring proper segregation of power distribution circuits and consider future expansion and flexibility in the design. All system design must allow for 30% expansion post commissioning.
v. Integration of the MCC with the electrical distribution system, including motor connections, control wiring, and interlocks.
vi. Include contactors, relays, motor starters, push buttons, indicators, and other necessary devices.
vii. Provide appropriate control circuitry, including control transformers and control relays.
viii. Include motor protection devices, such as thermal overload relays or electronic motor protection modules.
ix. Incorporate appropriate safety features, such as replacing all the start stop stations for all motors specified herein lockable doors and clear marking of circuits.
x. Provide surge protection devices and appropriate grounding arrangements.
xi. Contractor will be required to do necessary calculations to determine the size and type of cables suitable for use on motors to be controlled by VSD's and all necessary cable work (immediate/internal/short cables) to be removed and replaced. All terminations to be done at the bottom, as per existing.

xii. The system shall be fully digital, Microprocessor based, energy efficient, and shall provide very high reliability, high power factor, low harmonic distortion and low vibration and wear and noise.

xiii. Contractor will be required to do necessary calculations to determine the size and type of cables suitable for use on motors to be controlled by VSD's and all necessary cable work (immediate/internal/short cables) to be removed and replaced. All terminations to be done at the bottom, as per existing.

xiv. The awarded bidder should submit the calculations done for determination of cable size, layout schematics of the cable routing from equipment to panel together with its technical specifications to the responsible engineer.

xv. Ensure compliance with relevant electrical codes and standards. All work must be carried out in strict accordance with SANS 10142-1:2017 and a certificate of compliance to be issued on completion.

3.4 MANUFACTURING AND CONSTRUCTION DETAILS FOR MCC CUBIC MODULAR SYSTEM:

i. All equipment and services shall comply with the mandatory requirements of the Occupational Health and Safety Act 85 of 1993 (as amended). **Particular reference is made to Section 21 of the Act which, in terms of sub-clause 4, requires the preparation and submission of a risk analysis before any equipment is delivered, off-loaded or erected on site.**

ii. Manufacture and supply of Switch Board and Motor Control Panel in accordance with SANS 10142:2017 requirements so as to fulfil certification thereof.

iii. Installation and commissioning risk assessment in relation to all the work and activities to be undertaken with regards to this contract as part of submissions.

iv. Delivery of units to the construction site. It is expected of the manufacturer that deliveries to be received and stored by the electrical subcontractor. All equipment (electronic components and cable works) remains a responsibility of the contractor until the project is handed over.

v. Prior arrangements of delivery to be coordinated with the Engineer, two weeks prior to delivery.

vi. Two set of any special tools required per switchgear board that will be required for operation

or maintenance purposes including three spare sets of each type of fuse.

vii. Recommended spares for guaranty period should be OEM product.

viii. Technical assistance if requested during checking for operational readiness.

ix. Bidders must include project program with time frames on his/her submission.

x. Cleaning and Housekeeping of the area during and after the completion of the Project should be to the satisfaction of the Engineer or their appointed representative

xi. On completion of the work the contractor must supply ERWAT with three sets of as build drawings as well as COC for the MCC panel.

xii. Manufacture/ Bidder will be responsible for ensuring heat from the VSD's and MCC Panel is conceded in the design in accordance to manufactures requirements and site conditions. Any additional cooling requirements due to the commissioning and installation of the new equipment will be for the account of the appointed contractor.

xiii. Contractor is responsible for verification of all sizes and dimensions on site in terms of the requirements in this document.

3.5 VARIABLE SPEED DRIVES

i. The system must be fully digital, Microprocessor based, energy efficient, and must provide very high reliability, high power factor, low harmonic distortion and low vibration and wear and noise. It must be easy to install in minimum time and expense and no special tools must be required for routine maintenance.
ii. VSD system must be designed for continuous duty as per nameplate rating under the specified ambient conditions.
iii. The VSD must be of the most modern design, yet user friendly and be simple to install, commission and maintain.
iv. The VSD must be able to start and control the speed of currently existing motors based on the load needs on related site.
v. The VSD must be programmed in accordance with the plant philosophy and controls to be integrated to the PLC system, this to be provided by operations.
vi. The Programming terminal of the VSD must be accessible for programming and controls

with the main door closed.

vii. The following protocols must be the minimum available; Profinet Modbus/TCP

viii. .

ix. All necessary cable work for communication to be in place to ensure automatic control of motors on site.

x. VSD must match the characteristics of the mechanical load.

3.6 SCADA SYSTEMS

The objective of this section is to implement a robust SCADA system that enables real-time monitoring, control, and data acquisition for your industrial processes. The system will provide a centralized platform to monitor and manage various equipment and processes, enhancing operational efficiency, reliability, and safety.

SCOPE OF WORK FOR SCADA SYSTEMS

Control systems which utilize computer based SCADA shall incorporate the following:

i. The contractor shall develop a comprehensive system design and engineering plan. This will include the selection of appropriate hardware and software components, network architecture, and interface design.

ii. The control system shall be configured so that the equipment is PLC controlled to the extent that the installation can operate under SCADA failure.

iii. The new system should be compatible and be able to be integrated to the existing network.

iv. Ensure that all components are of high quality, reliable, and compatible with ERWAT's existing infrastructure. Ensure seamless integration with your existing equipment, sensors, and control devices.

v. Functions and information relating to a single item of equipment shall normally be provided on the control panel, MCC or other electrical panel. Functions and information relating to overall control shall normally be provided on the SCADA system.

vi. Install and configure the SCADA system, including hardware setup, network configuration, and software installation.

vii. Develop an intuitive and user-friendly Human-Machine Interface (HMI) that provides a clear and comprehensive view of ERWART's WCW process. The HMI shall allow operators to monitor real-time data, control equipment, and access historical data for analysis and decision-making.

viii. Mimic screens provided for SCADA systems shall, where applicable, include at least the following:

- Overview of scheme; including the process flow diagram and indicating all electronically monitored parameters.
- Overview of each separate installation.
- Individual unit (Centrifuge, compressor, pumpset, etc.).
- Equipment sequence selection.
- Equipment start interlocks.
- For all motor status and, where applicable, motor protection relay diagnostic.
- Electrical reticulation schematic.
- Hardware diagnostic.
- Alarms.
- Set-points for alarm, trip and control loop functions (including password protected alteration facility).
- Record of equipment and process parameters at instant of equipment trip and station trip.
- Trending of all monitored system parameters, with separate screens for logical groupings from an operating point of view.
- Communication status of control system hardware.
- SCADA security system password current settings, including personnel names.
- Ancillary equipment status; e.g. security, fire detection, UPS).
- Printing.
- Indication of measured parameters shall be provided to three significant places or more. For example, all set points, such as temperature trip settings, flow trip settings, level settings for pump switch-on, etc., shall be indicated on mimic screens. It shall be possible, with password protection, to alter the set-points.
- All points of inflection of measured parameters shall be recorded.
- At least one colour printer (for graphs, mimics, etc.) and one line printer (for alarms) shall be provided.
- An alarm condition which leads to the control system executing an equipment trip shall be logged and all subsequent alarms which occur as a result of the tripping action shall be logged as subordinate alarms. The condition which caused the trip shall be fully described with respect to the:
    * Item of equipment
    * Trip set point reached.
    * Description of parameter; i.e. flow, temperature, etc.
    * Time.

- Alarm conditions which lead to the control system executing an equipment trip shall be

provided with a suitable time delay in order to limit the number of tripping actions cause by electrical disturbances or similar occurrences. The time delay for each trip shall be decided in conjunction with the Engineer.

3.7 PROGRAMMABLE LOGIC CONTROLLER (PLC)

The PLC will have the following functions; the control of the processes related to the installed mechanical, electrical and instrumentation equipment, the control related to the sequential and alternative operation of equipment in order to optimise electricity consumption and the display of status and possible fault and operational conditions related to the installed mechanical, electrical and instrumentation equipment.

- The Programmable Logic Controller (PLC) must be microprocessor based system which must be used for implementation of plant operation. System should be able to issue automatic commands to control the operation of the plant, this to be according to the plant philosophy as specified by operations. All necessary cable work for communication to be in place to ensure automatic control.
- All software and hardware design and supply is to be approved by the Instrumentation specialist.
- Complete product documentation describing installation and simple field maintenance must be readily available in the form of a user manual.
- All system hardware design must be suitably sized for the installation.
- All system design must allow for 30% expansion post commissioning.
- The manufacturer or its authorised distributor must provide complete technical support for all of its products. This must include headquarters or local training, regional application centres and local or headquarters assistance.
- The system must be programmed in principle as per the logic diagrams.
- The system must be able to operate satisfactorily from 150C to 400C and 0 ~ 95% non-condensing humidity range unless otherwise specified.

3.8 FIBRE CABLES AND NETWORK

This section outlines the scope of work for the supply, installation, and testing of a fibre optic cable network at ERWAT's WCWs. The project aims to establish a high-speed and reliable communication infrastructure to support various data-intensive applications and services. The following are requirements must be met for each respective site:-

i. The contractor shall develop a detailed design and engineering plan for the fibre optic network.
ii. The plan will include network topology, cable routing, splice points, termination points,

distribution points, and any necessary equipment such as fibre optic switches, patch panels, and enclosures.

iii. The contractor shall supply high-quality fibre optic cables, connectors, and related components, ensuring compliance with industry standards and specifications.

iv. The contractor shall perform the installation of fibre optic cables, adhering to industry best practices and safety standards. This includes aerial or underground cable laying, duct installation, conduit fittings, and cable termination. Proper cable management and labelling shall be implemented throughout the installation process.

v. All the fibre cable must run inside a 50mm fibre optic cable sleeve. Both underground and in cable channels

vi. Lay out the cable routes based on the planned design, taking into account factors such as distance, bends, and cable management, road crossings and paving crossings.

vii. Fibre splicing and patching is required on all sections

a. Each section must have a panel with a back plate.
b. On the back plate, must be a section of Dinrail.
c. A Splice panel must be fitted on the Dinrail.
d. The splice panel must be the section that contain the spliced sections of fibre optic cable.
e. 8x Pig tails must be available in each panel
f. Fly leads from the splice box to Ethernet switch must be included.
g. All cables and patch leads must enter and exit the panel through a compression gland.
h. Cables must be mounted on a Cable tray between the fibre cable sleeve and the panel.

viii. The contractor shall install all necessary network equipment, including fibre optic switches, patch panels, enclosures, and any other required components. The installation will be carried out according to manufacturer guidelines and in coordination with the network design or specified by the Engineer.

ix. Conduct comprehensive testing of the fibre optic network using specialized testing equipment. This includes measuring optical loss, checking for any signal degradation or reflections, and verifying network performance.

3.9 FIELD EMERGENCY STOP CONTROL STATION AND ISOLATOR

i. Enclosure material should be of stainless steel 316, 1,2mm thick.

ii. Enclosure should have a minimum IP rating of 65 to eliminate moisture ingress.

iii. Dimensions should be a minimum of 250mm x 250mm x 200mm.

iv. Minimum size of push button should be diameter of 22mm.

v. Colour coding; emergency stop – red mushroom shape push button latching and green start button.

vi. Each motor must have its disconnecting device (isolator) to disconnect the individual motors from the entire installation, three phase pad lockable device with auxiliary switch position contact.

vii. Isolators to be suitable for each motor as specified on motor list, and to meet SANS

10142:2017.

viii. Contractor to determine size of isolator and provide calculations used.

3.10 VENTILATION AND THERMAL MANAGEMENT

i. Adequate ventilation must be provided for the MCC panel compartments. The temperature inside the compartment may not rise by more than **5°C** above the ambient temperature of the equipment over the operating temperature range. Contractor to determine the maximum expected heat dissipation from the new MCC panel also considering all equipment that will be installed including the VSD's, based on this value contractor to provide appropriate and sufficient ventilating method to ensure temperature rise is not above **5°C** above the ambient temperature. Contractor to take into consideration limited space available based on site conditions.

ii. The panel must have **IP 55** rating.

iii. Ventilation should be integrated in such a way that it will not be blocked by any of the surrounding structures, contractor to take note of limited space available for construction of the panel.

iv. Attention must be given to ventilation to prevent the accumulation of ionized gases. Suitable drip proof, fine mesh screened, vermin proof openings must be provided to facilitate air movement by convection. These openings must be arranged such that the hot gasses or other materials cannot be discharged in a manner injurious to operating personnel.

v. Precautions must be taken to prevent localised hot spots.

vi. Where necessary, ventilation fans or blowers may be fitted to assist with compartment ventilation. Any fan or blower used must be designed to fit the purpose as per site conditions.

vii. The air intake of the compartment must be fitted with a removable dust filter. The filter material must be readily available for replacement purposes and must comply with relevant standard specification.

3.11 LIGHTING SYSTEM

i. The luminaire shall consist of a body manufactured from high-pressure die-cast aluminium.

ii. The body shall be hail-proof, weatherproof, corrosion, and vandal resistant.

iii. The housing shall be equipped with armoured glass fixed in a sturdy, hinged die-cast frame with a silicon-rubber gasket secured with screws.

iv. The luminaire shall be suitable for one 250 or 400-watt high-pressure sodium vapour lamp.

v. The luminaire shall be equipped with integral control gear mounted internally or alternatively, the control gear may be mounted in a separate control gear compartment, in

which case the compartment shall have the same IP rating as the luminaire.

vi. The luminaire shall have an ingress protection rating of at least IP43.

vii. Heavy gauge hot-dipped galvanised or powder coated steel mounting bracket with pre-punched holes shall be supplied with the luminaire

viii. Minimum illuminance of 200 Lux is required at floor level.

3.12 CABLE TRAYS

i. Material used should hot-dipped galvanized coating where damp conditions might be encountered.

ii. Trunking may be secured direct to a surface or suspended by means of brackets.

iii. Size should be of such dimensions that will accommodate the volume of cable work to be installed therein, contractor to determine this based on cables required to be replaced.

iv. The ratio of the space occupied by all the cables in trunking to the whole space enclosed by the trunking is known as the space factor. The space factor for cables within a trunking should not exceed 45%, this means that the cables must not fill more than 45% of the space enclosed by the trunking.

3.13 CABLE TRUNKING

i. Material used for trunking should be a non-conductive material preferably PVC.

ii. Sizing of PVC Trunking and related conductors must comply with SANS 10142:2017

iii. Additional 25% Spare capacity must be allowed. The contractor must ensure that all trunking is adequately sized to house the necessary wiring.

iv. Allowance must be made during LV Cabinet Layout design to ensure that a minimum distance of 50mm is maintained between terminals and PVC Trunking, in order to ensure that conductor core indents are visible at all times. The manufacturer must also ensure that a space of not less than 50mm must be maintained between trunking and any component or object.

3.14 ELECTRONIC MOTOR PROTECTION UNIT (<u>INTELLIGENT ELECTRONIC MOTOR CONTROL UNIT)</u>

The intelligent Motor control unit shall provide extensive protection, monitoring, safety and control functions for asynchronous motors and provide detailed operating, service and diagnostics data for process control systems and control systems using the most common fieldbus systems. Standard Specification for the intelligent motor control unit shall comply to IEC/EN 60947-4-1 & IEC/EN 60947-5-1.

Motor protection relay must have following bare minimum features:-

i. The supply voltage must be 240 VAC.

ii. The following thermal overload trip curves must be available inverse (I^2t) and definite time (Ixt) curves.

iii. The relay must have an earth fault protection capability.

iv. The intelligent motor control unit shall have an option for expansion with graphical LCD display. The keypad shall have start and stop buttons, information button for access to a built-in manual and an interface for connection to a PC.

v. The intelligent motor control unit shall support ethernet based communication protocol.(preferably, PROFINET IO or Modbus/TCP).

vi. The intelligent motor control unit shall make different operating, service and diagnostics data available and helps to detect potential faults at an early stage and to avert them by means of preventive measures.

vii. Metering and fault memory must be available.

viii. The following motor temperature sensing, PTC binary, PTC analogue, NTC analogue and PT100 must be available.

ix. Protection must include the following:

a. Thermal overloads current.
b. Phase imbalance.
c. Current phase loss.
d. Current phase reversal.
e. Long start.
f. Stalled Rotor
g. Under current.
h. Over current.
i. Ground current.
j. Motor temperature sensor.
k. Voltage phase imbalance.
l. Voltage phase loss.
m. Voltage phase reversal.
n. Under voltage.
o. Overvoltage.
p. Voltage dips management (auto restart and load shedding).
q. Power limits and power factor limits.
r. Inverse-time delayed electronic overload protection (CLASS 5E to 40E) according to IEC60947

3.15 ELECTRICAL POWER METER

i. Voltage (UL-L/UL-N), phase currents (IL), neutral current (IN)

ii. Measuring voltages with direct measurement (rated line voltages) 57,7/100… 400/690 V (IEC), 50/60 Hz (CATIII). Voltage measurement > 690 V possible via external transformers
iii. Frequency, power factor, cos phi
iv. Active, reactive and apparent power per phase and total
v. U/I phase diagram in graphical and table form, as well as asymmetry for voltage and current
vi. THD for voltage (UL-L/UL-N) and current (IL)
vii. 2nd to 64th harmonic components (even and odd) per phase for voltage
viii. 2nd to 31st harmonic components (even and odd) per phase for current
ix. Instantaneous, minimum, maximum and average values
x. Averaging of all measured values directly on the device in two aggregation stages, which are independent of each other and freely configurable
xi. Energy consumption for active, reactive and apparent energy per day and tariff for 366 days, for import and export
xii. Number of energy tariffs: 2
xiii. Active, reactive and apparent energy of a process, e.g. from production; start and stop via programmable digital input
xiv. Display of active, reactive and apparent energy consumption in total, per day or over definable time period
xv. 2 configurable universal counters, counting of limit violations, DI/DO status changes, pulses from energy counters for current, water, gas, etc.
xvi. Operating hours counter for monitoring the load runtime or a process, e.g. from production; start and stop synchronized with above-mentioned process energy counter
xvii. Operating hours counter for monitoring the load runtime or a process, e.g. from production; start and stop synchronized with above-mentioned process energy counter
xviii. Display of over 200 measured values, including values for active, reactive and apparent energy
xix. Power connection: via external current transformers x/1 A or x/5 A
xx. Accuracy:
According to IEC 62053-22/23, IEC 61557-12
Class 0.2 according to IEC 61557-12 for active energy
Class 0.2 according to IEC 61557-12 for current and voltage
Class 0.2S according to IEC 62053-22 for active energy
xxi. Dimensions: 96 mm x 96 mm, mounting depth 77 mm
xxii. Degree of protection IP65 (at the front, when installed)
xxiii. Graphical LC display for optimal readability even from a distance. Display with adjustable contrast, adjustable backlighting and energy-saving function
xxiv. communication interfaces by means of: Ethernet expansion module with integrated switch functionality (protocol: PROFINET/Modbus TCP)

3.16 HUMAN MACHINE INTERFACE (HMI)

Each area equipped with a PLC must be equipped with an HMI. The HMI must be 12 inch. The HMI must be mounted on the front of the PLC panel. The supplier must be responsible for the development of all HMI screens and the translation of the operational philosophy into the control programme to enable operation of the plant from the HMI.

3.17 ETHERNET BACKBONE SYSTEM

Communication between the PLC's, HMI's, electronic motor protection relays, Power Meter and VSD's must be by Industrial Ethernet (Modbus TCP, Profinet). The Ethernet link between the areas

of the plant must be achieved by multi-mode fibre optic cable. The contractor is required to supply, install and terminate 6 pair multi-mode fibre cables between the required areas.

3.18 PANEL ACCESS CONTROL

i. The panel must be accessible via panel key.
ii. The panel must be lockable, on extended barrel type square key lock (must be able to lock with padlock minimum size 40mm).

3.19 DUTY DESCRIPTION

The distribution switchgear must be capable of continuous duty at full rating under the following conditions;

i. Altitude: 500m - 1800
ii. Installation location; see Tender Document C4: Site Information
iii. Exposed to vermin and dust depredations
iv. Maximum air temperature 40°C
v. Minimum air temperature -4°C
vi. Relative Humidity; 95% Non-condensing
vii. Operation 24 hours per day, 365 days per year

3.20 DESIGN CRITERIA

System details;

i. Bursar voltage 400V ±10%
ii. Phases 3 + N
iii. Frequency 50 Hz
iv. Phase rotation R-W-B (anti - clockwise)

Please Note:

NB: The duration of the maximum short circuit currents must be deemed to be a minimum of one second. Evidence (in the form of Certificates by ERWAT recognized Testing Authorities) of the ability of the 400V distribution switchgear boards offered to withstand satisfactorily the prospective fault conditions must be furnished with the tender.

3.21 MANUFACTURING AND CONSTRUCTION DETAILS

***NB**: Boards must conform to IEC 61439:2009.

i. MECHANICAL CONSTRUCTION:

a. The distribution boards must be adjustable pattern comprising one or more fully interchangeable modular, rigid, free-standing sections bolted together to form an extensible, composite, rigid, free standing, vermin proof distribution board of uniform appearance to conform to Form 3b of the specifications. The **maximum height** of the sections must **not exceed 2200mm (without bus bar compartment).** Each section must be divided vertically into panels. Each panel must be divided into one or two cubicles one above the other.

b. The minimum width of incomers and motor stater cubicles is 600 mm

c. A channel must be provided under each completed section of transportable length which must be so constructed that it can be used for lifting the transportable section without distortion taking place.

d. All completed sections must be provided with lifting facilities and must have sufficient strength to withstand all stresses occurring during transportation, installation and operation without distortion or damage.

e. The distribution board must be compartmentalized to segregate bursar, cable, circuit-breaker and instrument zones. Power bursars must be completely separated from any other compartment by means of suitably earthed metallic barriers.

f. Only one motor starter per cubicle is permitted.

g. Separate compartments must be provided for circuit breaker and instrument sections.

h. Instrument section minimum width is 750mm.

i. Access to all power bus bar compartments must be by removable bolted covers. Removable covers must be provided with captive screws.

j. Incoming feeder, outgoing feeder, relay, control transformer and metering and instrumentation cubicles must have doors suitably constructed to ensure rigidity. Doors must be fitted with robust steel or brass (41200 EMB or equivalent) hinges with at least two 6mm square recessed quick close/open latches (26013 Din lock or equivalent). Hinges must be provided at 500mm intervals per door with a minimum of two hinges per door. Each door, front and rear, must be fitted with an equal number of hinges and latches. At least one of these latches must be pad lockable.

k. Doors and covers must be provided with a sufficient gasket to form a firm seal. The neoprene seal must be a nominal 5mm thick compressed to 3mm on closing of the door. The entire switchboard must be effectively dust and splash proof to IP55.

l. All hinged doors must open to a minimum angle of 135° from the closed position, to facilitate easy access for maintenance reinforcement.

m. Sectionalized removable gland plates must be fitted and must be fixed by means of captive nuts or screws and so located that ample space is available for the satisfactory entry and termination of cables. Cable entry must be at the bottom of the board. All gland plates are to be connected to the main panel earth bar via suitably sized copper conductors and unused sections must be left blank. Gland plates for 3 core cable of cross-sectional area 70mm2 and above must be minimum 5mm plate.

n. Gland plates must be galvanized. The cable gland compartments must have removable covers attached with standard 6mm square recessed quick close/open latches.

o. Suitable termination points must be provided to enable any multiple three core cables to be terminated without cross-over of different phases and with minimum lengths of cable "tails". All cable termination points and associated connections must be suitably braced to withstand the available fault currents without damage. If necessary cable support clamps must be provided for the individual cores after glanding off.

p. In addition to any support/bracing required by the electrical conditions, the bursars must also have sufficient support to prevent stresses being transmitted to the circuit breakers or any components by cable terminations. Particular attention must be paid to the termination arrangements of any multiple incoming 3 core cables.

q. The general structure of the board must be designed and fabricated to ensure that no excessive vibration caused by the operation of any component is transmitted to any other components thereby causing spurious tripping of any device.

r. Unless otherwise agreed or stated in this specification all screws, bolts and nuts must be hexagonal to ISO metric commercial standards and must be rust proof.

s. The switchboard steelwork must be a minimum of 2mm thick irrespective of the type of steel used and chassis members must be a minimum 2.0mm thick steel

t. Each cubicle/compartment door must be labelled with the reference letter(s) of that compartment using durable designation label with 20mm high black letters on a white background. The labels must have two designation letters, the 1st being the tier, numbered from A left to right and the 2nd the cubicle numbered from top to bottom (e.g. A1,A2, etc.).

u. Every door and/or removable cover giving access to a cubicle must bear a durable designation label suitably inscribed with the description and the equipment number where applicable; using engraved black characters at least 6mm high on white background. Incomers must be labelled as indicated on the single line diagrams.

v. The 400V switchgear must be provided with a Main Identity label, engraved with 20mm black on white characters and must be mounted on top of the switchgear.

w. All identity labels must be agreed with the Engineer before manufacture.

x. All removable covers/doors protecting live equipment must be fitted with warning labels.

Warning labels must be engraved white characters 6mm high on a red background.

y. Each circuit must be provided with a blank white/black white traffolyte type label or Gravoply type (or engraved in accordance with designations on drawings).

z. All electrical components/equipment must be labelled (with designations corresponding to those of the schematic diagrams) to facilitate recognition. Engraving must be left to the discretion of the manufacturer but must be legible and durable. The component labels must be affixed adjacent the component they refer to.

aa. All labels and label brackets except those for components must be affixed by machine screws.

bb. Incomers must be labelled "INCOMER FED FROM ..." and the standby bus coupler (where applicable) must be labelled "STANDBY BUS COUPLER".

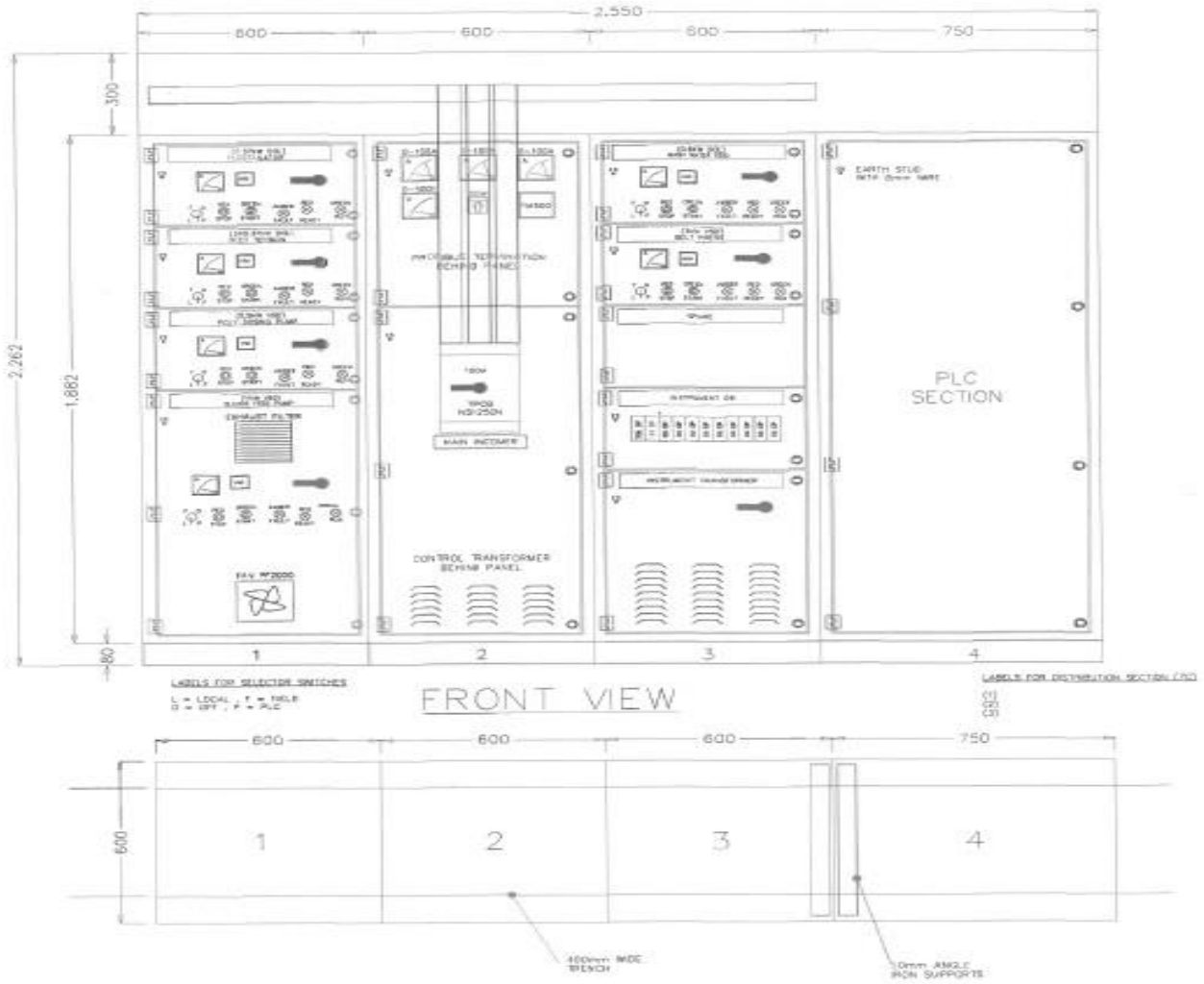
cc. Doors to compartments must be so arranged that normally they cannot be opened whilst the apparatus contained is alive unless this apparatus is fully shrouded or screened to IP20C to prevent inadvertent contact. Doors must be designed to ensure rigidity and must be a neat fit in the framework and around the circuit breaker escutcheon plate.

dd. Circuit breakers must be interlocked with the panel door to prevent opening of the door when the circuit breaker is in the "ON" position.

ee. A non-apparent interlock defeat must be provided for the opening of the door with the circuit breaker in the on position for testing and maintenance. In addition there must be provision for the attaching of three padlocks to each operating handle in the "OFF" position, which prevents the circuit breaker from being operated.

ff. All access doors, front and rear, are to be effectively and permanently earthed to the main panel enclosure of the switchgear, by means of a suitable braided copper earth strap, not less than 16mm2, crimped with lugs and bolted at each end to the door and enclosure

ii. TYPICAL MCC GA DRAWING



iii. ELECTRICAL CONSTRUCTION

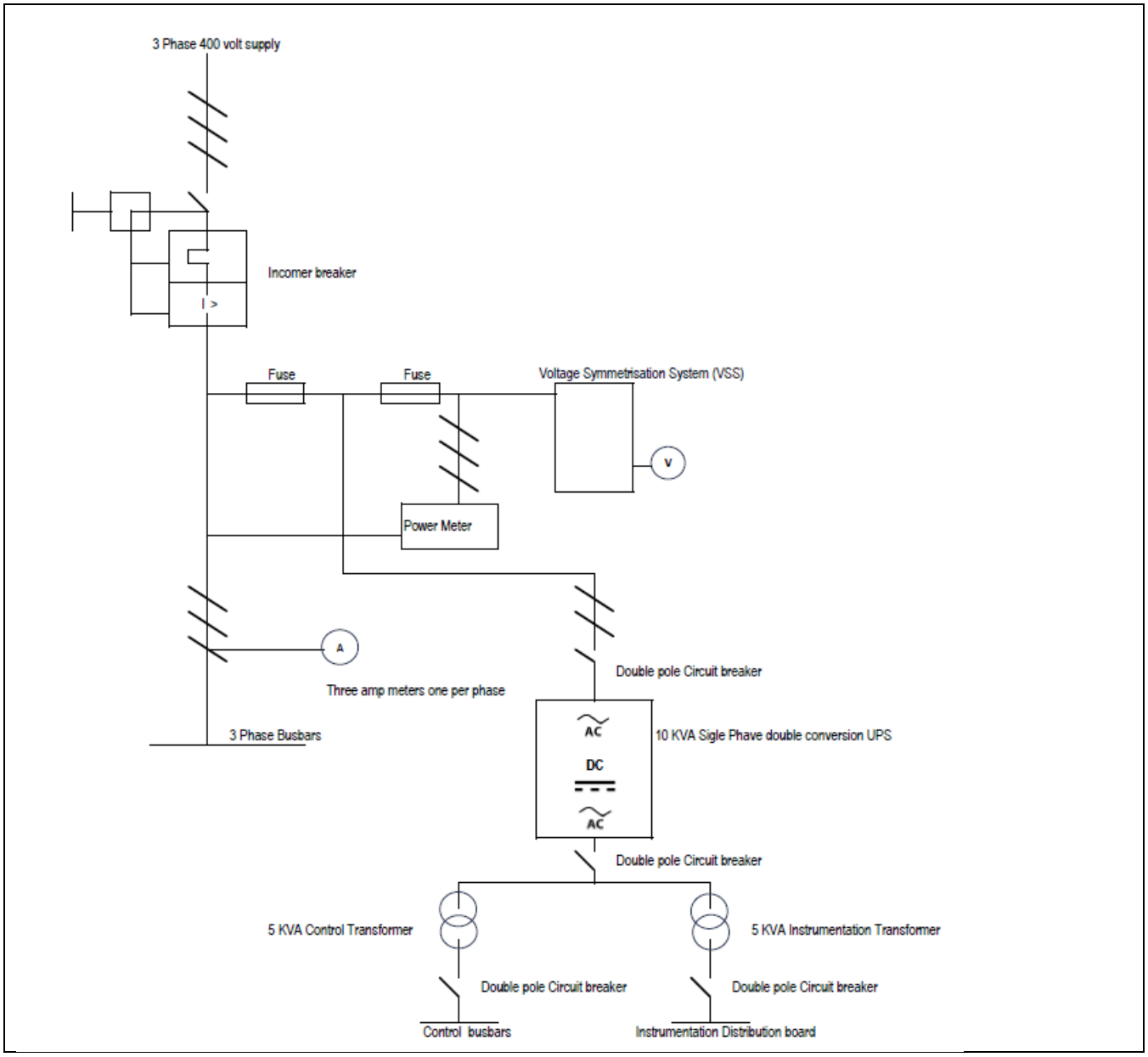
a. **Main incomer Metering**

The metering panel must include:
Three phase voltage symmetrisation system (VSS)
Three amp meters one per phase.
Power meter.

b. **Control and instrumentation supply**

Individual isolation transformers 230//230 volt must be installed for the control and instrumentation supplies.
The two transformers must have a minimum ration of 5 KVA.
The two transformers must be suppled from a, 10 KVA double conversion UPS

c. **Typical main incomer Sigle line diagram**



d. **Main incomer label requirements**

Typical label example

Name of Manufacturer:	ABC Switch boards	-	-
Name of client:	ERWAT	**Identification No:**	586-7
Designation:	DAF Area 009-MCC-001	**Date inspected:**	Oct 07
Manufactured TO:	SANS IEC 60439-1	**Form of separation:**	Form 3B
Type of board:	Floor standing	**Pollution degree:**	No 3
Test certificate number:	586-7	**Type of system earthing:**	TN-S
Rated operational voltage *Ui:*	400V	**IP Rating:**	IP 55
Rated short time current /cw:	18 kA 1 sec	**Designed diversity factor:**	0.8
Type test report No:	HC./10046/794/84263/L43	**SABS Permit no:**	3086/12029
TTA Assembly:	Yes	**EMC environment:**	1

- **Cooling (Bus bars)**

Artificial cooling of any component will not be acceptable. All design and construction must be based on natural cooling by convection or radiation.

- **Bus bars and connections**

Bus bars and connections must generally comply with SANS 1973-1 for air clearances. Notwithstanding the contents of the above-mentioned specifications, all solid copper work must be made of hard drawn high conductivity copper of constant cross-section throughout their lengths with a maximum design current density of **1,66A/mm^2.**

Notwithstanding the requirements of SANS 1973-1:2017 the following minimum air clearances must be observed for bursars and other current carrying or live parts:

- Phase - Earth : **30 mm**
- Phase – Phase : **45 mm**

Where these clearances cannot be attained, suitable insulating barriers must be employed.

In addition, all copper work (including connections to, from and between equipment) must have applied solid insulation suitable for the rated voltages. Heat/cold shrink insulation must be used wherever possible.

Main bursars must be rated suitably to the incoming breaker. Bursar droppers must be manufactured from solid copper bar and rated for the maximum possible current (determined by the breaker frame size) in that section with a minimum rating as set out by SANS 1973-1:2017.

Note:

All bursar joints must be high pressure bolted lap joints and all nuts, bolts, spring washers must be corrosion proof and **high tensile 8.8.**

*****Successful bidder should provide COC that clearly indicates the torque applied on the bolts and torque settings. Bolts should be clearly marked.

All bursars and droppers must be securely supported by heavy, high di-electric, non-hygroscopic material with bracing to withstand stresses due to short circuits of one second duration and at least equal to the interrupting rating of the circuit breaker protecting the bursars.

All insulation used on electrical conductors/connections and wiring must be flame retardant types, constructed of low toxicity materials.

Power wiring on the "live" side of the circuit breakers (bursar dropper to circuit breaker) must be **as short as possible,** sized to carry the:

- maximum current continuously of the frame size of the respective breakers
- discrimination between components and fault level archived by the calculation
- and must be a **flexible conductor.**

The flexible connection must be provided on all such connections and must be designed so as to prevent the transmission of any forces that may arise between the bursar droppers and the circuit breaker. In terms of IEC 60439:2009 this connection is deemed to be a fault free zone, the design and use of the flexible must in no manner compromise this zone.

This connection may be from insulated stranded conductor, laminated, insulated conductor or multi-strand braid.

Notwithstanding the foregoing the minimum power wiring size must be 16 mm^2**.** Power wiring

terminations must use an appropriate crimped accessory. The pressed tubular type of accessories is preferred. **Stamped, folded, split-barrel type accessories are not acceptable.**

In addition, hexagonal die type hydraulic crimping must be used for all wiring greater than **16 mm^2.**

- **Earth bar**

A continuous copper main earth bar or minimum cross-sectional area **95 mm^2** must extend the whole length of each switchgear board. This earth bar must, at least, be bolted to the switchgear housing at each vertical section. Crimp type terminal lugs for **95 mm^2** stranded copper must be provided at both ends of the earth bar for connection of ERWAT earthling.

- **Cable entry and cables**

  - Panels must be generally of the wall or floor standing cubicle type, suitable for cable entry from the bottom for both power and control cables as per existing. Cables must be glanded in the rear of the panels in cable compartments (on an individual MCC tier basis).
  - Deliciated cable marshalling panels must be included for all section in the MCC.
  - All internal cables (cables in the immediate MCC panel room) to be replaced, joining of short cables strictly prohibited, contractor to determine the size of cables to be used through calculations and length of the.
  - Should a need arise to extend the external cables, these are to be joined using a standard approved method and type jointing.
  - Cables should be sleeved and extra sleeving for road crossing cables.

- **Cable glanding**

Unless stated otherwise, all cabling, inclusive of power, control, data and instrument must be bottom entry. Cable entry must be via pre-punched gland plates and must be glanded within the cabinet to which the associated cable is terminated.
Only suitable steel glands must be supplied and installed
Glanding of cables in cabinets different to that in which the cable is terminated must not be permitted.
Spare cable entries must be plugged using appropriately sized blanking plugs.
The use of "push-out" blanking inserts to plug cable entries must not be permitted.

- **Wiring**

Each switchgear board must be fitted and wired completely at the factory and, only after satisfactory testing, be split if necessary for transport.

*No power cabling to run in PLC and marshalling cubicles.

Control and instrumentation wiring must be of flexible stranded annealed untinned copper construction and must comply with the table below. Conductors must comply with SANS 1411:2017, Part 1.

CT wiring; 2.5mm^2 phase coloured, common return black insulated, earth link General control wiring ;

- (AC) 1,5mm2 Live Brown
- (AC) 1,5mm2 Neutral unprotected - Black
- (AC) 1,5mm2 Neutral Protected - Blue
- (DC) 2,5mm2 Red +
- (DC) 2,5mm2 Black –

LED's and PLC inputs & outputs 1.5 mm^2 , Supply (DC) 2,5mm^2 Red + (DC) 2,5mm^2 Black -

- Digital Inputs: Grey
- Digital Outputs: Orange
- Analogue Inputs: Yellow
- Analogue Outputs: Purple
- (AC) Digital Inputs: White
- (AC) Digital Outputs: Pink

Notwithstanding the above requirements the vendor must ensure wire size used is amply rated for the current under ambient conditions. Each end of every wire must be marked with a wire number by means of the Legrand Cab 3 or equivalent system.

All control/instrument panel wiring must terminate by means of suitably sized compression crimp lugs or bootlace feral. The minimum voltage rating of the control wiring must be 600/1000V grade to SANS 1507:2015 and SANS 1411:2017 Part I and III.

All wiring must be of the stranded type. Wiring must be run in plastic trunking. Only where a space problem exists will loomed wiring be acceptable. Sticks on harness holders are not acceptable.

- **Wire numbering**

Cable/wire marking ferrules must be to the codes laid down in SANS 10142-1:2017 and must correlate to the appropriate schematic or wiring diagrams.

Split or open type marking ferrules must not be used, The Preferred types are the following:

- Grapho or equivalent markers for wires
- Stainless steel engraved/ Aluminium printed markers and steel clips to secure marker in place
- **Terminals**

Rating for motor terminal blocks must be a minimum of **40A,** or rated current for all above **40A**. Minimum current rating for other terminal blocks must be in accordance of manufacturing specifications. Terminal strips/blocks must be marked with designations corresponding with the suppliers/buyers drawings. Generally terminal numbers must be the same as the relevant wire number. No more than two wires may be connected to any one side of a terminal. 10% spare terminals must be furnished.

- **Circuit Breakers**

Circuit breakers must be either fixed pattern moulded case circuit breakers complying with the following requirements:

- **Moulded case circuit breakers (MCCBs)**
    - MCCBs must be of the manually operated trip free type with thermal and instantaneous magnetic trips in each pole. Trip functions must be resettable via the MCCB toggle.
    - Generally these MCCBs will be used for the incoming circuit breakers and outgoing feeders up to a maximum rating required with a 25% adjustable range.
    - The thermal trip elements of each MCCB must be calibrated for the maximum ambient temperature at 40°C
    - MCCBs must be selected in accordance to the calculated fault level by the MCC supplier.
    - MCCB must be provided with flash barriers on both live and load side of the MCCB.
    - Each MCCB must be provided with suitable insulation between the live and load side terminals of the MCCB and the back plate/chassis onto which the MCCB is mounted, such that any loose nut, screw, etc., which may make contact between the MCCB terminals and back plate cannot cause a short circuit.
    - Where interlocking is called for between the MCCBs this must be affected using captive keys in the breaker.
    - All outgoing circuits must be equipped with either individual motor protection relays or suitably rated protection devices.
    - All circuit breakers, except bus couplers and incomers, must be connected with the switched side to the load, i.e. with reference to power flow incoming to "LINE" and outgoing to "LOAD".
    - The incoming terminals/shutters of all 400V circuit breakers must be effectively shrouded and marked "400V LIVE -" with white characters on a red ground.

- **400V Power connections**

  Power connections on any equipment must not use "Philips" type screw/socket heads larger than 45kW. Allen type socket heads are preferred.

- **Insulation materials**

  Any insulation, filling putty, etc., used must be selected such that it can withstand without injurious effect (mechanically or electrically), all temperatures encountered within the switchboard.

- **Instruments and meters**

  All current transformers must conform to IEC-60044-1:1996. For protection purposes class 10P CTs are to be used: for indicating purposes Class 1 CT's are to be used. In general current transformer mechanical and thermal ratings must be co-ordinate with the short circuit ratings of the equipment. In general voltmeters and ammeters will predominate and must be included as follows:

  - Incoming feeders must be equipped with a single electrical power meter as specified.
  - Outgoing feeders shall be equipped with a suitably sized operated 96mm x 96mm 90º movement suppressed maximum ammeter having an overload rating of 40 x rated current for one second.
  - All instruments are to be mounted internally in the outer door/cover to enable external observation of the instruments.

- **Push button and selector switches**

All push buttons must be of the spring release type and colour coded and labelled as follows:

- Start (Green)
- Stop (Red)
- Reset (Black)
- Lamp test (Yellow)

A three-position selector switch must be positioned on each pump station panel door and labelled as follows:

- Position 1 (Manual)
- Position 2 (Off)
- Position 3 (Automatic)

- **Motor local start station**

Motor local start station must be contained in a steel enclosure comprising of the following:

- Three phase lockable isolator with the lockable handle on the door.
- Local start button
- Emergency stop

3.22 QUALITY ASSURANCE AND OTHER REQUIREMENTS

i. QUALITY ASSURANCE REQUIREMENTS

QUALITY CONTROL PLAN

Quality control plans are required for every stage of the project implementation process. The stages are divided as follows:

- Pre-manufacturing Quality control
- Material Quality control
- Manufacturing or constructing Quality control
- Installation Quality control
- Commissioning Quality control

The Quality control plan will be based on the project plan progress and quality evaluation intervention will be implemented at predetermined milestones. At these milestones hold points will allow for Quality control inspection to take place before any further activities are undertaken. The inspection details and documentation will be determined the product service or activity. In the case of a manufacturing process the manufactured will be required to submit a QCP and related documentation to the Engineer to be approved with regards to the specific product. In the case of construction or installation work the supplier will be required to submit a detailed method statement that will be the bases of the QCP. The same will apply to the commissioning process. The following document is an example of the proposed format for a QCP. The basic hold points will be for:

- Dimensional inspection-D
- Visual inspection - V
- Functional tests - F
- Factory acceptance test - FAT
- Site acceptance test – SAT

Other hold points may be added if required and alternative QCP may be used based on the approval from the engineer.

ERWAT	Quality Control Plan

Contract Description:	Co Nu

Component Item Description:	Section Description:

Document Status:	QCP No:		Sheets:		Re

Hold Point Legend:	Dimensional Inspection:	D	Visual Inspection:	V	Functional Test:	F	Facte Accept Tes

Approved Activities				Control activities				
Item	Activity	Document	Acceptance Criteria	Supplier	Sign	Engineer	Sign	Cli
A	Pre-Manufacture Control							
1								
B	Material Quality Control							
1								
C	Construction Process							
1								
D	Installation Process							
1								
E	Commissioning Process							
1								

Supplier Approval	Engineer Approval	Client Approval
Name:	Name:	Name:
Designation:	Designation:	Designation:
Signature:	Signature:	Signature:
Date:	Date:	Date:

ii. DRAWINGS AND DATA

Prior to fabrication of the Panels the supplier / contractor shall submit for consultant's approval the shop / vendor drawing consisting of G.A. drawing, sectional elevation, single line diagram, bill of material etc. and design calculations indicating type, size, short circuit rating of all the electrical components used, bus bar size, internal wiring size, Panels dimension, colour, mounting details etc.. The contractor shall submit manufacturer's catalogues of the electrical components installed in the Panels.

Drawings and documentation shall also be submitted to the Engineer for final Drawing and documentation shall be in accordance with Attachment No 1. For detail see "Documents to Be Supplied by Contractor. The following documents have to be presented at handover, 4 copies of each;

- Control Panel Data Sheet;
- Cable schedules
- General arrangement;
- Wiring diagrams and terminal strip wiring diagrams size and details;
- Panel layout drawings with dimensions;
- Single diagrams
- Auxiliary wiring diagrams;
- Foundation / mounting details;
- Installation details;
- Operating Manual;
- Alarm and trip setting schedules.

iii. PAINTING AND PROTECTIVE COATING

- Painting and protective coating shall be in accordance with specification "General Technical Specification - Corrosion Protection". The paint system shall be the standard powder coated specification offered.
- All paint used on the switchgear boards shall have added with the recognized flame retardant which must be detailed at time of tender. Should vendor not be able to comply with this specification then the vendors' standard painting specification shall be submitted for approval.
- The interior finish shall be white.
- Where applicable, Emergency incoming breaker panel doors shall be **Signal Red Shade A11**
- Bus coupler panel doors shall be **Electric Orange B26**
- Motor Control starter doors shall be **Electric Orange B26**
- All the above colour shades refer to SANS 1091/75:2012.

iv. GENERAL ITEMS

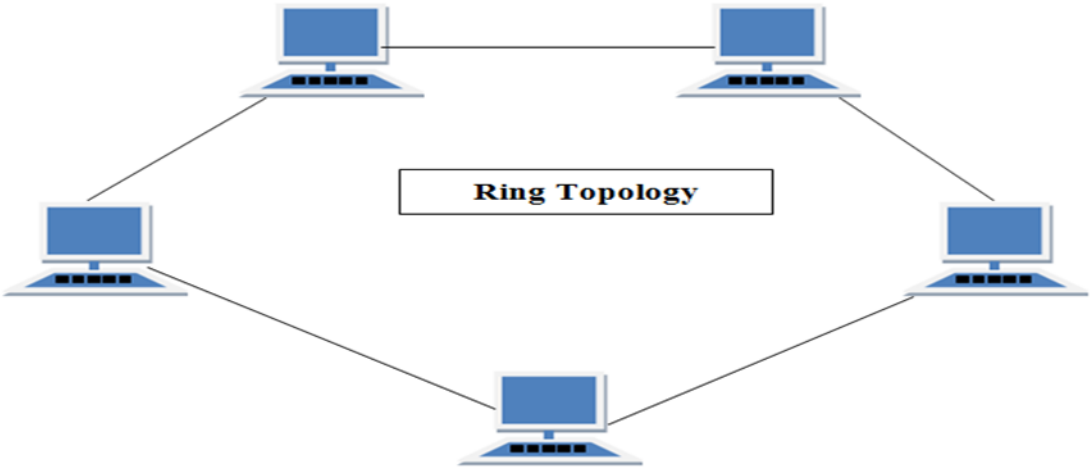
- Risk assessment requirements must be complied with in terms of the construction regulations (2014).
- A Safety File will be required upon receipt of an award letter
- Site induction training has to be completed before any work can be undertaken
- All the relevant work permits and authorization has to be obtained before any work can be undertaken.
- All work done and equipment supplied has to be in accordance with the relevant and current code and applicable statutory requirements listed.

- The relevant requirement with regards to the Occupational Health and safety act has to be Complied with, with particular reference to the safety file in accordance with the construction regulation and items covered by this document taking into consideration that that the most current regulation will always take precedence.
- No modifications to equipment may be undertaken without written approval from the designated ERWAT representative.
- All the required tools, consumables, testing facilities, etc. required to perform the work as per the Contract shall be provided by the Contractor.
- ERWAT reserves the right to hold Contractor responsible for any equipment that will be damaged due to Contractor's negligence or poor workmanship.
- All consumables will be included where required.
- Penalties will apply as detailed in relevant section.

Advantages of a Ring Network

- Reduced chances of data collision as each node release a data packet after receiving the token.
- Token passing makes ring topology perform better than bus topology under heavy traffic.
- No need of server to control connectivity among the nodes.
- Equal access to the resources

The Ring Network will be configured as indicated below;



Contractor should not take CONTIGENCIES as the amount which they are entitled to during the project, spending of CONTIGENCIES will be based on the discretion of ERWAT if the need arise and it was not factored into the stipulated scope of work.

v. DOCUMENTS TO BE SUPPLIED BY CONTRACTOR

The contractor appointed to carry out the work shall produce a comprehensive set of detailed design drawings suitable for issue for construction as well as provide detailed shop drawings, prior to manufacture of equipment.

The following drawings shall be provided:

- LV cable routes.
- Cable rack and trench lay outs.

- DB and MCC single line schematic diagrams.
- 400V single line schematic diagram.
- Power cable schedule
- Motor schedule
- Detailed Distribution Panel and MCC arrangement
- Wiring and termination schedules as required for construction
- Equipment schedules
- Equipment data sheets

The contractor shall also be responsible for As-Built drawings and operating and maintenance manuals on completion.

vi. ADDITIONAL DOCUMENTS REQUIRED

a. INSTALLATION REFERENCES

The contractor is required to submit equipment references (Brochure) with the tender document for evaluation during the adjudication/evaluation process.

b. DRAWINGS

The contractor is required to submit a General Layout of the installation with the tender for evaluation during the adjudication/evaluation process. Drawings shall be Hard Copy of A3 size.

c. TECHNICAL WARRANTEE

All equipment supplied shall have a guarantee/warrantee period of 12 months from date of completion. Proof of this guarantee shall be submitted with after successful commissioning and commencing on the same day as the final site acceptance test certificate.

d. CONFIRMATION ON SPARES AVAILABILITY

Bidder should supply ERWAT with a confirmation from their supplier that spares of this particular equipment will still be available in 10 years' time.

e. CIDB RATING

The Contract CIDB Rating required for this Contract is CIDB GRADING **7EP**. Bidders shall submit proof of current registration or application to register for this Grading or higher.
Failure to adhere to this requirement will lead to disqualification.

f. CONTRACT

The contract to be used for this tender will be the ERWAT standard SLA (Service Level Agreement) which will be the binding contract between ERWAT and the successful bidder.

g. PAYMENTS

All payments will be discussed and agreed upon on the SLA.

h. RETAINED AMOUNT

5 per cent of the contract amount will be retained by ERWAT for the entire warrantee period and will only be paid to the contractor after the warrantee has lapsed.

i. TIME FOR COMPLETION

The time for completion of this contract, from date of signing SLAs up to and inclusive of commissioning and "first delivery" shall be **three-year contract (36 months)**. Note that the defects liability period of 12 months commences at first delivery. Final delivery shall take place at the expiry of the defect's liability period. A detailed construction program shall also be submitted within 7 (seven) days after appointment prior signing SLA. This program shall be finalized in liaison with and approved by the Project technician.

j. SECURITY OF MATERIALS AND EQUIPMENT

It is the responsibility of the contractor as no uninstalled equipment shall be left on site. The Contractor shall replace any materials damaged or stolen from site prior to first handover with no cost to ERWAT. Therefore, bidders are responsible for insurance on all items until official handover to ERWAT.

k. QUALITY OF MATERIALS

All materials shall comply with the relevant specifications. All materials shall be unconditionally guaranteed for a period of 12 months from the date of practical completion, which is first hand over. Where supplier's guarantees are of a shorter duration than 12 months, the Contractor shall unreservedly agree to the extension and cession of all warranties and guarantees to ERWAT.

l. FINISHING AND TIDYING

In view of the concentration of construction and other activities likely to be experienced during the Contract period, progressive and systematic finishing and tidying will form an essential part of this Contract. On no account will soil, rubble, materials, equipment or unfinished operations be allowed to accumulate in such a manner as to unnecessarily impede the activities of others. In the event of this occurring the ERWAT will have the right to withhold payment for as long as may be necessary in respect of the relevant Works in the area(s) concerned without thereby prejudicing the rights of others to institute claims against the Contractor on the ground of unnecessary obstruction.

Finishing and tidying shall therefore not be left to the end of the Contract, but shall be a continuous operation. All removed items/rubble must be removed from ERWAT site to the nearest ERWAT site or approved landfill site/transfer station as indicated by the ERWAT representative.

m. CERTIFICATE OF COMPLIANCE AND SAMPLES

The tenderer shall indicate, section-by-section, whether or not his tender complies in every respect with this specification.

If alternative quotations are submitted, all divergences from this specification shall be clearly stated and included in the supporting document file.

Technical literature consisting of brochures, technical description and configurations shall be submitted for comparative evaluation with the tender. Failure to comply with the above will invalidate the tender. Samples of the various equipment shall be forwarded on request from the Engineer.

n. TRAINING OF OPERATING AND MAINTENANCE STAFF

- The Contractor shall undertake to train the Employer's operating and maintenance staff to be fully competent in the operation, maintenance, fault finding, replacement and repair of the equipment.
- Before or on completion of the installation, when the system is in running order, the Contractor shall instruct operators in the operation of the system until they are fully conversant with the equipment and the handling thereof.
- The Contractor shall take full responsibility for the safety of personnel during training and for the quality of work produced by such personnel under his supervision.
- Tenderers have to include in the tender price for a training course for at least 5 persons from maintenance staff on the maintenance, fault finding, replacement and repair of the equipment.
- Tenderers have to include in the tender price for a training course for at least 5 persons from operation staff on the installed system, process and the handling thereof.
- Supplier must provide a training details on maintenance and operation training as required above.
- The operations training course have to contain at least the functions, facilities and operation of the system on the different levels and shall include:
  - Description of the system.
  - Operating instructions and procedures for all levels of control personnel.
  - The maintenance-training course has to contain all normal maintenance procedures and repairs

to be done for everyday problems with the system.
- All material included in the courses, shall be included in the operating and maintenance manuals.
- The contractor shall supply the Engineer with a proposed training course, one month prior to the commissioning of the system.

vii. TESTS AND COMMISSIONING

a. General

- The Contractor shall draw up procedures for and execute the following tests and inspections:

  - Factory acceptance tests.
  - Site inspections.
  - Site acceptance tests.
  - Site commission and handover.

- The Employer and Engineer will have the right to attend any or all tests and inspections.

- The Contractor must supply all the necessary test equipment to execute the tests.

- All completed test and inspection reports must be submitted to the Engineer before acceptance of the system.

- The Contractor must execute all tests and submit completed test reports to the Engineer. The Engineer shall have the right to request the Contractor to perform all or some tests in the presence of the Engineer and the Employer.

- In the event of failure of the system to pass any of the tests, a re-test will be required within 14 days of the original test. The cost associated with all re-tests will be for the account of the Contractor.

b. Factory acceptance tests

- All equipment must undergo factory testing in accordance with relevant SANS standard before being delivered to site.

- The factory tests must ensure that only specified equipment is supplied.

- The factory test procedures must include at least the following:

  - Item/equipment description and serial number.
  - Test equipment description and serial number.
  - Logical explanation of actions and/or measurements to be taken in order to determine the compliance with the specifications.

c. Test reports containing the following:

- Specified values/requirements.
- Measures/observed values/requirements.
- Remarks.
- Name and capacity of person that performed the test.
- Date of tests.
- Space for acceptance of test report by Engineer.

d. The test procedures must be submitted to the Engineer for approval at least two weeks before the scheduled test date.

e. Site inspections, site acceptance tests, commissioning, handover and Certificate of Compliance:

- Contractor must be registered to conduct testing of earth mat and bonding and issuing of Certificate of Compliance thereof.

- On completion and handover of the work the Layout schematic drawings are required from the contractor; These shall be submitted, drawings are to show the extent of the system layout designed specifically for the building(s) or structures included in the contract drawings along with installation details of the equipment and the operating/test manual.

- Non-corrosive engraved plate detailing the date of COC, supplier details, serial number and all technical specifications of the system installed, this is to be attached to each structure.

- Inspections must be done on all equipment and material delivered to site.

- The site inspections must ensure that all equipment and material being delivered complies with the requirements with regard to size, colour, finish, model, etc.

- The site inspection procedures must include at least the following:

  - Item/material/equipment description and lot/serial number.
  - Logical explanation of characteristics to be checked.
  - Inspection reports containing the following:

    - Characteristics required.
    - Characteristics observed.
    - Remarks.
    - Name and capacity of person that performed the inspection.
    - Date of inspection.
    - Space for acceptance of inspection report by the Engineer.

- COC to be issued in accordance with relevant SANS standard at time of hand over.

- Visual inspection, bonding test, ground earthing resistance test and all other necessary tests to be done.

- ERWAT will instruct the Contractor when Installation and Commissioning can commence.
- The certificate shall be co-signed by either the Contractor or a qualified ERWAT Technician.
- An Electrical Certificate of Compliance has to be issued for the installation work done, the contractor must be in the capacity of performing the tests and certifying compliancy.
- The commissioning and the testing of the equipment will be done in the presence of the designated ERWAT representative

viii. PENALTIES AND CALCULATION CRITERIA

Penalties will take effect as soon as delivery period agreed upon has lapsed. The date of official order will be the date when both parties have agreed on terms and signed the service level agreement. The penalties are further discussed on the SLA.

C.3.1.4 DATA SHEETS

DISCLAIMER – WITHOUT PREJUDICE

While every effort is made to ensure that specifications are drafted in an unbiased manner to allow all potential suppliers to offer their goods or services as set in Regulation 27 of the MFMA Act - SCM Regulations, ERWAT assumes no liability or responsibility for the completeness, accuracy or usefulness of any of the information.

However, in the event that reference is made (intentional or non-intentional) to a particular trade mark, name, patent, design, type, specific origin or producer, ERWAT's intent is of such that there is no other sufficiently precise or intelligible way of describing the characteristics of the works/goods/services required, in which case the bidder must interpret such reference as indicative only and is thus required to offer such and or an equivalent.

Any reference to any of the above potential trade barriers must be seen to include the word "equivalent".

Bidders may submit alternative offers subject to such meeting all the minimum standards, specifications, technical data and or legislative provisions applicable to such.

ERWAT does however reserve the right to scrutinise any alternative offers but is under no obligation to accept or award on any alternative offer submitted.

C.3.1.4.1 DATA SHEET FOR EXISTING TECHNOLOGIES (MCC PANELS, ELECTRICAL WORK)

C.3.1.4.1.1 SCHNEIDER TECHNOLOGY

MAIN MANUFACTURE: SCHNEIDER ELECTRICAL			
CONTROL CUBICLES			
Item	**Description**	**QTY**	**Manufacturer**
1	60A @ 10 kA	1	**SCHNEIDER**
2	100A @ 15 kA	1	**SCHNEIDER**
3	150A @ 15 kA	1	**SCHNEIDER**
4	250A @ 25 kA	1	**SCHNEIDER**
5	300A @ 25 kA	1	**SCHNEIDER**
6	60A @ 10 kA	1	**SCHNEIDER**
7	300 to 630A @ 50 kA	1	**SCHNEIDER**
Single pump control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, excl. pump motor drive (i.e. VSD / Soft Starter) measured elsewhere for:			
Item	**Description**	**QTY**	**Manufacturer**
1	3 kW pump	1	**SCHNEIDER**
2	5.5 KW Pump	1	**SCHNEIDER**
3	7,5 kW pump	1	**SCHNEIDER**
4	11 kW Pump	1	**SCHNEIDER**
5	15 kW pump	1	**SCHNEIDER**
6	30 kW pump	1	**SCHNEIDER**
7	37 kW pump	1	**SCHNEIDER**
8	45 kW pump	1	**SCHNEIDER**
9	55 kW pump	1	**SCHNEIDER**
10	75 kW pump	1	**SCHNEIDER**
11	90 kW pump	1	**SCHNEIDER**
12	132 kW pump	1	**SCHNEIDER**
13	315 kW pump	1	**SCHNEIDER**

Single mixer control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl pump motor drive (i.e. VSD / Soft Starter) measured elsewhere for:

Item	Description	QTY	Manufacturer
1	1.1 kW mixer	1	**SCHNEIDER**
2	1.5 kW mixer	1	**SCHNEIDER**
3	2.2 kW mixer	1	**SCHNEIDER**
4	3 kW mixer	1	**SCHNEIDER**
5	7.5 kW mixer	1	**SCHNEIDER**
6	15 kW mixer	1	**SCHNEIDER**

Single mixer control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl mixer motor drive (i.e. VSD / soft starters) measured elsewhere for:

Item	Description	QTY	Manufacturer
1	1.1 kW mixer	1	**SCHNEIDER**
2	3 kW mixer	1	**SCHNEIDER**

Single mechanical screen control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl screen motor drive (i.e. VSD / soft starters)measured elsewhere for:

Item	Description	QTY	Manufacturer
1	0.55 kW Screen	1	**SCHNEIDER**
2	0.75 kW Screen	1	**SCHNEIDER**
3	1.1 kW Screen	1	**SCHNEIDER**
4	3 kW Screen	1	**SCHNEIDER**

Single screw conveyor screen control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl motor drive (i.e. VSD / soft starters) measured elsewhere for:

Item	Description	QTY	Manufacturer
1	0.75 kW screw conveyor	1	**SCHNEIDER**
2	1.1 kW screw conveyor	1	**SCHNEIDER**
3	2.2 kW screw conveyor	1	**SCHNEIDER**
4	3 kW screw conveyor	1	**SCHNEIDER**

5	4 kW screw conveyor	1	**SCHNEIDER**

Single Blower control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl motor drive (i.e. VSD / soft starters) measured elsewhere for:

Item	Description	QTY	Manufacturer
1	1.5 kW Blower	1	**SCHNEIDER**
2	7.5 kW Blower	1	**SCHNEIDER**
3	11 kW Blower	1	**SCHNEIDER**
4	400 kW Blower	1	**SCHNEIDER**

Single Compressors control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl motor drive (i.e.DOL/ VSD / soft starters) measured elsewhere for:

Item	Description	QTY	Manufacturer
1	5.5 kW Compressor	1	**SCHNEIDER**
2	7.5 kW Compressor	1	**SCHNEIDER**
3	15 kW Compressor	1	**SCHNEIDER**
4	30 kW Compressor	1	**SCHNEIDER**

Single Sediment Tank control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive (i.e.DOL/ VSD / soft starters) measured elsewhere for:

Item	Description	QTY	Manufacturer
1	0.55 kW Motor	1	**SCHNEIDER**
2	0.75 kW Motor	1	**SCHNEIDER**

Single Grid removal control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive (i.e.DOL/ VSD / soft starters) measured elsewhere for:

Item	Description	QTY	Manufacturer
1	0.55 kW Motor	1	**SCHNEIDER**
2	0.75 kW Motor	1	**SCHNEIDER**

Single Aerator control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive (i.e.DOL/ VSD / soft starters) measured elsewhere for:

Item	Description	QTY	Manufacturer
1	37 kW Motor	1	**SCHNEIDER**

2	55 kW Motor	1	**SCHNEIDER**
3	75 kW Motor	1	**SCHNEIDER**
Supply and install VSD inside new Motor Control Panel cubicles for:			
Item	**Description**	**QTY**	**Manufacturer**
1	3 kW Motor	1	**SCHNEIDER**
2	0,75 kW motor	1	**SCHNEIDER**
3	1.1 kW motor	1	**SCHNEIDER**
4	5.5 KW Motor	1	**SCHNEIDER**
5	7,5 kW Motor	1	**SCHNEIDER**
6	11 kW Motor	1	**SCHNEIDER**
7	15 kW Motor	1	**SCHNEIDER**
8	30 kW Motor	1	**SCHNEIDER**
9	37 kW Motor	1	**SCHNEIDER**
10	45 kW Motor	1	**SCHNEIDER**
11	55 kW Motor	1	**SCHNEIDER**
12	75 kW Motor	1	**SCHNEIDER**
13	90 kW Motor	1	**SCHNEIDER**
14	132 kW Motor	1	**SCHNEIDER**
15	315 kW Motor	1	**SCHNEIDER**
16	400 kW Motor	1	**SCHNEIDER**
Supply and install soft starter equipment type inside new Motor Control Panel cubicles for:			
Item	**Description**	**QTY**	**Manufacturer**
1	0.75 kW motor	1	**SCHNEIDER**
2	1.1 kW motor	1	**SCHNEIDER**
3	3 kW motor	1	**SCHNEIDER**
4	7.5 kW motor	1	**SCHNEIDER**
5	15 kW motor	1	**SCHNEIDER**
6	30 kW motor	1	**SCHNEIDER**
7	37 kW motor	1	**SCHNEIDER**
8	55 kW motor	1	**SCHNEIDER**

9	75 kW motor	1	**SCHNEIDER**
10	90 kW motor	1	**SCHNEIDER**
11	132 kW motor	1	**SCHNEIDER**
12	260 kW motor	1	**SCHNEIDER**

Spare set of three ultra-rapid fuses for all VSD / Soft Starter equipment installed in MCC panel measured elsewhere.

Item	Description	QTY	Manufacturer
1	0,75 kW motor	1	**SCHNEIDER**
2	1.1 kW motor	1	**SCHNEIDER**
3	3 kW motor	1	**SCHNEIDER**
4	7.5 kW motor	1	**SCHNEIDER**
5	15 kW motor	1	**SCHNEIDER**
6	30 kW motor	1	**SCHNEIDER**
7	37 kW motor	1	**SCHNEIDER**
8	55 kW motor	1	**SCHNEIDER**
9	75 kW motor	1	**SCHNEIDER**
10	90 kW motor	1	**SCHNEIDER**
11	132 kW motor	1	**SCHNEIDER**
12	260 kW motor	1	**SCHNEIDER**

Moulded case circuit breaker complete with interconnecting tails, etc. installed inside MCC Panel, kiosk, etc:

Item	Description	QTY	Manufacturer
1	300 to 630A 3 Pole 50kA Circuit Breaker.	1	**SCHNEIDER**
2	300A 3 Pole 25kA Circuit Breaker.	1	**SCHNEIDER**
3	250A 3 Pole 25kA Circuit Breaker.	1	**SCHNEIDER**
4	150A 3 Pole 15kA Circuit Breaker.	1	**SCHNEIDER**
5	100A 3 Pole 10kA Circuit Breaker.	1	**SCHNEIDER**
6	80A 3 Pole 10kA Circuit Breaker.	1	**SCHNEIDER**
7	63A 3 Pole 10kA Circuit Breaker.	1	**SCHNEIDER**
8	40A 3 Pole 10kA Circuit Breaker.	1	**SCHNEIDER**

9	40A 2 Pole 10kA Circuit Breaker.	1	**SCHNEIDER**
10	20A 3 Pole 10kA Circuit Breaker.	1	**SCHNEIDER**
11	20A 2 Pole 10kA Circuit Breaker.	1	**SCHNEIDER**
12	80A 3 Pole 10kA Circuit Breaker.	1	**SCHNEIDER**
13	63A 2 Pole 10kA Circuit Breaker.	1	**SCHNEIDER**
14	20A 1 Pole 6kA Circuit Breaker.	1	**SCHNEIDER**
15	16A 1 Pole 6kA Circuit Breaker.	1	**SCHNEIDER**
16	10A 1 Pole 6kA Circuit Breaker.	1	**SCHNEIDER**
17	3 Phase + N Class 2 surge protection (Dehn guard & Dehn Gap)	1	**SCHNEIDER**
18	63A E/L Unit (3P + N)	1	**SCHNEIDER**
19	63A E/L Unit (1P + N)	1	Main Manufacturer

Single PLC / HMI control compartment complete with PLC and HMI equipment, I/O and communication cards, etc as specified with sufficient I/O modules to cater for:

Item	Description	QTY	Manufacturer
1	Main Power supply (230VAC-24 VDC)	1	**SCHNEIDER**
2	Main Power supply (24 VDC-24 VDC)	1	**SCHNEIDER**
3	CPU Modbus Ethernet	1	**SCHNEIDER**
4	Communication Module Ethernet Device Scanning	1	**SCHNEIDER**
5	4 slot Backplane	1	**SCHNEIDER**
6	6 slot Backplane	1	**SCHNEIDER**
7	8 slot Backplane	1	**SCHNEIDER**
8	12 slot Backplane	1	**SCHNEIDER**
9	4-20 mA Ethernet Converter	1	**SCHNEIDER**
10	Ethernet Managable Switch 2 Fibre and 6 Copper	1	**SCHNEIDER**
11	Ethernet Managable Switch 2 Fibre and 24 Copper	1	**SCHNEIDER**
12	Termination box- IP 20 rated polyester enclosures with hinged door and enough space to allow for a 25% extension	1	**SCHNEIDER**
13	3.5" Touch Screen Panel HMI	1	**SCHNEIDER**

14	12" Touch Screen Panel HMI	1	**SCHNEIDER**
15	8 Channels AI	1	**SCHNEIDER**
16	8 Channels AO	1	**SCHNEIDER**
17	8 Channels DI	1	**SCHNEIDER**
18	8 Channels DO	1	**SCHNEIDER**
19	16 Channels AI	1	**SCHNEIDER**
20	16 Channels AO	1	**SCHNEIDER**
21	16 Channels DI	1	**SCHNEIDER**
22	16 Channels DO	1	**SCHNEIDER**
23	32 Channels AI	1	**SCHNEIDER**
24	32 Channels AO	1	**SCHNEIDER**
25	32 Channels DI	1	**SCHNEIDER**
26	32 Channels DO	1	**SCHNEIDER**
27	64 Channels DI	1	**SCHNEIDER**
28	64 Channels DO	1	**SCHNEIDER**

C.3.1.4.1.2 SIEMENS TECHNOLOGY

MAIN MANUFACTURE: **SIEMENS**			
CONTROL CUBICLES			
Item	**Description**	**QTY**	**Manufacturer**
1	60A @ 10 kA	1	**SIEMENS**
2	100A @ 15 kA	1	**SIEMENS**
3	150A @ 15 kA	1	**SIEMENS**
4	250A @ 25 kA	1	**SIEMENS**
5	300A @ 25 kA	1	**SIEMENS**
6	60A @ 10 kA	1	**SIEMENS**
7	300 to 630A @ 50 kA	1	**SIEMENS**
Single pump control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, excl. pump motor drive (i.e. VSD / Soft Starter) measured elsewhere for:			
Item	**Description**	**QTY**	**Manufacturer**
1	3 kW pump	1	**SIEMENS**
2	5.5 KW Pump	1	**SIEMENS**
3	7,5 kW pump	1	**SIEMENS**
4	11 kW Pump	1	**SIEMENS**
5	15 kW pump	1	**SIEMENS**
6	30 kW pump	1	**SIEMENS**
7	37 kW pump	1	**SIEMENS**
8	45 kW pump	1	**SIEMENS**
9	55 kW pump	1	**SIEMENS**
10	75 kW pump	1	**SIEMENS**
11	90 kW pump	1	**SIEMENS**
12	132 kW pump	1	**SIEMENS**
13	315 kW pump	1	**SIEMENS**
Single mixer control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl pump motor drive (i.e. VSD / Soft Starter) measured elsewhere for:			

Item	Description	QTY	Manufacturer
1	1.1 kW mixer	1	**SIEMENS**
2	1.5 kW mixer	1	**SIEMENS**
3	2.2 kW mixer	1	**SIEMENS**
4	3 kW mixer	1	**SIEMENS**
5	7.5 kW mixer	1	**SIEMENS**
6	15 kW mixer	1	**SIEMENS**

Single mixer control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl mixer motor drive (i.e. VSD / soft starters) measured elsewhere for:

Item	Description	QTY	Manufacturer
1	1.1 kW mixer	1	**SIEMENS**
2	3 kW mixer	1	**SIEMENS**

Single mechanical screen control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl screen motor drive (i.e. VSD / soft starters)measured elsewhere for:

Item	Description	QTY	Manufacturer
1	0.55 kW Screen	1	**SIEMENS**
2	0.75 kW Screen	1	**SIEMENS**
3	1.1 kW Screen	1	**SIEMENS**
4	3 kW Screen	1	**SIEMENS**

Single screw conveyor screen control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl motor drive (i.e. VSD / soft starters) measured elsewhere for:

Item	Description	QTY	Manufacturer
1	0.75 kW screw conveyor	1	**SIEMENS**
2	1.1 kW screw conveyor	1	**SIEMENS**
3	2.2 kW screw conveyor	1	**SIEMENS**
4	3 kW screw conveyor	1	**SIEMENS**
5	4 kW screw conveyor	1	**SIEMENS**

Single Blower control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl motor drive (i.e. VSD / soft starters) measured elsewhere for:

Item	Description	QTY	Manufacturer
1	1.5 kW Blower	1	**SIEMENS**
2	7.5 kW Blower	1	**SIEMENS**
3	11 kW Blower	1	**SIEMENS**
4	400 kW Blower	1	**SIEMENS**

Single Compressors control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl motor drive (i.e.DOL/ VSD / soft starters) measured elsewhere for:

Item	Description	QTY	Manufacturer
1	5.5 kW Compressor	1	**SIEMENS**
2	7.5 kW Compressor	1	**SIEMENS**
3	15 kW Compressor	1	**SIEMENS**
4	30 kW Compressor	1	**SIEMENS**

Single Sediment Tank control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive (i.e.DOL/ VSD / soft starters) measured elsewhere for:

Item	Description	QTY	Manufacturer
1	0.55 kW Motor	1	**SIEMENS**
2	0.75 kW Motor	1	**SIEMENS**

Single Grid removal control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive (i.e.DOL/ VSD / soft starters) measured elsewhere for:

Item	Description	QTY	Manufacturer
1	0.55 kW Motor	1	**SIEMENS**
2	0.75 kW Motor	1	**SIEMENS**

Single Aerator control compartment complete with typical control gear, alarm / status indicator lamps, telemetry I/O, etc as specified, but excl. motor drive (i.e.DOL/ VSD / soft starters) measured elsewhere for:

Item	Description	QTY	Manufacturer
1	37 kW Motor	1	**SIEMENS**
2	55 kW Motor	1	**SIEMENS**
3	75 kW Motor	1	**SIEMENS**

Supply and install VSD inside new Motor Control Panel cubicles for:			
Item	**Description**	**QTY**	**Manufacturer**
1	3 kW Motor	1	**SIEMENS**
2	0,75 kW motor	1	**SIEMENS**
3	1.1 kW motor	1	**SIEMENS**
4	5.5 KW Motor	1	**SIEMENS**
5	7,5 kW Motor	1	**SIEMENS**
6	11 kW Motor	1	**SIEMENS**
7	15 kW Motor	1	**SIEMENS**
8	30 kW Motor	1	**SIEMENS**
9	37 kW Motor	1	**SIEMENS**
10	45 kW Motor	1	**SIEMENS**
11	55 kW Motor	1	**SIEMENS**
12	75 kW Motor	1	**SIEMENS**
13	90 kW Motor	1	**SIEMENS**
14	132 kW Motor	1	**SIEMENS**
15	315 kW Motor	1	**SIEMENS**
16	400 kW Motor	1	**SIEMENS**
Supply and install soft starter equipment type inside new Motor Control Panel cubicles for:			
Item	**Description**	**QTY**	**Manufacturer**
1	0.75 kW motor	1	**SIEMENS**
2	1.1 kW motor	1	**SIEMENS**
3	3 kW motor	1	**SIEMENS**
4	7.5 kW motor	1	**SIEMENS**
5	15 kW motor	1	**SIEMENS**
6	30 kW motor	1	**SIEMENS**
7	37 kW motor	1	**SIEMENS**
8	55 kW motor	1	**SIEMENS**
9	75 kW motor	1	**SIEMENS**
10	90 kW motor	1	**SIEMENS**

11	132 kW motor	1	**SIEMENS**
12	260 kW motor	1	**SIEMENS**

Spare set of three ultra-rapid fuses for all VSD / Soft Starter equipment installed in MCC panel measured elsewhere.

Item	Description	QTY	Manufacturer
1	0.75 kW motor	1	**SIEMENS**
2	1.1 kW motor	1	**SIEMENS**
3	3 kW motor	1	**SIEMENS**
4	7.5 kW motor	1	**SIEMENS**
5	15 kW motor	1	**SIEMENS**
6	30 kW motor	1	**SIEMENS**
7	37 kW motor	1	**SIEMENS**
8	55 kW motor	1	**SIEMENS**
9	75 kW motor	1	**SIEMENS**
10	90 kW motor	1	**SIEMENS**
11	132 kW motor	1	**SIEMENS**
12	260 kW motor	1	**SIEMENS**

Moulded case circuit breaker complete with interconnecting tails, etc. installed inside MCC Panel, kiosk, etc:

Item	Description	QTY	Manufacturer
1	300 to 630A 3 Pole 50kA Circuit Breaker.	1	**SIEMENS**
2	300A 3 Pole 25kA Circuit Breaker.	1	**SIEMENS**
3	250A 3 Pole 25kA Circuit Breaker.	1	**SIEMENS**
4	150A 3 Pole 15kA Circuit Breaker.	1	**SIEMENS**
5	100A 3 Pole 10kA Circuit Breaker.	1	**SIEMENS**
6	80A 3 Pole 10kA Circuit Breaker.	1	**SIEMENS**
7	63A 3 Pole 10kA Circuit Breaker.	1	**SIEMENS**
8	40A 3 Pole 10kA Circuit Breaker.	1	**SIEMENS**
9	40A 2 Pole 10kA Circuit Breaker.	1	**SIEMENS**
10	20A 3 Pole 10kA Circuit Breaker.	1	**SIEMENS**

11	20A 2 Pole 10kA Circuit Breaker.	1	**SIEMENS**
12	80A 3 Pole 10kA Circuit Breaker.	1	**SIEMENS**
13	63A 2 Pole 10kA Circuit Breaker.	1	**SIEMENS**
14	20A 1 Pole 6kA Circuit Breaker.	1	**SIEMENS**
15	16A 1 Pole 6kA Circuit Breaker.	1	**SIEMENS**
16	10A 1 Pole 6kA Circuit Breaker.	1	**SIEMENS**
17	3 Phase + N Class 2 surge protection (Dehn guard & Dehn Gap)	1	**SIEMENS**
18	63A E/L Unit (3P + N)	1	**SIEMENS**
19	63A E/L Unit (1P + N)	1	**SIEMENS**

Single PLC / HMI control compartment complete with PLC and HMI equipment, I/O and communication cards, etc as specified with sufficient I/O modules to cater for:

Item	Description	QTY	Manufacturer
1	Main load supply 8 Amp (230VAC-24 VDC)	1	**SIEMENS**
2	Segment supply 25W (24 VDC-24 VDC)	1	**SIEMENS**
3	CPU (Modbus/TCP Profinet) + Memory card	1	**SIEMENS**
4	Communication Module TCP/IP	1	**SIEMENS**
5	PLC Mounting rail 830mm	1	**SIEMENS**
6	Interface module (Profinet; Modbus/TCP)	1	**SIEMENS**
7	Ethernet Manageable Switch 2 Fibre and 6 Copper	1	**SIEMENS**
8	Ethernet Manageable Switch 2 Fibre and 24 Copper	1	**SIEMENS**
9	4" Multi Touch Screen Panel HMI	1	**SIEMENS**
10	12" Multi Touch Screen Panel HMI	1	**SIEMENS**
11	8 Channels AI + Front connector	1	**SIEMENS**
12	8 Channels AO + Front connector	1	**SIEMENS**
13	16 Channels AI + Front Connector	1	**SIEMENS**

14	16 Channels DI + Front connector	1	**SIEMENS**
15	16 Channels DO + Front connector	1	**SIEMENS**
16	32 Channels DI + Front connector	1	**SIEMENS**
17	32 Channels DO + Front connector	1	**SIEMENS**
18	64 Channels DI + Front connector	1	**SIEMENS**
19	64 Channels DO+ Front connector	1	**SIEMENS**

C3.1.4.3 Location of the Works

ERWAT WCW	Stand/ Farm Positioned	Street Name	Co-ordinates
Drainage District 3			
Esther Park	Park 753, Ester Park, Extension	R25	S 26°05'58" E28°11'02"
Hartebeestfontein	Portion 20 & Remaining of Portion 4 of farm Hartebeestfontein 17	Bapsfontein Road, Norkem Park, Kempton Park	S 26°01'11" E 28°17'1"
Olifantsfontein	Olifantsfontein 402 IR	Ceramic Road, Olifantsfontein	S 26°56'26" E 28°12'56"
Rynfield	Portion 75 of Vlakfontein 161	Sarel Cilliers, Rynfield	S 26°09'37" E 28°21'30"
Benoni	Remaining Portion 6 of Rietfontein	Lancaster Road, Benoni	S 26°12'30" E 28°19'01"
Drainage District 4			
Ancor	Remaining Extension of Portion 151 farm Daggafontein 125	Ermelo Road, Springs	S 26°16'11" E 28°28'56"
Daveyton	Daveyton	Holfontein Road, Etwatwa	S 26°12'30" E 28°19'01"
Jan Smuts	Portion 73 of farm Weltevreden 118	Wanderers Street Extension, Brakpan	S 25°57'43" E 28°12'49"
JP Marais	Portion 70 of farm Modderfontein 76	Cnr N12 / Kingsway Road	S 25°57'43" E 28°12'49"
Welgedacht	Portion 81 & 82 of farm Welgedacht	1 Carnation Road Welgedacht AH, Springs	S 26°12'30" E 28°19'01"
Drainage District 5			
Carl Grundling	Portion 58 of farm Varkenfontein 169	Vorsterkroon, Nigel	S 26°12'30" E 28°19'01"
Herbert Bickley	Portion 13 of farm Maraisdrift 190	Heidelberg Road, Maraisdrift, Nigel	S 26°12'30" E 28°19'01"
Heidelberg	Portion 28 of farm Boschhoek 385	Vaaldam Road, Heidelberg	S 25°57'43" E 28°12'49"

Ratanda	Nooitegedacht 390	Vaaldam Road, Ratanda	S 26°12'30" E 28°19'01"
Tsakani	Portion 22 of farm Vlakfontein 161	Cnr Modjadji and khama Streets	S 26°12'30" E 28°19'01"
Drainage District 6			
Dekema	Portion 10 of Katlehong 151	Brickfield Road, Motsamai Section	S 26°12'30" E 28°19'01"
Rondebult	Remaining Portion 27 Rondebeult 136	Cnr Kalk/ Van dyk Road, Rondebult	S 26°12'30" E 28°19'01"
Vlakplaats	Portion 191 farm of Vlakplaats 138	Cnr Brickfield / Bierman Street, Vosloorus	S 26°12'30" E 28°19'01"
Waterval	Portion 50,62,12 and 1 of farm Waterval 150 and Remaining portion 3 of the farm Witkop	Waterfal Farm, Meadow Road, kliprivier	S 26°12'30" E 28°19'01"

C3.2 ENGINEERING

This Section presents specifications and descriptions of the complete designs, supplies, services, engineering and construction of the completed works which are to be provided under this Contract. Other requirements and constraints relating to the manner in which the Contract work is to be performed are also provided, where limited the requirements will be implemented as part of the service level agreement (SLA). This shall include the following provisions by the contractor and not limited to:

VENDOR INFORMATION AND DOCUMENT REQUIREMENT LIST	
DESCRIPTION	**WHEN REQUIRED**
Project Programme	Order + 1 Week
Design calculations calculation of the cable conductor size	Tender document and data book
Equipment brochures	Tender document and data book
Design calculations for the equipment	Order + 3 weeks and data book
GA drawings	Order + 3 weeks and data book
Schematic diagrams	Order + 3 weeks and data book
Foundation/Concrete Plinth details	Order + 3 weeks and data book
Manufacturing program	Order + 3 weeks
Manufacturing quality control plan	Order + 3 weeks and data book
Installation quality control plan	Order + 6 weeks and data book
Installation risk assessment and method statement including safe work procedure.	Order + 6 weeks and data book
Performance test certificate	data book
Electrical test certificate (including COC)	data book
Vendors cert. of conformance if any	data book
Operating / maintenance manual	data book
Progress Reports	Bi-Weekly

Note 1:

The Programme shall identify all major activities, principal items of plant and equipment and their components. The following activities and their duration shall, in addition to the requirements of the Conditions of Contract, form the minimum basis for the preparation of the Programme: -

- Insurance Bond and general obligations
- Design
- Plant equipment and arrangement drawings
- Project Quality Plan
- Schedules
- HAZOPS
- Procurement

- Inspection and works testing
- Delivery
- Installation
- Adjustment
- Testing
- Commissioning
- Defects Notification Period

Note 2:

The Contractor shall provide a monthly progress report to the Engineer. The report shall cover at least the following aspects:

- progress of various activities in comparison to original program
- attainment of key milestones
- list of purchase orders placed
- names and positions of key personnel working on the project
- staffing levels on site (when site work commences)
- identification of any aspects needing to be addressed by the Employer or the Engineer

The Contractor shall be deemed to have scrutinised, prior to the Base Date, the Employer's Requirements (including design criteria and calculations, if any). The design, the Contractors Documents, the execution and the completed works shall comply with the country's technical standards, building, construction and Environmental Laws

The contractor appointed to carry out the work shall produce a comprehensive set of detailed design drawings suitable for issue for construction as well as detailed shop drawings, prior to manufacture of equipment. They shall also be responsible for As-Built drawings and operating and maintenance manuals on completion.

The following electrical drawings shall be provided:

- Generator GA Drawing
- Detailed cable layout routes
- Wiring and Termination schedules as required for construction
- Equipment schedules
- Equipment Data Sheets

NOTE: Reference and legal requirements listed below will be implemented as part of the Service Level Agreement (SLA) and will be applicable to all the equipment to be supplied.

- Bidder will be required to prove local (in South Africa) after sales technical and functional support.
- Local distributor, as well as functional and technical support certificate or letter.
- Localized parts or spare bin at local agent or partner.
- Clear listing of localized spares or parts within South Africa.
- Standardised Particular Specification are issued, however should there be any specific client requirements be superseded by SANS requirements will be applicable.
- The Civil Works require for all installations in this Contract is subject to ECSA requirements and all other applicable legislations and regulations.

- All Civil, Structural or any Other Designs must be signed off by a Professional registered in relation to the applicable ECSA requirement.

C3.3 CONSTRUCTION

C3.3.1 REFERENCE AND LEGAL REQUIREMENTS

It shall be the responsibility of the Contractor to obtain, at his own expense, the most recent copies of the relevant editions of the documents referred to.

The Contractor shall keep copies of the Standard Specifications, copies which are available from the South African Bureau of Standards.

For the purpose of this Contract the following Standard Specifications shall apply to all items supplied and does not form part of the evaluation process.

In general, work and materials shall be in accordance with the latest practice and in particular in accordance with the latest revision of the following specifications, and any amendments thereto, the SANS specification taking precedence:

The following minimum Legislative Requirements and Codes of Practice will be applicable to this project, but not limited to, this is not the exhaustive list.

LEGISLATION, STANDARDS AND CODES OF PRACTICE – ELECTRICAL RELATED	
NUMBER	**TITLE**
SANS 10389 -1	Artificial lighting of exterior areas for work and safety.
SANS 121	Hot dip Hot dip galvanized coatings on fabricated iron and steel articles - Specifications and test methods
SANS 475	Luminaires for Interior lighting, Street lighting and Floodlighting performance requirements.
SANS 10144	Detailing of steel reinforcement for concrete.
SANS 10100 – 2	The Structure use of concrete Part 2: Materials and execution of work.
SANS 10142-1	The wiring of premises Part 1: Low-voltage installations
SANS 10144	Detailing of steel reinforcement for concrete
SANS 10225	The design and construction of lighting masts
SANS 10313	Protection against lightning – Physical damage to structures and life hazard
SANS 1091	National Colour Standard
SANS 475	Luminaires: Performance requirements
SANS 10142	Certificate of compliance.
OHSA	Occupation Health & Safety Act (act 85 of 1993), with Regulations included

LEGISLATION, STANDARDS AND CODES OF PRACTICE – ELECTRICAL RELATED	
NUMBER	**TITLE**
IEC/TR 62271-303	High-voltage switchgear and control gear – Part 303: Use and handling of sulphur hexafluoride (SF6).
SANS 1012	Electric light dimmers
SANS 10142-1	The wiring of premises. Part 1: Low-voltage installations
SANS 10142-2	The wiring of premises. Part 2 Medium Voltage Installations above 1kV not exceeding 22kV
SANS 1019	Standard voltages, currents and insulation levels for electricity supply
SANS 10198-1-14	The selection, handling and installation of electric power cables of rating not exceeding 33 kV. Parts 1 to 13
SANS 10199	The design and installation of earth electrodes
SANS 1029	Miniature substations
SANS 10292 (SABS 0292)	Earthing of low-voltage (LV) distribution systems.
SANS 10313	The protection of structures against lightning
SANS 1239	Plugs, socket-outlets and couplers for industrial purposes
SANS 1665	Metal-clad switchgear for rated AC. voltages above 1 kV and up to and including 36 kV – General requirements and methods of test
SANS 1765	Low-voltage switchgear and control gear assemblies (distribution boards) with a rated short-circuit withstand strength up to and including 10 kA
SANS 1777	Photoelectric control units for lighting (PECUs)
SANS 1799	Watt-hour meters – AC electronic meters for active energy
SANS 1885/NRS 003	Metal-clad switchgear for rated a.c. voltages above 1 kV and up to and including 36 kV – General requirements and methods of test
SANS 1973-1	Part 1 Type tested Assemblies with Stated deviations and a rated short circuit withstand strength over 10kA
SANS 1973-3	Low-voltage switchgear and control gear ASSEMBLIES – Part 3: Safety of ASSEMBLIES with a rated prospective short-circuit current of up to and including 10 kA
SANS 1973-8	Low-voltage switchgear and control gear ASSEMBLIES – Part 8: Safety of minimally tested ASSEMBLIES (MTA) with a rated short-circuit current above 10 kA and a rated busbar current of up to and including 1 600 A a.c. and d.c
SANS 556-1	Low-voltage switchgear – Part 1: Circuit-breakers
SANS 60044-1/IEC 60044-1 to 5	Instrument transformers – Part 1 to 5

LEGISLATION, STANDARDS AND CODES OF PRACTICE – ELECTRICAL RELATED	
NUMBER	**TITLE**
SANS 60309-1/IEC 60309-1	Plugs, socket-outlets and couplers for industrial purposes – Part 1: General requirements
SANS 60439-1 /IEC 60439-1 or SANS 61439-1&2/IEC 61439-1&2 /IEC 60439-1 to 5	Low-voltage switchgear and control gear Assemblies Parts1 to 5
SANS 60502-4/IEC 60502-4	Power cables with extruded insulation and their accessories for rated voltages from 1 kV (Um = 1,2 kV) up to 30 kV (Um = 36 kV) – Part 4: Test requirements on accessories for cables with rated voltages from 6 kV (Um = 7,2 kV) up to 30 kV (Um = 36 kV).
SANS 60529/IEC 60529	Degrees of protection provided by enclosures (IP Code).
SANS 60669-1/IEC 60669-1	Switches for household and similar fixed electrical installations – Part 1: General requirements.
SANS 60669-2-1/IEC 60669-2-1,	Switches for household and similar fixed electrical installations – Part 2-1: Particular requirements – Electronic switches.
SANS 60947-2/IEC 60947-2	Low-voltage switchgear and control gear – Part 2: Circuit-breakers
SANS 60947-3/IEC 60947-3	Low-voltage switchgear and control gear – Part 3: Switches, disconnectors, switch-disconnectors and fuse combination units.
SANS 60947-4-1/IEC 60947-4-1	Low-voltage switchgear and control gear – Part 4-1: Contactors and motor-starters – Electromechanical contactors and motor-starters
SANS 60947-4-2/IEC 60947-4-2,	Low-voltage switchgear and control gear – Part 4-2: Contactors and motor-starters – AC semiconductor motor controllers and starters.
SANS 61084-1/IEC 61084-1	Cable trunking and ducting systems for electrical installations – Part 1: General requirements.
SANS 61238-1/IEC 61238-1	Compression and mechanical connectors for power cables for rated voltages up to 30 kV (Um = 36 kV) – Part 1: Test methods and requirements
SANS 61312-3/IEC/TS 61312-3	Protection against lightning electromagnetic impulse – Part 3: Requirements of surge protective devices (SPDs).
SANS 61386-1/IEC 61386-1	Conduit systems for cable management – Part 1: General requirements.
SANS 61386-21/IEC 61386-21	Conduit systems for cable management – Part 21: Particular requirements – Rigid conduit systems
SANS 61386-22/IEC 61386-22	Conduit systems for cable management – Part 22: Particular requirements – Pliable conduit systems.

LEGISLATION, STANDARDS AND CODES OF PRACTICE – ELECTRICAL RELATED	
NUMBER	**TITLE**
SANS 61386-23/IEC 61386-23	Conduit systems for cable management – Part 23: Particular Requirements – Flexible conduit systems
SANS 61643-1/IEC 61643-1	Low-voltage surge protective devices – Part 1: Surge protective devices connected to low-voltage power distribution systems – Requirements and tests.
SANS 61643-12/IEC 61643-12	Low-voltage surge protective devices – Part 12: Surge protective devices connected to low-voltage power distribution systems – Selection and application principles
SANS 62053-11/IEC 62053-11	Electricity metering equipment (a.c.) – Particular requirements – Part 11: Electromechanical meters for active energy (classes 0,5, 1 and 2).
SANS 62053-21/IEC 62053-21,	Electricity metering equipment (a.c.) – Particular requirements – Part 21: Static meters for active energy (classes 1 and 2).
SANS 62271/IEC 62271 All Parts	High-voltage switchgear and control gear
SANS 62305-1	Protection of structures against lightning Part 1: General principles
SANS 62305-1/IEC 62305-1	Protection against lightning – Part 1: General principles.
SANS 62305-2/IEC 62305-2	Protection against lightning – Part 2: Risk management.
SANS 62305-3/IEC 62305-3	Protection against lightning – Part 3: Physical damage to structures and life hazard
SANS 62305-4/IEC 62305-4	Protection against lightning – Part 4: Electrical and electronic systems within structures
SANS 767-1	Earth leakage protection units – Part 1: Fixed earth leakage protection circuit-breakers.
SANS 780	Distribution transformers
SANS 950	Unplasticized polyvinyl chloride rigid conduit and fittings for use in electrical installations
SANS IEC 60044-1	Instrument Transformers Part 1: Curent Transformers
SANS IEC 60044-2	Instrument Transformers Part 2: Inductive voltage Transformers
SANS IEC 60265-1	High-voltage switches Part 1: Switches for rated voltages above 1 kV and less than 52 kV
SANS IEC 60296	A.C. metal-enclosed switchgear and control gear for rated voltages above 1 kV and up to and including 52 kV
SANS IEC 60439-1	Low-voltage switchgear and control gear assemblies Part 1: Type tested and partially type-tested assemblies
SANS IEC 60529	Degrees of protection provided by enclosures (IP code)

LEGISLATION, STANDARDS AND CODES OF PRACTICE – ELECTRICAL RELATED	
NUMBER	**TITLE**
SANS IEC 60947-1	Low-voltage switchgear and control gear Part 1: General rules
SANS IEC 60947-2	Low-voltage switchgear and control gear Part 2: Circuit-breakers
SANS IEC 60947-4	Low-voltage switchgear and control gear Part 4: Contactors and motor-starters
SANS IEC 60947-5	Low-voltage switchgear and control gear Part 5: Control circuit devices and switching elements
SANS IEC 60947-6	Low-voltage switchgear and control gear Part 6: Multiple function equipment
SANS IEC 61439-1	LV Control-Gear and assemblies
SANS IEC 60076 1-21	Power Transformers
SANS 10086-1	The Installation, maintenance and inspection of equipment used in explosive atmospheres
SANS 10108	The Classification of hazardous locations and selection of electrical apparatus for use in such locations
SANS 10119	Reduction of Explosion Hazards presented by electrical equipment
SANS 10123	Control of static electricity

C3.4 MANAGEMENT OF THE WORKS

C3.4.1 Planning and Programming

The programme referred to in the General Conditions of Contract shall be a network- based programme in accordance with the precedence method; a detailed cash flow graph indicating projected monthly invoice amounts shall also be provided. The critical path of the programme of work shall be clearly indicated and the programme monitored continually and updated monthly by the Contractor in accordance with his progress.

(1) In compiling the programme of work, the Contractor shall incorporate the following important specific requirements and constraints:

(a) The identification and marking of affected services prior to commencing construction works.
(b) The requirements of the Environmental Management Plan (EMP) as specified in the relevant sections of the Particular Specifications and the requirements in respect of inspections and community liaison.
(c) The requirements of the Occupational Health Safety (OHS) Act of 1993 and the Construction Regulations, 2003.
(d) The relocation of services.
(e) An allowance to accommodate "normal" rain days.

(2) The programme submitted shall include at least the following details:

(a) A work breakdown structure identifying the major activity groups.

(b) The critical path shall be indicated and floats on non-critical activities shall be shown.

(c) The working hours per day, week and month allowed for in the programme with details of resource allocations per activity.

(d) Production rates for key activities, e.g. engineering, fabrication, delivery, installation, commissioning, etc.

(3) In addition, the Contractor shall submit to the Engineer at monthly intervals a progress report indicating the following details:

(a) Work completed in previous month and total progress to date, per activity.

(b) Activities behind programme, for which the Contractor shall detail all reasons for such delays as well as the measures to be implemented to make up delays.

(c) A GANTT chart showing the original programme, the latest approved version of the programme, actual progress achieved and revised completion sates, if and when applicable.

- Failure to comply with all of the foregoing requirements shall entitle the Engineer to use a programme based on his own assumptions to evaluate claims for extension of time for completion of the works, or for additional compensation.

C3.4.2 Site establishment

C3.4.2.1 Services and Facilities provided by the Employer.

1. Electricity Supply

The Site is provided with ESKOM/Municipality power. One or more 380 V 50 Hz power supply points can be made available to the Contractor. The contractor shall be responsible for providing an installation which complies in all respects with the standing regulations of the supply authority. Failure on the part of the Contractor to observe these requirements or maintain his installations in terms therefore will result in the termination of electrical power supplies until such time as any shortcomings in this regard are rectified.

No warranty is offered or given by the Employer that the existing available electricity supply will be adequate for the Contractor's purposes nor that such supply is in any way guaranteed.

2. Telephone Services

To be provided by Contractor

3. Area for Contractor's Site Establishment

The proposed site of the Contractor's offices, workshops, stores and plant yard will be indicated on site if requested where applicable.

C3.4.2.2 Facilities provided by the Contractor

The Contractor is required to provide a construction camp including offices, workshop, materials, store, sanitary facilities, offices and equipment for his own use as required.

C3.4.2.3 Site Usage.

The Contractor; his personnel; and his subcontractors; and suppliers; shall confine their activities to the demarcated site of the Works and the direct access roads thereto. Temporary routes shall be subject to the written approval of the Engineer and be subject to the applicable Standardized Specifications.

C3.4.3 Materials and Equipment.

C3.4.3.1 General.

(a) All material and equipment used shall be suitable for working at the temperature and pressures involved under all working conditions "without distortion or deterioration" or the setting up of undue stresses in any part and without impairing the efficiency or reliability of the plant and the strength of its components.

(b) Where corrosion of metal may be expected from contact with water or chemicals or from any other cause, the contractor is to supply materials which are resistant to corrosion. Any equipment or material showing signs of corrosion, tuberculation or pitting before the expiry of the period of maintenance shall be replaced by the contractor at his own expense with material to ERWAT's approval.

(c) The Employer shall have to refuse acceptance of any material or workmanship which is found to be unsound, damaged or contrary to the specification, or which is found, during the period of maintenance or during test at site to be defective or in any way contrary to the specification due to causes within the Contractor`s control or responsibility. All material rejected shall be removed and replaced to the instruction and satisfaction of the ERWAT, whose decision in the matter shall be binding on the Contractor.

(d) Where reference is made to standard specifications, the latest edition with amendments, up to the tender closing date shall apply.

C3.4.3.2 Quality Management.

(a) Applicable quality assurance standards.

i. The Tenderer shall provide a coordinated and formally documented statement of his quality management objectives, policies, organization and procedures, for the compulsory implementation of SANS 9001:1987. The same applies to 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 and they may be done at any time on any material.

ii. 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 ERWAT. The inspection on which this assessment report is based shall have taken place not more the twelve months prior to the closing date for this tender.

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

(b) ERWAT quality assurance representative.

ERWAT may elect to appoint an independent quality assurance representative to act in a surveillance capacity on his behalf for part or the entire contract.

(c) Quality assurance staff.

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

ii. The curriculum vitae of quality specialists shall be submitted to the ERWAT at the time of tender. ERWAT shall approve the proposed quality staff in writing and changes of staff shall require written agreement with ERWAT.

iii. If it is considered that the proposed quality specialist and/or quality staff is inadequate or becomes inadequate during the course of the contract and at his own cost an independent quality control specialist and/or sufficient and suitably qualified quality staff approved by ERWAT.

(d) Classification of material.

The above-mentioned Code of practice, i.e. a quality system for manufacture and installation, will apply only to certain critical material, products and services indicated in the tender documents, of which considers the manufacturing and installation stages of such critical importance that quality assurance by the contractor shall be of an even higher level than that prescribed.

(e) Quality Control Plan.

i. Quality control plans are required for every stage of the project implementation process. The stages are divided as follows:

1. Pre-manufacturing Quality control
2. Material Quality control
3. Manufacturing or constructing Quality control
4. Installation Quality control
5. Commissioning Quality control

ii. The Quality control plan will be based on the project plan progress and quality evaluation intervention will be implemented at predetermined milestones.

iii. At these milestones hold points will allow for Quality control inspection to take place before any further activities are undertaken.

iv. The inspection details and documentation will be determined the product service or activity.

v. In the case of a manufacturing process the manufacturer will be required to submit a QCP and related documentation to ERWAT to be approved with regards to the specific product. In the case of construction or installation work the supplier will be required to submit a detailed method statement that will be the bases of the QCP.

vi. The same will apply to the commissioning process.

vii. The following document is an example of the proposed format for a QCP.

viii. The basic hold points will be for:

1. Dimensional inspection-D
2. Visual inspection - V
3. Functional tests - F
4. Factory acceptance test - FAT
5. Site acceptance test - SAT

ix. Other hold points may be added if required and alternative QCP may be used based on the approval from ERWAT.

x. Quality control plan format below is a basic guide adjustment and enhancement may be added based on contractual requirements.

ERW2510/02: RE-TENDER FOR THE APPOINTMENT OF PANEL SERVICE PROVIDER/S IN A FRAMEWORK CONTRACT FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES FOR VARIOUS SITES AT EKURHULENI WATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36) MONTHS
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C3.5.7 ANNEXURE E ACKNOWLEDGEMENT OF H & S SPECS

C3.5. INTRODUCTION AND BACKGROUND

C3.5.1.1 BACKGROUND TO THE HEALTH AND SAFETY SPECIFICATION

The Construction Regulations 2014 place the onus on the Client to prepare a preconstruction Health and Safety specification, highlighting all risks not successfully eliminated during design setting standards for Health and Safety during construction phase.

C3.5.1.2 PURPOSE OF THE HEALTH AND SAFETY SPECIFICATION

To assist in achieving compliance with the Occupational Health and Safety Act 85/1993 and the promulgated Construction Regulations 2014 in order to reduce incidents and injuries. These specifications shall act as the basis for the drafting of the construction phase Health and Safety plan by the Contractor.

The specification sets out the requirements to be followed by the Principal Contractor and their Contractors so that the Health and Safety of all persons potentially at risk may receive the same priority as other facets of the project e.g. Cost, programmed, environment, quality etc.

C3.5.2 HEALTH AND SAFETY SPECIFICATION

C3.5.2.1 SCOPE

This specification covers the requirements for eliminating and mitigating incidents and injuries on the **ERW2510/02: RE-TENDER FOR THE APPOINTMENT OF PANEL SERVICE PROVIDER/S IN A FRAMEWORK CONTRACT FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES FOR VARIOUS SITES AT EKURHULENI WATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS) FOR 36 MONTHS**

The scope also addresses legal compliance, hazard identification and risk assessment, risk control and promoting a Health and Safety culture amongst those working on the project. The specification also makes provision for the protection of those persons other than employees.

C3.5.2.1.2 Provision for Health & Safety Cost

The Principal Contractor must make adequate provision for the cost of Health & Safety Measures during the construction process as required by the Construction Regulation 5(1)(g).

The health and safety cost will be recovered from the provisional sum allocated for this purpose.

C3.5.2.2 INTERPRETATIONS

C3.5.2.2.1 APPLICATION

This specification is a compliance document drawn up in terms of the South African legislation and is therefore binding. It must be read in conjunction with relevant legislation as noted previously.

C3.5.2.2.2 DEFINITIONS

The definitions as listed in the Occupational Health and Safety Act 85/1993 and Construction Regulations (July 2003) shall apply.

C3.5.2.3 MINIMUM ADMINISTRATIVE REQUIREMENTS

C3.5.2.3.1 NOTIFICATION OF INTENTION TO COMMENCE CONSTRUCTION WORK

The Principal Contractor shall notify the provincial Director of the Department of Labour in writing that construction work commences.

C3.5.2.3.2 ASSIGNMENT OF CONTRACTOR'S RESPONSIBLE PERSONS TO SUPERVISE HEALTH AND SAFETY ON SITE

The Principal Contractor shall submit supervisory appointments as well as any relevant Appointments in writing (as stipulated by the OHSA and Construction Regulations), prior to commencement of work. Proof of competency must be included. See annexure B.

C3.5.2.3.3 COMPETENCY FOR CONTRACTOR'S APPOINTED COMPETENT PERSON

The Principal Contractors' competent persons for the various risk management portfolios shall fulfil the criteria as stipulated under the definition of Competent in accordance with the Construction Regulations (July 2003). Proof of competence for the various appointments must be included.

C3.4.5.3.4 COMPENSATION OF OCCUPATIONAL INJURIES AND DISEASES ACT 130 OF 1993 (COIDA)

The Principal Contractor shall submit a letter of good standing from their Compensation Insurer FEM or Compensation Commissioner to the Client's Representative as proof of registration. Contractors shall submit proof of registration to their Contractor before they commence work on site.

C3.5.2.3.5 OCCUPATIONAL HEALTH AND SAFETY POLICY

The Contractor and their Contractors shall submit a Health and Safety policy signed by their Chief Executive Officer. The Policy must outline objectives and how they will be achieved and implemented by the Company / Contractor.

C3.5.2.3.6 HEALTH AND SAFETY ORGANOGRAM

The Principal Contractor and their Contractors shall submit an organogram, outlining the Health and Safety site Management Structure including the relevant appointments / competent persons. In cases where appointments have not been made, the organogram shall reflect the intended positions. The organogram shall be updated when there are any changes in the site Management Structure.

C3.5.2.3.7 PRELIMINARY HAZARD IDENTIFICATION AND RISK ASSESSMENT AND PROGRESS HAZARD IDENTIFICATION AND RISK ASSESSMENT.

- Roof Work
- Mobile Cranes Management System
- Mechanical
- Working at heights, as per CR8 – Fall Protection Plan,
  - Scaffolding Management
  - Person falling
  - Material falling
  - Protection of decking edges finished floor slab edges, stairways, floor penetrations, lift shafts, any other openings and areas from where persons may fall.
- Excavations
  - Collapse of Walls
  - People/Equipment falling in Excavations
  - Shoring
  - Underground services
  - Drainage
  - Pipe-Jacking operations
- Confined Space entry
- Formwork and Support Work
  - Casting of Concrete
- Manual and Mechanical Handling
  - Lifting and placement of pipes
  - Overhead works
- Noise Control
- Dust Control

Principal Contractor to ensure that these risk assessments as well as other risks identified by them are updated monthly or as the risk change and communicated to all relevant parties. CR 7(4)

C3.5.2.3.8 HEALTH AND SAFETY REPRESENTATIVE(S)

The Principal Contractor and their Contractors shall ensure that Health and Safety Representative(s) are appointed under consultation and trained to carry out their functions. The appointment must be in writing.

The Health and Safety Representative shall carry out regular inspections, keep records and report all findings to the Responsible Person forthwith and at Health and Safety meetings.

C3.5.2.3.9 HEALTH AND SAFETY COMMITTEES

Principal Contractor shall organize monthly Health & Safety meetings. Minutes and records shall be kept. Principal Contractors Health & Safety representative and responsible person shall attend this meeting.

C3.5.2.3.10 HEALTH AND SAFETY TRAINING

C3.5.2.3.10.1 Induction

Principal Contractor shall ensure that all undergo site-specific induction presented by a competent person and proof of it too.

C3.5.2.3.10.2 Awareness

The Principal Contractor shall ensure that, on site, periodic toolbox talks take place at **least once per week**. These talks should deal with risks relevant to the construction work at hand. A record of attendance shall be kept in the Health and Safety file. All Principal Contractor have to comply with this minimum requirement.

C3.5.2.3.10.3 Competency

All competent persons shall have the knowledge, experience, training and qualifications specific to the work they have been appointed to supervise, control, and carry out. This will have to be assessed on a regular basis e.g.

Periodic audits by the Client's Health & Safety Agent, progress meetings, etc. The Contractor is responsible to ensure that competent Contractors are appointed to carry out construction work.

C3.5.2.3.11 GENERAL RECORD KEEPING

The Principal Contractor and their Contractors shall keep and maintain Health and Safety records to demonstrate compliance with this Specification, with the OHS Act 85/1993, and with the Construction Regulations (July 2003). The Principal Contractor shall ensure that all records of incidents / accidents, emergency procedures training, inspections, audits, etc. are kept in a Health and Safety file held in the site office. The Principal Contractor must ensure that every sub-Contractor keeps its own Health and Safety file, maintains the file and make it available on request (The file must include the Sub-Contractor's health and safety plan). These records are crucial for inclusion in the Principal Contractors' consolidated health and safety file for handover to the Client on completion of construction work.

C3.5.2.3.12 HEALTH AND SAFETY AUDITS, MONITORING AND REPORTING

The Client's Health & Safety Agent shall conduct monthly Health and Safety audits of the work. Operations including a full audit of physical site activities as well as an audit of the administration Health and Safety. *The Principal Contractor is obligated to conduct similar audits on their Contractors.*

Detailed reports of the audit findings and results shall be reported on at all levels of project management meetings / forums. Copies of the Client audit reports shall be kept in the Primary Project Health and Safety file while the Principal Contractor audit reports shall be kept in their file, a copy being forwarded to the Client. Principal Contractor has to audit their Contractors and keep records of these audits in their Health and Safety files, available on request.

C3.5.2.3.13 EMERGENCY PROCEDURES

The Principal Contractor shall compile a comprehensive Evacuation Plan with assemble point and contact details in the case of any emergency supplied by the Client's Health & Safety Agent.

C3.5.2.3.14 FIRST AID BOXES AND FIRST AID EQUIPMENT

The Principal Contractor and their Contractors shall appoint in writing First Aider(s). The appointed First Aider(s) are to be sent for accredited first aid training. Valid certificates are to be kept on site. All Principal Contractor with more than 5 employees shall supply their own first aid box. Principal Contractor with more than 10 employees shall have trained, certified first aider on site at all times & First aid Box adequately stocked at all times.

C3.5.2.3.15 ACCIDENT / INCIDENT REPORTING AND INVESTIGATION

Injuries are to be categorized into first aid, medical, disabling and fatal. The Principal Contractor must stipulate in its construction phase Health and Safety plan how it will handle each of these categories. When reporting injuries to the Client, these categories shall be used. All contractors must investigate and report on the 4 categories of injuries to the Principal Contractor at least monthly. Contractors must investigate injuries and accidents involving their employees within seven days of the incident in the form on Annexure1 (General Administrative Regulations) and forward a copy on the investigation report to the principal contractor forthwith. ***All incidents reportable in terms of the provision of Section 24 of the OHS Act 1993 must be reported to the local Dept. of Labour in the prescribed manner.***

The Principal Contractor must report all injuries to the Client in the form of a spreadsheet, which includes all contractor injuries/incidents and man-hours worked for the month as well as the cumulative total. This report must be done on a monthly basis and must form part of the Principal Contractor's progress report.

C3.5.2.3.16 HAZARDS AND POTENTIAL SITUATIONS

The Principal Contractor shall immediately notify the Client's Health & Safety Agent of any hazardous or potentially hazardous situations that may arise during the performance of construction activities.

C3.5.2.3.17 PERSONAL PROTECTIVE EQUIPMENT (PPE) AND CLOTHING

The Principal Contractor shall ensure that all workers are issued and wear hard hats, protective footwear and overalls. The Principal Contractor and their Contractors shall make provision and keep adequate quantities of SABS or SANS approved PPE on site at all times.

C3.5.2.3.18 OCCUPATIONAL HEALTH AND SAFETY SIGNAGE

The Principal Contractor shall provide adequate on-site OHS signage. Including but not limited to: "no unauthorized entry", "report to site office", "site office", and "hardhat area". Signage shall be posted up at all entrances to site as well as on site in strategic locations e.g. Access routes, entrances to structures and buildings, scaffolding and other potential risk areas / operations. All Contractors to adhere to it.

C3.5.2.3.19 CONTRACTORS

The Principal Contractor shall ensure that all Contractors appointed by them comply with this Specification, the OHS Act 85/1993, and Construction Regulation (July 2003).

The Principal Contractor may only appoint a sub-contractor after approving the sub-contractor's health & safety plan. The Principal Contractor must audit each of its Contractors on a monthly basis, with audit reports filed in the health & safety file on site. The audit must include an administrative assessment as well as a physical inspection of the contractor's health & safety system.

The Principal Contractor must stop any Contractor from carrying out construction work that is not in accordance with the Principal Contractor's or Contractor's health & safety plan or if there is an immediate threat to the health and safety of persons.

The Principal contractor shall take all reasonable steps necessary to ensure co-operation between all

Contractors to enable each of those Contractors to comply with the provisions of these regulations;

The Principal Contractor must ensure that their Contractor is registered and in good standing with a recognized compensation fund or with a licensed compensation insurer prior to work commencing on site;

The Principal Contractor must ensure that potential Contractors submitting tenders have made provision for the cost of health and safety measures during the construction process; The Principal Contractor shall discuss and negotiate with their Contractor the contents of the health and safety Plan and shall finally approve that plan for implementation.

C3.5.2.3.20 PENALTIES

Penalties may be imposed for ongoing non-compliance to the provisions of the Client's Health and Safety specification and Principal Contractors' health & safety plans. The penalty procedure shall consist of a written warning with a compliance time frame. ***Failure to comply within the time frame stipulated would result in a R1000 penalty per non-compliance item per day that the non- compliance persists.***

C3.5.2.3.21 A HEALTH AND SAFETY OFFICER CR 6.6

The Principal Contractor shall provide a full-time safety officer on site and proof of their competency to be attached to their appointment.

C3.5.2.4 PHYSICAL REQUIREMENTS

C3.5.2.4.1 CIVIL WORK

Principal Contractor to ensure that the Contractor complies with Construction regulation 21 and that the following is undertaken during civil work:

- A competent site supervisor to be on site at all times.
- Plant and equipment inspected daily and registers kept.
- All operators of plant and vehicles: trained, competent and physically and psychologically fit.
- Certificates to be put in their Health & Safety File.
- Workers that are working close to the traffic to be visible and are to wear reflective vests.
- Adequate safety signage to be posted ahead of any work area in the road.
- All signage, including delineators to be maintained and kept cl`ean at all times.
- The required PPE must be worn at all times (Hard hats, safety shoes, overalls, etc.)
- Risk assessments to be conducted on all high-risk activities.
- Speed reduction road signs to be posted.
- Dust control practices used to limit dust generation.

Laying of pipes / Backfilling

- A competent site person to supervise lifting operations at all times.
- No employee to stand under any suspended loads.
- Loads must not be slewed over personnel, plant, site huts or property.
- All lifting equipment and accessories must be marked with the Safe Working Load.

- Slings must not be placed on sharp edges.
- Workers to wear proper PPE at all times.
- Work to be stopped when weather conditions prevent safe operations during trenching work
- or lying of pipes.
- Everyone to stand clear of any area being backfilled by mobile plant.

C3.5.2.4.2 EXCAVATIONS, SHORING, DEWATERING OR DRAINAGE

The Principal Contractor and any relevant Contractors shall make provision at tendering stage for shoring, dewatering or drainage of any excavations as per this specification.

The Principal Contractor shall make sure that:

- The excavations are inspected before every shift, after any blasting, after an unexpected fall
- of ground, after any substantial damage to the shoring and after rain, records kept thereof.
- Safe work procedures have been communicated to the workers.
- The safe work procedures are enforced and maintained by the Contractor's Responsible
- Persons at all times,
- The requirements as per section 11 of the Construction Regulations are adhered to.
- Where pipe-jacking activities are taking place safe work procedures/method statements to be submitted to Client's Health & Safety Agent prior to these activities.

Method statement to be developed where shoring will be done, especially near public roads and also where explosives will be / are used.

C3.5.2.4.3 CONFINED SPACE ENTRY

The Principal Contractor to prepare a confined space procedure in line with General Safety Regulation (5) OHSA Act

C3.5.2.4.4 EXISTING STRUCTURES

Any adjacent structures that may be affected by work must be considered in the planning process. Precautionary measures must be detailed and applied to prevent damage, uncontrolled collapse of existing structures and/or loss to property and persons during the entire construction phase.

C3.5.2.4.5 EDGE PROTECTION AND PENETRATIONS

The Principal Contractor must ensure that all exposed edges and openings are guarded and demarcated at all times until permanent protection has been erected. The Principal Contractors' risk assessment must include these items finished floor slab edges, floor penetrations, and all other openings and areas where a person may fall.

C3.5.2.4.6 HAZARDOUS CHEMICAL SUBSTANCES (HCS)

The Principal Contractor working with Hazardous chemical substances to obtain copies of all the (MSDS) Material Safety Data Sheets and this is to be kept on site and a copy to be forwarded to Client's Health &

Safety Agent.

C3.5.2.4.7 STACKING OF MATERIALS

The Principal Contractor shall ensure that there are sufficient appointed stacking supervisors and that all materials and equipment is stacked and stored safely. Double handling of material should be avoided and for this purpose, pallets and other stacking options should be used.

C3.5.2.5 PLANT AND MACHINERY

C3.5.2.5.1 CONSTRUCTION PLANT

The Principal Contractor shall ensure that all such plant complies with the Requirements of the OHS Act 85/1993 and Construction Regulations (July 2003). The Principal Contractor shall inspect and keep records of inspections of construction plants used on site. Only authorized / competent persons are to use machinery under proper supervision. Appropriate PPE must be provided and maintained at all times.

C3.5.2.5.2 VESSELS UNDER PRESSURE (VUP) AND GAS BOTTLES

The Principal Contractor shall comply with the Vessels under Pressure Regulations, including:

Providing competency and awareness training to the operators, Providing PPE, Inspect Equipment regularly and keep record of inspections, Provide appropriate firefighting equipment (Fire Extinguishers) on hand.

C3.5.2.5.3 FIRE EXTINGUISHERS AND FIRE FIGHTING EQUIPMENT

The Principal Contractor shall provide adequate, regularly serviced firefighting equipment located at strategic points on site, specific to the classes of fire likely to occur. The appropriate notices and signs must be posted as required.

C3.5.2.5.4 HIRED PLANT AND MACHINERY

The Principal Contractor shall ensure that any hired plant and machinery used on site is safe for use. The necessary requirements as stipulated by the OHS Act 85/1993 and Construction Regulations (July 2003) shall apply. The Contractor shall ensure that operators hired with machinery are competent and that certificates are kept on site in the Health and Safety file. All relevant Contractors must ensure the same.

C3.5.2.5.5FORMWORK AND SUPPORT WORK FOR STRUCTURES

The Principal Contractor shall ensure that the provisions of section 10 of Construction Regulations (July 2003) are adhered to. These provisions must include but not be limited to ensuring that all equipment used is examined for suitability before use, that all formwork and support work is inspected by a competent person immediately before, during and after placement of concrete or any other imposed load and thereafter on a daily basis until the formwork and support work has been removed. Records of all inspections must be kept in a register on site.

C3.5.2.5.6 GENERAL MACHINERY

The Principal Contractor shall ensure compliance with the Driven Machinery Regulations, which include

inspecting machinery regularly, appointing a competent person to inspect and ensure maintenance, issuing PPE, and training those who operate the machinery.

C3.5.2.5.7 HIGH VOLTAGE & ELECTRICAL INSTALLATIONS

If high voltage electrical lines are present on the site perimeter, the Contractor must be aware of the location of them and are to demarcate its positions.

These demarcations must be maintained throughout the duration of the construction work. The minimum safety clearances as per Electrical Machinery Regulation 15 must be adhered to**. All installation must comply with SANS 10142 & the regulations of the OHS Act 85/1993 and Construction Regulation 22.**

All temporary electrical installations must be inspected at least weekly.

C3.5.2.5.8 PORTABLE ELECTRICAL TOOLS AND EXPLOSIVE POWERED TOOLS

The Principal Contractor shall ensure that use and storage of all explosive powered tools and portable electrical tools are in compliance with relevant legislation.

The Contractor shall ensure that all electrical tools, electrical distribution boards, extension leads, and plugs are kept in safe working order. Regular inspections and toolbox talks must be conducted to make workers aware of the dangers and the control measures that are to be implemented e.g. Personal protection equipment, guards, etc.

A competent person to undertake routine inspections and records are to be kept on file. Only authorized trained persons are to use the tools, the safe work procedures to apply. Awareness training to be carried out, compliance enforced at all times, and PPE are provided and maintained,

C3.5.2.5.9 WELDING EQUIPMENT

- Only authorised / trained persons to use the equipment.
- The operators are to wear correct PPE - eye/ face/foot/body/respirator.
- Flashback arrestors are to be fitted on cylinders and gauges when using gas welding equipment.
- Fire prevention methods to be applied.
- Where electric arc welders are used, equipment only to be used in a dry area, protected from
- wetness.

C3.5.2.5.10 PUBLIC AND SITE VISITOR HEALTH AND SAFETY

Both the Client and the Principal Contractor have a duty in terms of the OHS Act 85/1993 to do all that is reasonably practicable to prevent members of the public and site visitors from being affected by the construction activities. Site visitors must be briefed on the hazards and risks they may be exposed to and what measures are in place or should be taken to control these hazards and risks. A record of these inductions must be kept on site in accordance with the Construction Regulations. Principal Contractor to ensure that no unauthorized personal enter the construction area.

Method statements are to be drafted on traffic management on site, including work near the public.

C3.5.2.5.11NIGHT WORK

Adequate lighting to be provided where required. Personnel should not work alone at night.

C3.5.2.6 OCCUPATIONAL HEALTH

C3.5.2.6.1 OCCUPATIONAL HYGIENE

Exposure of workers to occupational health hazards and risks is very common in any work environment, especially in construction. Occupational exposure is a major problem, and Principal Contractor must ensure that proper health and hygiene measures are put in place to prevent exposure to these hazards. The Risk to be looked at includes:

Ventilation
Adequate ventilation / extraction / exhausting in hazardous areas e.g. chemicals / adhesives / welding / petrol or diesel/ motors running and in confined spaces / basements.

Noise
Tasks identified where noise exceeds 85 dBa. All reasonable steps are to be taken to reduce noise levels. Hearing protection is to be used where noise levels cannot be reduced to below 85 dBa.

Dust
Principal Contractor to ensure that employees working with grinders, saws & jackhammers, etc. are issued with dust masks and dust exposure to be minimized at all times.

C3.5.2.6.2 WELFARE FACILITIES

The Principal Contractor will provide ablution facilities for all on site, including changing facilities & hand washing facilities. Safe and adequate facilities will be provided. Waste bins must be strategically placed and emptied regularly. Safe and clean storage areas must be provided for workers to store personal belongings and personal protective equipment.

C3.5.2.6.3 ALCOHOL AND OTHER DRUGS

The Principal Contractor is to ensure that no alcohol and other drugs are allowed on site. No person may be under the influence of alcohol or any other drugs while on the construction site. Any person on prescription drugs must inform his/her superior, who shall in turn report this to the Contractor forthwith. Any person suffering from any illness / condition that may have a negative effect on his/her safety performance must report this to his/her superior, who shall in turn report this to the Principal Contractor forthwith.

Any person suspected of being under the influence of alcohol or other drugs must be sent home immediately, to report back the next day for a preliminary inquiry. The Contractor concerned must follow a full disciplinary procedure and a copy of the disciplinary action must be forwarded to the Principal Contractor for his records.

Any person suspected of being under the influence of alcohol or other drugs must be sent home immediately, to report back the next day for a preliminary inquiry. The Contractor concerned must follow a full disciplinary procedure and a copy of the disciplinary action must be forwarded to the Principal Contractor for his records.

HEALTH AND SAFETY SPECIFICATIONS (HSS)

PROJECT: .: ERW2510/02 RE- TENDER FOR THE APPOINTMENT OF PANEL SERVICE PROVIDER/S IN A FRAMEWORK CONTRACT FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES FOR VARIOUS SITES AT EKURHULENI WATER CARE WOR

Annexure A

The Principal Contractor must submit compliance with Annexure A within **one week** of receiving this Specification.

HSS Item no.	REQUIREMENT	OHSA REQUIREMENT	SUBMISSION DATE
2.3.1	Assignment of Responsible Persons to supervise Construction work	OHS Act (section 16.2) & Construction Regulation 6	Before commencement on site
2.3.2	Competence of Responsible Persons	OHS Act (section 16.2) & Construction Regulation 6	Together with H & S plan
2.3.3	Compensation of Occupational Injuries and Diseases - Proof of Registration- FEM or CC	COIDA	Together with H & S plan
2.3.4	Occupational Health and Safety Policy	OHS Act	Together with H & S plan
2.3.5	Health and Safety Organogram	Client Requirement	Together with H & S plan
2.3.6	Initial Hazard Identification and Risk Assessment based on the Client/s assessment	Construction Regulations.	Together with H & S plan
2.3.7	Health and Safety Representative	OHS Act	Submit as soon as There are more than 20 employees on site
2.3.8	Detailed breakdown of Safety cost	OHS Act	During SLA

PROJECT: .: ERW2510/02 RE- TENDER FOR THE APPOINTMENT OF PANEL SERVICE PROVIDER/S IN A FRAMEWORK CONTRACT FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES FOR VARIOUS SITES AT EKURHULENI WATER CARE WOR

(SLA USE ONLY WATERMARK TO BE ADDED)

Detailed breakdown of Safety cost (Construction Regulations 2014)			
Tenderer (Company)	**Responsible Person**	**Designation**	**Date**
Project/Tender Title	**Project/Tender No.**	**Project Location / Description**	

#	Cost element	Unit Cost (R)	# of Units	Total Cost (R) (VAT incl)
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
Total Health and Safety Cost (R VAT incl)				

N.B: The details in relation to this table will be implemented during the Service Level Agreement

(SLA) stage

HEALTH AND SAFETY SPECIFICATIONS (HSS)

PROJECT: ERW2510/02:RE-TENDER FOR THE APPOINTMENT OF PANEL SERVICE PROVIDER/S IN A FRAMEWORK CONTRACT FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES FOR VARIOUS SITES AT EKURHULENI WATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36.) MONTHS

Annexure B

The Principal Contractor shall make the following appointments according to the initial risk assessment: (further appointments could become necessary as the project progresses). Contractors shall make the relevant appointments as per their operations. The Client reserves the right to insist on any appointment as determined by its risk assessment of the Contractor concerned.

APPOINTMENT	OHSA REFERENCE	REQUIREMENT
CEO Assignee	Section 16(2)	A competent person to assume the overall H & S responsibility - Contractor's Responsible Person
Construction Work Supervisor	CR 6.1	A competent person to supervise and be responsible for Health and Safety related issues on site
Subordinate Construction Work Supervisors	CR 6.2	A competent person to assist with the daily supervision of construction / building work. The person(s) assist the Construction Work Supervisor
Health and Safety Representative(s)	Section 17	A competent person(s) to assist with identifying risks, attend H & S meetings, conduct inspections, assist with investigations, etc.
Incident Investigator	GAR 8	A competent person to investigate incidents / accidents on site, this could either be: * The 6.1 or 6.2 Person * H & S Representative * Member of the H & S Committee * H & S officer
Risk Assessment Co-ordinator	CR 7	A competent person to co-ordinate all assessments on behalf of the Principle Contractor. The same applies to Contractors.
Fall protection plan co-ordinator	CR 8	A competent person to prepare and amend the fall protection plan
First Aiders	GSR 3	A qualified person to address all on site first aid cases
Lifting machine and equipment Inspector	DMR 18	A competent person to inspect lifting machines and equipment
Lifting tackle Inspector	DMR 18	A competent person to inspect lifting tackles
Scaffolding Inspector	SANS 10085-1:2004	A competent person to inspect scaffolding before use and every time after bad weather, etc.
Scaffolding Erector	SANS 10085-1:2004	A competent person to erect scaffolding

APPOINTMENT	OHSA REFERENCE	REQUIREMENT
Scaffolding Supervisor	SANS 10085-1:2004	A competent person to supervise scaffolding
Stacking Supervisor	CR 26	A competent person to supervise all stacking and storage operations
Explosive powered tools Inspector / Supervisor	CR 19	A competent person to inspect and clean the tools daily and controlling all operations thereof
Temporary electrical installations Supervisor	CR 22	A competent person to control all temporary electrical installations
Fire-fighting equipment Inspector	CR 27	A competent person to inspect fire-fighting equipment

OTHER REQUIREMENTS

PROJECT: ERW2510/02:RE-TENDER FOR THE APPOINTMENT OF PANEL SERVICE PROVIDER/S IN A FRAMEWORK CONTRACT FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF ELECTRICAL DISTRIBUTION SWITCHBOARD AND MOTOR CONTROL CENTRES FOR VARIOUS SITES AT EKURHULENI WATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36.) MONTHS

Annexure C

The Principal Contractor shall comply but not be limited to the following requirements: Reports on these to the addressed to the Client at progress meetings or at least monthly whichever is sooner. A report with supporting documents shall be tabled at the Contractor/s monthly Health and Safety meeting.

WHAT	WHEN	OUTPUT	ACCEPTED BY CLIENT WITH DATE
Construction-phase Health and Safety plan	Within one weeks of receipt of the Spec.	Principal Contractor to report on status of Principal Contractors' Health and Safety plans	
Health and Safety file	Open file when construction begins and maintain throughout	Have file on hand at meetings	
Awareness Training (Tool Box Talks)	At least weekly	Attendance registers	
Health and Safety Reports	Monthly	Report covering: * Incidents/Accidents and Investigations * Non conformances by employees & contractor * Internal & External H & S audit reports	
Risk assessment	Updated and signed off at least monthly	Documented risk assessment	
Method statements (safe work procedures)	Drawn up before workers are exposed to new risks	Documented set of safe work procedures (method statements) updated and signed off	
General Inspections	Weekly and Daily	OHS Act compliance Registers: * Scaffolding * Excavations * Formwork & support work * Explosive tools * Temporary electrical Installations	
General Inspections	Monthly	* Fire-fighting equipment * Portable electrical equipment * Ladders	
General Inspections	3 - Monthly	* Lifting tackle * Oxy-acetylene cutting and welding sets * Fall prevention and arrest equipment	
General Inspections	6 - Monthly	* Lifting machines	
Workman's Compensation	Updated Weekly	Table list of Principal Contractors' workman's compensation proof of good standing	

Construction site rules & Section 37.2 Mandatory Agreement	Update Weekly	Table a report of all signed up Mandatory's	

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Annexure D

The following checklist shall be used to approve the Health and Safety File

CONTRACTOR SAFETY FILE ASSESSMENT CHECKLIST

SCOPE/COVERAGE:	**Contractor Safety file Assessment**	**ERWAT CONTRACTING DEPT:**	
CONTRACTOR NAME:		**INSPECTION BY:**	
SERVICE RENDERED:		**INSPECTION DATE:**	

No.	**Are items on file and meet requirements?**	**Approved**	**Not Approved**	**N/A**
1	Scope of Work			
2	Valid Letter of Good Standing with Compensation Fund or licensed insurer			
3	Public Liability Insurance			
4	Notification Letter of Construction Work (If Applicable)			
5	Health and Safety Organogram			
6	All required legal appointments signed and on file i.e Section 16(2), SHE Reps, First Aiders, Risk Assessor, Incident Investigators, Construction Work Appointments etc			
7	All employees have valid Medical Certificate of Fitness			
8	Health and Safety Policy			
9	Health & Safety Plan,			
10	Client Health and Safety Specification			
11	Section 37(2) Mandatary Agreement			
12	Risk Assessments: Method Statements: Safe Operating Procedures (including LOTO where applicable)			
13	Incidents / Accidents Register and Investigation Reports			

14	Emergency Plan			
15	Health and Safety Induction			
16	Documented Proof of Daily Toolbox Safety Talks/ DSTI			
17	Personal Protective Equipment (PPE)			
18	Equipment Registers, Inspections Checklist and testing certificates			
19	List of Hazardous Chemicals and MSDS (If applicable)			
20	Environmental Management Plan			
21	Fall Protection Plan (If Applicable)			
22	Training Records and Competency Certificates			
23	Other, as per scope of work			

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Annexure E

Acknowledgement of Receipt of the Health and Safety Specifications:

I,_____representing

_____Contractor

_____ _____

Have satisfied myself with the content of the construction Health and Safety Specification and shall ensure that the Contractor and its personnel comply with all obligations / requirements in respect thereof.

_____ _____

COMMENTS:

C3.6 ENVIRONMENTAL MANAGEMENT DURING CONSTRUCTION

C3.6.1 INTRODUCTION

A comprehensive Environmental Scoping Report was prepared as part of the environmental and social assessment of the preceded project. Included in the report is an Environmental Management Plan (EMP) and the purpose of this Particular Specification is to make the Contractor aware of his obligations in terms of the EMP during construction and to afford him the opportunity to insert rates and prices in the Schedule of Quantities to cover these obligations.

Sub-Contractors and their employees must comply with all the requirements of this specification. Absence of specific reference to any sub-contractor in any specification does not imply that the sub-contractor is not bound by this specification.

The Contractor must arrange for all his employees and those of his sub- contractors to be informed of this specification before the commencement of construction to ensure:

(a) Basic understanding of the key environmental features of the work site and environments, and
(b) Familiarity with the requirements of this document.

C3.6.2 MONITORING AND ASSESSMENT OF COMPLIANCE.

The environmental management performance of the Contractor (including his subcontractors and staff) will be reviewed on a regular basis by the Employer's ECO. The Contractor will be deemed not to have complied with the EMP if:

(a) There is evidence of negligence or recklessness resulting in the contravention of any of the clauses, both within and outside the boundaries of the construction site;
(b) The Contractor fails to comply with corrective or other instructions within a time specified by the Engineer;
(c) The Contractor fails to respond adequately in terms of the contract, to complaints from the public.
(d) The Contractor will be given a period of 2 weeks after the commencement date of the contract, before compliance is enforced.

Via these environmental specifications the Contractor has been made aware of what actions are required of him and/or his subcontractors. Certain do's and don'ts have been given and onus for these controls rests with the Contractor as he is the only person capable of controlling these aspects and a fine/reward system will be implemented to encourage compliance.

Compliance to the EMP will be reported by the ECO in the form of a monthly Environmental Compliance Report which will include all transgressions of the EMP and the environmental specification and rate them in order of significance. The Environmental Compliance Report will be forwarded to the Engineer, the Employer and GDACE on a monthly basis.

A percentage point will be given based on a questionnaire which is attached to the Report. Any percentage compliance above 80% will be considered to be within acceptable limits. If the Contractor has not complied with any of the clauses of the EMP, or the score in the monthly environmental audit drops to below 80% compliance, the ECO will advise the Engineer who shall order the Contractor in terms of the contract to remedy the deficiencies. Failure on the part of the Contractor to carry out such order shall be dealt with in terms of the contract.

Should compliance drop below 60% the ECO shall immediately advise the Engineer who shall have

the right in terms of the contract to order in writing the suspension of the Works.

C3.6.3 COMPLIANCE WITH SANS 1200

All environmental clauses stated in the SANS 1200 "Standard Specification for Civil Engineering Construction" as amended in this document shall be adhered to by the Contractor. Where the EMP is in conflict with the Standard Specification, the EMP shall take precedence.

C3.6.4 SITE MANAGEMENT

C3.6.4.1 General

The Contractor shall draw up a plan of all parts of the construction site, showing the layout of site establishment, stockpiles, planned access and circulation routes, etc. to depict the scope of his planned operations. The plan shall be submitted to the ECO for comment and approval by the Engineer.

The Works area will be indicated on the layout plan and shall never exceed the boundaries of the site at any given location during the construction period.

Every precaution shall be taken, in accordance with this specification, to prevent pollution of air, soil, ground, and surface water as a result of construction or associated activities.

All equipment must be inspected regularly for oil or fuel leaks before it is operated. Leakages must be repaired on mobile equipment or containment trays placed underneath immobile equipment until such leakage has been repaired.

C3.6.4.2 Housekeeping

The Contractor shall ensure that his working areas are kept clean and tidy at all times. The ECO shall inspect these areas on a regular basis.

C3.6.4.3 Works area

Routes for temporary access and haul roads shall be located within the approved Works area and vehicle movement shall be confined to these roads. Movement of vehicles outside the Works area shall not be permitted without authorisation from the Engineer, after consultation with the ECO.

All construction activities shall be restricted to working areas designated on the drawings and/or demarcated and approved by the Engineer. Materials, including spoil, shall only be stockpiled in the Works area.

C3.6.4.4 Fire risk and burning

Burning of vegetation including tree trunks and stumps cut during site clearing and establishment shall not be permitted.

The Contractor shall ensure that the risk of fire at any location on the site is kept to a minimum.

The Contractor shall supply fire-fighting equipment in proportion to the fire risk presented by the type of construction and other on-site activities and materials used on site. This equipment shall be kept in good operating order.

Open fires for heating and cooking shall only be permitted in protected areas designated by the ECO for this purpose.
No fires will be allowed adjacent to the boundary fence, either inside or outside the construction site.

Any welding or other sources of heating of materials must be done in a controlled environment, wherever possible and under appropriate supervision, in such a manner as to minimise the risk of veld fires and/or injury to staff.

C3.6.4.5 Storage of fuel and other materials

Fuel, lubricants, transmission, and hydraulic fluids shall only be stored in the Works area.

All fuel tanks must be installed above ground, depending on the volume of stored fuel, for easy detection of fuel leaks. All fuel tanks must be placed on a thick plastic sheet so as to prevent soil pollution, be set in a bund with earthen walls, and maintained throughout the contract.

Areas made available for fuelling or greasing of equipment and vehicles must be clearly demarcated on the layout plan. In order to prevent soil pollution, these areas must be covered with a protective material (e.g. a thick plastic sheet). No fuelling, greasing, or filling of oils may take place outside these demarcated areas.

The Contractor must provide adequate and approved facilities for the storage and recycling of used oil and contaminated hydrocarbons. Such facilities must be designed and sited with the intention of preventing pollution of the surrounding area and environment.

Cement must be stored and mixed on an impermeable substratum.

C3.6.4.6 Concrete batching plants

Concrete must be mixed only in an area demarcated for this purpose. All concrete spilled outside this area, must be promptly removed by the Contractor and taken to a permitted waste disposal site. After all concrete mixing is complete all waste concrete must be removed from the batching area and disposed of at an approved dumpsite.

The batching plant shall be enclosed by a bund wall with divisions and dedicated compartments for the various types of materials. Air filters shall be monitored and cleaned and replaced as per the supplier's guidelines.

Storm water must not be allowed to flow through the batching area.

Water laden with cement must be collected in a retention area for evaporation and not allowed to escape the batching area. This pond will be cleaned monthly.

Operators must wear suitable safety clothing.

C3.6.4.7 Safety

Equipment and stores should be locked up and not left unattended.

The Contractor must ensure that no unemployed labour seekers are permitted to gather at the site and no camp followers/shebeen operators shall be allowed to operate on or adjacent to the site.

Measures must be taken to prevent any interference that could result in flashover of power lines due to breaching of clearances or the collapse of power lines due to collisions by vehicles and equipment.

Measures must be taken during thunderstorms to protect workers and equipment from lightning strikes.
All tall structures must be properly earthed and protected against lightning strikes.

The Contractor must have a first aid box available on site and on all vehicles working on site.
The Contractor must submit a copy of the minutes of weekly health and safety meetings to the ECO.

C3.6.4.8 Blasting and drilling

A written warning of 2 days indicating the date and approximate time period of blasting activities shall be given to affected residents for the temporary removal of sensitive domestic animals such as horses, dogs, cats, birds, and cattle, before blasting and/or drilling activities commence during that period.

During blasting the stipulations of the Minerals Act, Act 50 of 1991 shall apply.

Should any warning not be given within the period specified above, the Contractor will be held liable for injuries to or deaths of the affected animals.

In order to minimise the potential impact on animals, it is proposed that soft explosives and/or noise mufflers be used.

When blasting, the Contractor shall take measures to limit flying rock. This may be achieved by matching the charge to the rock type, by using milli-second delay detonators or by using rubber blasting mats placed over the area to be blasted. Flying rock 150mm and larger which falls beyond the cleared working area shall be collected and removed together with the rock spoil.

When blasting under power lines the Contractor shall arrange for power to be temporarily switched off or have the lines moved.

C3.6.4.9 Fencing

Fencing shall be erected around sensitive natural or cultural elements to protect them from damage. No pedestrian or vehicular access shall be allowed to such fenced areas.

In places where temporary fencing is required, the Contractor shall erect such fencing and, when and where required by the Engineer, re-erect and maintain temporary fencing as necessary. Temporary fencing shall remain in position either until it is replaced by permanent fencing or until completion of the whole of the Works, unless the Contractor requires, or the Engineer directs its earlier removal. The Contractor shall erect and maintain the aforementioned temporary fencing in the locations and for the period described in the Contract.

If temporary fencing is removed temporarily for the execution of any part of the Works, it shall be reinstated as soon as practicable by the Contractor.

The clearing for permanent fencing shall be limited to the removal of trees and shrubs within 1m of the fence line. Where possible, the fence line must be aligned to retain trees or tree groups. There shall be no removal of the grass cover or topsoil within this width.

C3.6.5 CONTROL OF DAMAGE TO VEGETATION AND ANIMALS

The Contractor shall ensure that all works are undertaken in a manner which minimises the impact on vegetation and animals inside or outside of the Works area

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C3.6.5.1 Vegetation

As much of the existing vegetation as possible shall be retained. The removal of existing vegetation shall only occur at the sites designated for construction activities. Only woody vegetation may be cleared. During clearing of woody vegetation no basal cover or grass and topsoil shall be removed and damage to this layer shall be minimised as far as possible.

Bush and grass veld must only be cleared to provide essential access for construction purposes.

No indigenous shrubs and/or trees shall be cut down by the Contractor. Removal, damage or disturbance of any vegetation outside the Works area is not permitted. Special care shall be taken not to disturb or destroy riverine vegetation.

Trees which have been selected for preservation by the ECO within or adjacent to the Works areas shall be fenced around their drip line. The fence shall be clearly marked with danger tape. No open fires shall be allowed within this fenced area, nor shall vehicles be parked underneath these trees. The area shall also not be used for materials storage or as allocation for temporary buildings. If such trees are located within the 15m working width of the pipeline, the pipeline shall be aligned to avoid these trees wherever possible.
Gathering of firewood shall not be permitted.

The Contractor shall take care that seeds are collected during the removal of alien vegetation in order to counter the spread of this vegetation type. Failure to do so may result in prosecution in terms of the Conservation of Agricultural Resources Act (Act 43 of 1983). A fine not exceeding R5000 and/or 2 years imprisonment can be imposed.

No vehicular access will be allowed on the grassy parts of the construction site.

C3.6.5.2 Disturbance of animals

Under no circumstances shall any animals be handled, removed, killed or interfered with by the Contractor, his employees, his sub-contractors or his sub-contractors' employees. Snakes and other reptiles that may be encountered on the construction site must not be killed unless the animal endangers the life of an employee. Disturbances to nesting sites of birds must be minimized. Anthills and/or termite nests that occur in the Works area must not be disturbed unless it is unavoidable for construction purposes.

The Contractor and his employees shall not bring any domestic animals onto the site.

The Contractor shall ensure that the work site is kept clean and tidy and free from rubbish which would attract animal pest species. There shall be no feeding of native animals.

The Contractor shall ensure that domestic and native animals are safe from injury that may arise from unprotected Works.

The Contractor shall advise his workers and subcontractors of the penalties associated with the needless destruction of wildlife, as set out in the Animals Protection Act (Act 71 of 1962) sec. 2 (fine R2 000 and/or 12 months imprisonment).

C3.6.6 CONTROL OF DAMAGE TO SOIL AND WATER

C3.6.6.1 Stripping of topsoil

Topsoil shall be deemed to be the top 300mm layer of soil. This layer contains organic material, nutrients and plant and grass seed. For this reason it is an extremely valuable resource for the rehabilitation and re-vegetation of disturbed areas.

Topsoil shall be stripped from all areas that are to be utilized during the construction period and where permanent structures, and access is required. These areas will include the area comprising the permanent works, pipeline trenches, stockpiles, temporary and permanent access roads, construction camps, lay down areas, and any other area as indicated on the Works area drawings. Topsoil shall be stripped after clearing of woody vegetation and before excavation or construction commences.

Soil shall be stripped to a minimum depth of 150mm and maximum depth of 300mm or to the depth of bedrock where soil is shallower than 300mm. Herbaceous vegetation, overlying grass and other fine organic matter shall not be removed from the stripped soil.

No topsoil which has been stripped shall be buried or in any other way be rendered unsuitable for further use by mixing with spoil or by compaction by machinery.

Topsoil shall be stripped when it is in a dry condition in order to prevent compaction.

Stripping of topsoil shall be undertaken in such a way as to minimise erosion by wind or runoff.

C3.6.6.2 Stockpiling of topsoil

Topsoil should be temporarily stockpiled, separately from (clay) subsoil and rocky material, when areas are cleared. The Contractor shall ensure that subsoil and topsoil are not mixed during stripping, excavation, reinstatement, and rehabilitation. If mixed with clay sub-soil the usefulness of the topsoil for rehabilitation of the site will be lost. Temporary soil stockpiles shall not be higher than 2,5m, and the slopes of soil stockpiles shall not be steeper than 1 vertical to 1,5 horizontal.

Areas from which topsoil is to be removed shall be cleared of any foreign material which may come to form part of the topsoil during removal including bricks, rubble, any waste material, litter any other material which could reduce the quality of the topsoil.

Soil must not be stockpiled on drainage lines or near watercourses.

No vehicles shall be allowed access onto the stockpiles after they have been placed. Topsoil stockpiles shall be clearly demarcated in order to prevent vehicle access and for later identification when required.

After topsoil stockpiling has been completed, the Contractor shall apply soil conservation measures to the stockpiles where and as directed by the Engineer / Environmental Officer.

This may include the use of erosion control fabric and/or grass seeding.

C3.6.6.3 Placement of topsoil

Topsoil shall be placed to a minimum depth of 150mm over all areas where it has been stripped, after construction in those areas has ceased. Topsoil placement shall follow as soon as construction in an area has ceased.

All areas onto which topsoil is to be spread shall be graded to the approximate original landform with maximum slopes of 1:2,5 and shall be ripped prior to topsoil placement. The entire area to be covered with top soil shall be ripped parallel to the contours to a minimum depth of 300mm.

Topsoil shall be placed in the same soil zone from which it had been stripped. However, if there is insufficient topsoil available from a particular soil zone to produce the minimum specified depth, topsoil may be brought from other soil zones on approval by the Engineer after consultation with the ECO.

Where topsoil that has been stripped by the Contractor is insufficient to provide the minimum specified depth, the Contractor shall obtain suitable substitute material from other sources at no cost to the employer. The suitability of the substitute material shall be determined by means of a soil analysis which is acceptable to the Engineer.

No vehicles shall be allowed access onto or through topsoil after it has been placed.

After topsoil placement is complete, cleared and stockpiled vegetative matter shall be spread randomly by hand over the area covered with topsoil.

C3.6.6.4 Klip river and Rietspruit

The Klip River is situated approximately 250 m to the west of the construction site at its closest point, and the Rietspruit approximately 300 m to the east.

Site staff shall not be permitted to use the Klip River or the Rietspruit for the purpose of bathing, washing of clothing or vehicles nor disposal of any type of waste.

The Contractor shall not in any way modify nor damage the banks or bed of the Klip River or the Rietspruit and its drainage lines, unless required as part of the construction project specification and in consultation with the Project Manager and the ECO. Abstraction of water from the Klip River is allowed provided that no damage to the banks of the Klip River shall occur. Should damage occur the Contractor will be held liable for any reparation and/or rehabilitation to the banks of the Klip River and for prosecution in terms of the National Water Act (Act No. 36 of 1998).

All fuel, chemical, oil, etc spills must be confined to areas where the drainage of water can be controlled.

Appropriate structures and methods to confine spillages such as the construction of berm shall be provided.

C3.6.7 Control of pollution

As a minimum requirement all waste emissions (hazardous, airborne, liquid and solid) from the site shall be kept within the limits of standards set in terms of relevant national and local pollution legislation and regulations.

C3.6.7.1 General

No waste of a solid, liquid or gaseous nature shall be emitted from the site without approval by the Engineer.

Precautionary measures must be taken to prevent any form of pollution.

Accidental pollution incidents shall be reported to the Engineer and the ECO immediately after they occur and shall be cleaned up by the Contractor or a nominated clean-up organisation at the expense of the Contractor.

C3.6.7.2 Soil

Vehicle and plant maintenance shall be confined to the areas demarcated for this purpose. Should any amount of fuel, oil transmission or hydraulic fluids be spilled onto the soils the Engineer and the ECO shall be informed immediately. If ordered by the Engineer, tests must be conducted to determine the extent of soil contamination. The polluted soil shall be rehabilitated or remediated to the satisfaction of the Engineer, after consultation with the ECO. Proof of disposal of contaminated soil must be submitted by the Contractor to GDACE within 14 days of the disposal thereof.

C3.6.7.3 Water

Water containing waste shall be prevented from entering the Klip River or the Rietspruit either by seepage or natural flow. Oil absorbent fibres must be used to contain oil spilled in water.
Cost effective measures must be taken to minimise the flow of surface water to trench excavations.
On-site storm water management over the construction site shall be to the satisfaction of the Engineer.

C3.6.7.4 Air

All reasonable measures should be taken to minimise air emissions in the form of smoke, dust, and gases.
All machinery and vehicles used for the Works shall be in good working order. Any vehicle or piece of machinery that visibly emits excess pollutant shall be removed from site.
Waste must not be allowed to stand on site to decay, resulting in malodours. No fires shall be allowed if smoke from such fires will cause a nuisance to neighbouring residents.

C3.6.7.5 Sewage

Any spillage of sewage caused by the Contractor or any of his employees or subcontractors during the construction activities shall be cleaned up at the expense of the Contractor.

C3.6.8 MANAGEMENT OF WASTE

In practice all wastes arising from construction activities are to be handled, transported and disposed of in accordance with the relevant regulations. All efforts should be made to minimise, reclaim or recycle waste, and failing that, dispose of it in a manner licensed by the government for that purpose.

C3.6.8.1 Sanitation

The Contractor shall provide adequate sanitation facilities in accordance with Clause PSA 1.2 hereof. The use of the surrounding veld for toilet purposes shall not be permitted under any circumstance.

C3.6.8.2 Wastewater

Definition: Wastewater is water that is contaminated by humans through their actions.

All run-off from fuel depots, workshops, truck washing areas, and washwater from concreting vehicles and other equipment shall be collected and directed through pollution traps to the operational sewers. If connection to the sewers is not possible, the wastewater shall be collected in settlement ponds,

which shall be suitably lined at the Contractor's expense.

Wastewater may not be disposed of directly or indirectly into the Klip River or the Rietspruit. The Contractor shall provide suitable retention and filtration structures (which shall be properly maintained) for the collection of wastewaters.

The Contractor shall provide washing and changing facilities. All run-offs from these washing and/or changing facilities shall be contained in the retention structures to the satisfaction of the Engineer.

C3.6.8.3 Solid waste

Definition: "Solid Waste" refers to all construction waste (such as rubble, cement bags, waste cement, timber, cans, other containers, wires and nails), household and office waste.

Solid waste shall be collected and stored in demarcated, fenced areas in skips and/or bins. The fenced areas or containers should be designed to prevent solid waste from being blown out by wind and should be strategically and conspicuously placed throughout the site.

Wherever possible solid waste that can be recovered shall be recycled.

Solid waste shall be disposed of at a registered solid waste disposal site. The prices submitted by the Contractor shall include all transportation and disposal costs of waste. Solid waste shall not be buried nor burned on site.

The entire works area and all construction sites must be swept of all pieces of wire, metal, wood or other material foreign to the natural environment.

C3.6.8.4 Hazardous wastes

Definition: Hazardous wastes are those which are proven to be toxic, corrosive, explosive, flammable, carcinogenic, radioactive, poisonous or as determined by the Hazardous Substance Act as amended. Discharges of hazardous chemicals (such as paint, turpentine, oil and cement), as declared under the Hazardous Substances Act as amended, on the site or to the storm water system are prohibited.

Potentially hazardous raw and waste materials shall be handled and stored on-site in containers with tight lids that must be sealed and must be disposed of at an appropriately permitted hazardous waste disposal site. Such containers must not be used for purposes other than those originally designed for.

The following hazardous waste products shall be disposed of at a registered hazardous waste disposal site:

(a) cement;
(b) diesel, petroleum, oil and lubricants;
(c) explosives;
(d) drilling fluids;
(e) pesticides;
(f) paints and turpentine;
(g) concrete additives; and
(h) any other material which is listed in terms of the Hazardous Substances Act.

The Contractor must maintain a hazardous materials register.

C3.6.9 MANAGEMENT OF STORMWATER AND SOIL EROSION

The aim is to minimise soil loss from the site due both to wind and water.

C3.6.9.1 Storm water

At all stages of the contract, storm water control measures shall be applied to keep soil onsite by minimising

(a) Erosion or leaching of water from temporary stockpiles of topsoil and permanent spoil dumps
(b) Erosion from construction roads, excavations and borrow pits, where applicable
(c) Silt-laden run-off from all areas stripped of vegetation, including excavation surfaces and stockpiles of spoil and topsoil (the correct placement of rocks together with straw bales can be used to prevent silt-laden run-off); and
(d) Contaminated run-off from storage areas;

Thereby preventing it from entering waterways or the storm water drainage system.

Natural storm water run-off that is not polluted by site operations shall be diverted around spoil dumps and topsoil stockpiles. Effective measures shall be taken to minimise the flow of storm water to excavations.

Where uncontaminated storm water has accumulated in excavations and needs to be pumped out, it must be disposed of in such a way that erosion does not occur along the course of its passage. Contaminated storm water shall not be disposed of into the waterways, unless it has been treated to the satisfaction of the Engineer, after consultation with the ECO.

C3.6.9.2 Control of erosion

At all stages of the contract, erosion of bare soil, other excavation surfaces and stockpiles of topsoil and spoil shall be prevented by the application of erosion control measures.

Should erosion occur due to negligence on the part of the Contractor to apply adequate measures, the Contractor will be responsible for reinstatement of the eroded area to its former state at his own expense. Any surface water pollution occurring, as a result of this negligence, shall be cleaned up by the Contractor or a nominated clean-up organization at the expense of the Contractor.

Cross and side storm water drainage measures shall be constructed on access and haul roads to the site and on roads within the site.

The Contractor shall ensure that run-off from access and haul roads, and that diverted into cross and side drains, does not cause erosion.

C3.6.10 CONTROL OF DISTURBANCE TO NEIGHBOURS AND/OR AFFECTED RESIDENTS

All issues and items agreed to in the negotiations and discussions between the Owner and affected residents must be implemented.

C3.6.10.1 Scenic quality

The Contractor shall position all temporary structures as well as temporary plant on site in locations and at elevations which limit visual intrusion on neighbours. The type and colour of roofing and

cladding materials shall be selected to reduce reflection.

The Contractor shall not establish or undertake any activities which, in the opinion of the Engineer, are likely to adversely affect the scenic quality of the area. The Engineer may direct the Contractor to refrain from such activities or to take ameliorative actions to reduce the adverse effect of such activities on the scenic quality of the environment.

No painting or marking of natural features shall be done. Marking for surveying and other purposes shall only be done with pegs and beacons.

All cut and fill forms shall be rounded at the edges to blend them with the surrounding landforms.

All packed rock and exposed rock cuttings shall be treated in order to blend their colour with the colours of the natural weathered rocks of the adjacent environment.

The colours of all permanent structures shall be chosen to blend in with the dominant colours of the surrounding landscape. Painted surfaces shall be painted with non-reflective (matt) colours.

C3.6.10.2 Noise

All noise levels must be controlled at the source. All employees must be given the necessary ear protection gear. Neighbouring residents must be informed of excessive noise factors.

Noise emanating from construction activities must not be "disturbing noise", that is, the sound level from the site measured at the nearest dwelling must not exceed the ambient noise level by 7dBA or more.

Appropriate directional and intensity settings should be maintained on hooters and sirens, if applicable.
Silencer units on plant and vehicles shall be maintained in good working order. Any vehicle/machine emitting excess noise shall immediately be removed from site or effectively repaired.

Where required by the ECO after consultation with the Engineer, the Contractor shall provide noise reduction measures in the form of cladding and earth berm between sources of onsite noise and neighbours and/or affected property owners.

A speed restriction of 40 km/h shall be imposed on all construction vehicles in order to limit additional noise generated by these vehicles. This restriction shall apply to the site and any road within 2 kilometers of the site.

No loud music shall be allowed on site and in construction camps.

C3.6.10.3 Dust

The Contractor shall ensure that a minimum of dust is generated by construction and related activities. Roads and working areas should be maintained regularly and this may include the sprinkling of water. Water for this purpose shall be used sparingly to not generate run-off and resulting soil erosion.

The Contractor shall control dust from spoil dumps as specified above.

Soil and aggregate loads in transit must be kept covered, to prevent wind borne pollution (dust).

Stockpiles of soil must be kept covered or have a suitable dust palliative applied, such as water or

commercial dust suppressants, to prevent windborne pollution.

C3.6.10.4 Social interaction and disruption

The Contractor shall maintain normal working hours (i.e. from 07:00 until 17:00) from Mondays to Fridays for the duration of the construction period. The Contractor must inform all adjacent landowners of any after-hour construction activities and any other activity that could cause a nuisance e.g. the application of chemicals to the work surface.

The Contractor's activities and movement of staff shall be restricted to designated construction areas only. The Contractor and site staff may not interact directly with adjacent landowners but only through the Engineer, who will contact property owners to obtain permission.

The Contractor's staff shall wear special identity cards (with the employees photograph displayed on the card), which shall make identification possible, at all times. Any temporary staff employed by the Contractor or any sub- contractor appointed by the Contractor shall also comply with this clause.

Rapid migration of job seekers could lead to squatting and social conflict with resident communities and increase in social pathologies if not properly addressed. The Contractor must ensure that signs indicating the availability of jobs are installed.

Criteria for selection and appointment, by the Contractor, of construction labour must be established to allow for preferential employment of local communities.

C3.6.10.5 Disruption of services and access

Care must be taken by the Contractor to avoid damaging major and minor pipelines and other services. The relevant authorities must be notified of any interruptions of services, especially the Mid Vaal Local Municipality, the National Roads Agency, Spoornet, TELKOM and ESKOM.

Disruption of access for local residents during construction, and haulage or any other construction activity shall only take place with the prior consent of the Engineer.

The Contractor shall liaise with the Engineer on a regular basis with regard to specific activities that could cause inconvenience to property owners, especially increased vehicular traffic through residential areas adjacent to the site. The Contractor shall prior to commencement inform property owners of his planned activities within a reasonable period of time.

The movement of construction vehicles through the affected areas shall be restricted to offpeak hours to minimise adverse impacts on private vehicular traffic. Temporary access roads must not be opened until required and must be restored to its former state as soon as the road is no longer needed.

C3.6.10.6 Traffic control

The Contractor shall ensure that all construction traffic including that of subcontractors, vendors, suppliers of materials and services are notified that a special speed limit of 40 kph shall apply along any road within the adjacent Klipwater Township; and special attention shall be given to road signs. Vehicles not complying with this ruling shall on the instruction of the Engineer, be denied access to the Site.

C3.6.11 Archaeology and cultural sites

All finds of human remains must be reported to the nearest police station.

Human remains from the graves of victims of conflict, or any burial ground or part thereof which contains such graves and any other graves that are deemed to be of cultural significance may not be destroyed, damaged, altered, exhumed or removed from their original positions without a permit from the South African Heritage and Resource Agency (SAHRA).

Work in areas where artefacts are found must cease immediately.

Under no circumstances must the Contractor, his/her employees, his/her sub- contractors or his/her sub-contractors' employees remove, destroy or interfere with archaeological artefacts. Any person who causes intentional damage to archaeological or historical sites and/or artefacts could be penalised or legally prosecuted in terms of the National Heritage Resources Act, 25 of 1999.

A fence at least 2m outside the extremities of the site must be erected to protect archaeological sites. All known and identified archaeological and historical sites must be left untouched.

Work in the area can only be resumed once the site has been completely investigated. The Engineer will inform the Contractor when work can resume.

C3.6.12 REHABILITATION

It is important that rehabilitation will commence as soon as feasible and to run in parallel with the construction and not to be left until completion of the works. This will increase the chances of successful rehabilitation as it can be monitored throughout the construction period.

The construction site shall be cleaned and rehabilitated as close as is reasonably possible to its original state.

All drainage deficiencies must be corrected.

Cut and fill areas must be restored and re-shaped.

Areas compacted by vehicles during construction must be scarified to allow penetration of plant roots and the re-growth of natural vegetation.

Rehabilitation of all the disturbed and compacted areas shall mean that these areas are ripped and covered with topsoil.

- Ripped shall mean - ploughed with a ripper to a depth of not less than 300mm in two directions at right angles.
- Top soiled shall mean - the spreading of a minimum of 150mm of stockpiled topsoil either before or after ripping over the surface to be rehabilitated.

The areas immediately adjacent to the Works which are not designated for paving shall be grassed in accordance with the relevant engineering specification.

All alien vegetation removed during construction shall not be replaced.

The rehabilitated areas will be weeded by the nominated rehabilitation contractor for a period of 1 year.

C3.6.13 RESPONSE TO PUBLIC COMPLAINTS

The Contractor shall assist the Engineer with responding to queries and complaints from the public regarding construction activities by:

(a) Documenting the details of such communications and submitting the information to the
(b) Engineer for inclusion in the complaints register;
(c) Bringing any such matters to the attention of the Engineer immediately as they arise;
(d) Taking any remedial action as per the Engineer; and d.) discuss such matters at the site meetings.

The Contractor shall assist the Engineer and consult with affected parties for the purpose of explaining the construction process and answering questions raised by affected parties at reasonable times.

Should the owner of any property, contact the Contractor during the construction period regarding specific requests, the Contractor shall include all pertinent details in his report (Section 2.3 hereof).

C3.6.14 CLEARANCE OF SITE ON COMPLETION

On completion of the Works, the Contractor shall clear away and remove from the site all construction plant, surplus materials, foundations, plumbing and other fixtures, rubbish and temporary works of every kind. Areas thus cleared shall be graded and scarified to restore the ground to its original profile as near as practicable before topsoil placement.

C3.6.15 COMPLIANCE WITH ENVIRONMENTAL MANAGEMENT SPECIFICATIONS

(a) All persons employed by the Contractor or his subcontractors shall abide by the requirements of these Environmental Management Specifications.
(b) Any employees of the Contractor or his subcontractors found to be in breach of any of the Environmental Management Specifications may be ordered by the Engineer to leave the site forthwith. The order may be given orally or in writing. Confirmation of an oral order will be given as soon as practicable but lack of confirmation in writing shall not be a cause for the offender to remain on site. No extension of time will be granted for any delay or impediment to the Contractor brought about by a person ordered to leave the site.
(c) Supervisory staff of the Contractor or his subcontractors shall not direct any person to undertake any activities which would place such person in contravention of the Environmental Management Specifications.
(d) Via these specifications the Contractor has been made aware of what actions are required of him and/or his subcontractors. Certain do's and don'ts have been given and onus for compliance rests with the Contractor as he is the only person capable of controlling these aspects. A fine/reward system will be implemented to encourage compliance. For every week that the Contractor successfully complies with the Environmental Management Plan and Specifications a bonus sum of R500 will be generated. However, for each and every time that the Environmental Management Plan and Specification is not met, a fine of R500 will be imposed.

C3.6.16 MEASUREMENT AND PAYMENT

Unit:

Under Schedule No. 1 in Bill: Environmental Management ..... Sum.

The lump sum tendered shall include full compensation for initiating and maintaining the environmental awareness campaign as required in the Environmental Management Plan and Specifications.

ERWAT

EXCELLENCE IN WATER CARE

DRAFT SERVICE LEVEL AGREEMENT

Bidders should take note of the attached draft service level agreement that will be concluded upon final confirmation of award. This draft will be used as a format and structure for the final document. The contract will thus take effect on the date of the last signatory on the finalised Service Level Agreement.

ERWAT

EXCELLENCE IN WATER CARE

DRAFT PERFORMANCE EVALUATION MANAGEMENT

The Municipal Finance Management Act (No. 56 of 2003) Section 116 (2) (d) determines that a Municipality must enter into a Performance Management System (PMS) with all service providers.

A PMS will be concluded with the appointed bidder and the costing for this project will run during the 2023/2024, 2024/2025 and 2025/2026 financial budget years.

The following document is a draft of the performance evaluation that will be conducted with the awarded bidders on a regular basis as determined in the Service Level Agreement. The final performance evaluation document will be finalised at SLA stage and signed together with the SLA and will be annexed to the SLA.

The XXXXXX Department will monitor performance on a monthly basis at scheduled meetings with the service provider where minutes of progress, activities, challenges, risks encountered, and planned work will be recorded. Evaluation will be based on progress, outputs, targets on key deliverables and compliance to the reporting timelines as specified. The draft Performance Evaluation Document is attached to this document for ease of reference and will be finalised at signing of the service level agreement.