Request for Proposals (RFP)

Installation of two back-up generators, diesel storage tank and upgrade of the existing MLV distribution board at the CSIR Pretoria Campus

RFP No. 3591/09/10/2023

Date of Issue	Wednesday, 13 September 2023	
Compulsory Site Inspection	Date and Time	Friday, 22 September 2023 **Time**: 10H00
	Address	**Venue**: CSIR Pretoria Campus, Meiring Naudé Rd, Brummeria, Pretoria- Building 9 site.
Enquiries	Strategic Procurement Unit	E-mail: **tender@csir.co.za**
	Please use RFP No and RFP Description as subject reference	
Last date for submission of enquiries/clarifications	Friday, 29 September 2023 @ 16H30	
Electronical Submission	**tender@csir.co.za** (If tender submission exceeds 25MB multiple emails can be sent)	
CSIR business hours	08h00 – 16h30	
Category	Construction Services	
Closing Date and Time	Monday, 09 October 2023 @ 16H30	

TABLE OF CONTENTS

RFP STRUCTURE

SECTION A: GENERAL RFP TERMS AND CONDITIONS
SECTION B: EVALUATION METHODOLOGY / PROCESS

LIST OF ANNEXURES

- Annexure A – Standard Bidding Document (SBD) 1 Form
- Annexure B – Technical Specification
- Annexure C – Technical Evaluation Matrix/Rubrics
- Annexure D – Pricing Schedule
- Annexure E – Proposal Form and List of Returnable Documents
- Annexure F – Certificate of Acquaintance with RFP
- Annexure G – Preference Point Award Form
- Annexure H – Standard Bidding Document (SBD) 4 Form
- Annexure I – RFP Declaration and Breach of Law Form
- Annexure J – Mutual Non-Disclosure Agreement
- Annexure K – Technical Drawings

SECTION A

GENERAL RFP TERMS AND CONDITIONS

1 INTRODUCTION

The Council for Scientific and Industrial Research (CSIR) is one of the leading scientific research and technology development organisations in Africa. In partnership with national and international research and technology institutions, the CSIR undertakes directed and multidisciplinary research and technology innovation that contributes to the improvement of the quality of life of South Africans. The CSIR's main site is in Pretoria while it is represented in other provinces of South Africa through regional offices.

2 SUBMISSION OF PROPOSALS

2.1 All proposals are to be submitted electronically to **tender@csir.co.za**. No late proposals will be accepted.

2.2 All proposals will only be considered if received by the CSIR before the closing date and time (***as indicated on the cover page***). The CSIR business hours are between **08h00** and **16h30**.

2.3 All proposal submissions are to be clearly subject-referenced with the **RFP number and RFP Description**. Proposals must consist of two parts, each of which must be sent in two separate emails with the following subject:

PART 1: Technical Proposal **(Please indicated the RFP Number on each File/folder)**
PART 2: Pricing Proposal, Specific Goals claim documentation: **RFP No.: (Please indicated the RFP Number on each File/folder)**

2.4 Proposals submitted must be signed by a person or persons duly authorised.

2.5 Proposals submitted at incorrect location and/or address, will not be accepted for considerations and where practicable, will be returned unopened to the Bidder(s).

2.6 Proposals received after the closing date and time, at the address indicated in the bid documents, will not be accepted for consideration and where practicable, will be returned unopened to the Bidder(s).

2.7 All dates and times in this bid are South African standard time.

2.8 Any time or date in this bid is subject to change at the CSIR's discretion. The establishment of a time or date in this bid does not create an obligation on the part of the CSIR to take any action or create any right in any way for any bidder to demand that any action be taken on the date established. The bidder accepts that, if the CSIR extends the deadline for bid submission (the Closing Date) for any reason, the requirements of this bid otherwise apply equally to the extended deadline.

2.9 Documents submitted via cloud solutions such as: WeTransfer, Google Drive, Dropbox, etc. will not be considered.

2.10 The naming / labelling syntax of files or documents must be short and simple.

2.11 The CSIR will award the contract to qualified bidder(s)' whose proposal is determined to be the most advantageous to the CSIR, taking into consideration the technical (functional) solution, price, specific goals and objective criteria.

3 COUNTER CONDITIONS

Bidders' attention is drawn to the fact that amendments to any of the RFP Conditions or setting of counter conditions by Bidders or qualifying any RFP Conditions will result in the invalidation of such bids.

4 FRONTING

4.1 Government supports the spirit of broad based black economic empowerment and recognizes that real empowerment can only be achieved through individuals and businesses conducting themselves in accordance with the Constitution and in an honest, fair, equitable, transparent and legally compliant manner. Against this background the Government condemn any form of fronting.

4.2 The Government, in ensuring that Bidders conduct themselves in an honest manner will, as part of the RFP evaluation processes, conduct or initiate the necessary enquiries/investigations to determine the accuracy of the representation made in bid documents. Should any of the fronting indicators as contained in the Guidelines on Complex Structures and Transactions and Fronting, issued by the Department of Trade and Industry, be established during such enquiry / investigation, the onus will be on the Bidder / contractor to prove that fronting does not exist. Failure to do so within a period of 14 days from date of notification may invalidate the bid / contract and may also result in the restriction of the Bidder /contractor to conduct business with the public sector for a period not exceeding ten years, in addition to any other remedies the CSIR may have against the Bidder / contractor concerned.

5 PRICING PROPOSAL

5.1 Pricing must be provided in South African Rand (including all applicable taxes less all unconditional discounts).

5.2 Prices that are subject to escalation and exchange rate fluctuations are to be clearly indicated, with the currency and ROE used in the quotation must be clearly indicated.

5.3 Price should include additional cost elements such as travel cost, freight, insurance until acceptance, duty where applicable, etc.

5.4 Payment will be according to the CSIR Payment Terms and Conditions.

5.5 Please provide detail pricing using a Pricing Schedule/Bill of Quantities outlined under **Annexure D. Pricing must strictly be in accordance with the Pricing Schedule.**

6 APPOINTMENT OF SERVICE PROVIDER

6.1 The contract will be awarded to the bidder who scores the highest total number of points during the evaluation process, except where the law permits otherwise.

6.2 Appointment as a successful service provider shall be subject to the parties agreeing to mutually acceptable contractual terms and conditions. In the event of the parties failing to reach such agreement, CSIR reserves the right to appoint an alternative supplier.

6.3 Awarding of contracts will be published on the same platform where the bid was published, and no regret letters will be sent to unsuccessful bidders.

7 SERVICE LEVEL AGREEMENT

7.1 Upon award the CSIR and the successful bidder will conclude an agreement in line with applicable form of contract (i.e. **Draft Supplier Agreement**) regulating the specific terms and conditions applicable to the services being procured by the CSIR.

7.2 The CSIR reserves the right to accept or reject any or all amendments or additions proposed by a bidder if such amendments or additions are unacceptable to the CSIR or pose a risk to the organisation.

8 ENQUIRIES AND CONTACT WITH THE CSIR

Any enquiry regarding this RFP shall be submitted in writing to CSIR to the email and format outlined in the table on cover page of this RFP document.

Any other contact with CSIR personnel involved in this tender is not permitted during the RFP process other than as required through existing service arrangements or as requested by the CSIR as part of the RFP process.

9 MEDIUM OF COMMUNICATION

All documentation submitted in response to this RFP must be in English.

10 CORRECTNESS OF RESPONSES

10.1 The bidder must confirm satisfaction regarding the correctness and validity of their proposal and that all prices and rates quoted cover all the work/items specified in the RFP. The prices and rates quoted must cover all obligations under any resulting contract.

10.2 The bidder accepts that any mistakes regarding prices and calculations will be at their own risk.

11 VERIFICATION OF DOCUMENTS

11.1 Bidders should check the numbers of the pages to satisfy themselves that none are missing or duplicated. No liability will be accepted by the CSIR in regard to anything arising from the fact that pages are missing or duplicated.

11.2 Pricing schedule and specific goals credentials should be submitted with the proposal, but as a separate document and no such information should be available in the technical proposal.

12 RESPONSIBILITY FOR SUB-CONTRACTORS AND BIDDER'S PERSONNEL

A bidder is responsible for ensuring that its personnel (including agents, officers, directors, employees, advisors and other representatives), its sub-contractors (if any) and personnel of its sub-contractors comply with all terms and conditions of this bid. In the event that the CSIR allows a bidder to make use of sub-contractors, such sub-contractors will at all times remain the responsibility of the bidder and the CSIR will not under any circumstances be liable for any losses or damages incurred by or caused by such sub-contractors.

13 ADDITIONAL TERMS AND CONDITIONS

13.1 A bidder shall not assume that information and/or documents supplied to CSIR, at any time prior to this request, are still available to CSIR, and shall consequently not make any reference to such information document in its response to this request.

13.2 Copies of any affiliations, memberships and/or accreditations that support your submission must be included in the tender.

13.3 In case of proposal/s from a joint venture, the following must be submitted together with the proposal/s:

- A joint venture agreement signed by both parties clearly indication the lead partner, including split of work;
- Copy of a valid certificate or consolidated B-BBEE score card;
- The Tax Compliance Status (TCS) or CSD Report of each joint venture partner;
- Proof of ownership/shareholder certificates/copies; and

- Company registration certificate/s.

13.4 An omission to disclose material information, a factual inaccuracy, and/or a misrepresentation of fact may result in the disqualification of a tender, or cancellation of any subsequent contract.

13.5 No goods and/or services should be delivered to the CSIR without an official CSIR Purchase order or signed supplier agreement. The CSIR purchase order number must be quoted on the invoice. Invoices without CSIR purchase order numbers will be returned to supplier.

13.6 Failure to comply with any of the terms and conditions as set out in this document will invalidate the Proposal.

14 SPECIAL CONDITIONS

The CSIR reserves the right to:

14.1 Extend the closing date of this RFP;

14.2 Correct any mistakes before closing date and time of the tender that may have been in the Bid documents or occurred at any stage of the tender process;

14.3 Verify any information contained in the bidder's submission;

14.4 Request documentary proof regarding the bidder's submission;

14.5 Carry out site inspections, product evaluations or explanatory meetings in order to verify the nature and quality of the product/service offered by the bidder(s) or verify any information whether before or after the adjudication of this RFP;

14.6 Award this tender to a bidder that did not score the highest total number of points, only in accordance with Section 2(1)(f) of the PPPFA (Act 5 of 2000);

14.7 Request audited financial statements or other documents for the purpose of a due diligence exercise to determine if the bidder will be able to execute the contract;

14.8 Award this RFP as a whole or in part;

14.9 Award this RFP to multiple bidders;

14.10 Cancel and/or terminate the tender process at any stage, including after the Closing Date and/or after presentations have been made, and/or after tenders have been evaluated and/or after the preferred bidder(s) have been notified of their status as such;

14.11 Post tender negotiate on any elements on the bid, including but not limited to technical, transformation, price, and contractual terms and conditions.;

14.12 Not to award a contract to a bidder who is associated with a security breach that materially adversely affects other entities or if any directors or officers of a bidder are formally charged of fraudulent or illegal conduct which, would harm the CSIR's reputation by its continued association with the bidder.

15 CONFLICT OF INTEREST, CORRUPTION AND FRAUD

15.1 The CSIR reserves its right to disqualify any bidder who either itself or any of whose members (save for such members who hold a minority interest in the bidder through shares listed on any recognised stock exchange), indirect members (being any person or entity who indirectly holds at least a 15% interest in the bidder other than in the context of shares listed on a recognised stock exchange), directors or members of senior management, whether in respect of CSIR or any other government organ or entity and whether from the Republic of South Africa or otherwise ("Government Entity")

a. engages in any collusive tendering, anti-competitive conduct, or any other similar conduct, including but not limited to any collusion with any other bidder in respect of the subject matter of this bid;

b. seeks any assistance, other than assistance officially provided by a Government Entity, from any employee, advisor or other representative of a Government Entity in order to obtain any unlawful advantage in relation to procurement or services provided or to be provided to a Government Entity;

c. makes or offers any gift, gratuity, anything of any value or other inducement, to any Government Entity's officers, directors, employees, advisors or other representatives

in order to obtain any unlawful advantage in relation to procurement or services provided or to be provided to a Government Entity;

d. accepts anything of value or an inducement that would or may provide financial gain, advantage or benefit in relation to procurement or services provided or to be provided to a Government Entity;

e. pays or agrees to pay to any person any fee, commission, percentage, brokerage fee, gift or any other consideration, that is contingent upon or results from, the award of any tender, contract, right or entitlement which is in any way related to procurement or the rendering of any services to a Government Entity;

f. has in the past engaged in any matter referred to above; or

g. has been found guilty in a court of law on charges of fraud and/or forgery, regardless of whether or not a prison term was imposed and despite such bidder, member or director's name not specifically appearing on the List of Tender Defaulters kept at National Treasury.

16 MISREPRESENTATION DURING THE LIFECYCLE OF THE CONTRACT

16.1 The bidder should note that the terms of its Tender will be incorporated in the proposed contract by reference and that the CSIR relies upon the bidder's Tender as a material representation in making an award to a successful bidder and in concluding an agreement with the bidder.

16.2 It follows therefore that misrepresentations in a Tender may give rise to service termination and a claim by the CSIR against the bidder notwithstanding the conclusion of the Service Level Agreement between the CSIR and the bidder for the provision of the Service in question. In the event of a conflict between the bidder's proposal and the Service Level Agreement concluded between the parties, the Service Level Agreement will prevail.

17 PREPARATION COSTS AND LIMITATION OF LIABILITY

The Bidder will bear all its costs in preparing, submitting and presenting any response or Tender to this bid and all other costs incurred by it throughout the bid process. Furthermore, no statement in this bid will be construed as placing the CSIR, its employees

or agents under any obligation whatsoever, including in respect of costs, expenses or losses incurred by the bidder(s) in the preparation of their response to this bid.

A bidder participates in this bid process entirely at its own risk and cost. The CSIR shall not be liable to compensate a bidder on any grounds whatsoever for any costs incurred or any damages suffered as a result of the Bidder's participation in this Bid process.

18 INDEMNITY

If a bidder breaches the conditions of this bid and, as a result of that breach, the CSIR incurs costs or damages (including, without limitation, the cost of any investigations, procedural impairment, repetition of all or part of the bid process and/or enforcement of intellectual property rights or confidentiality obligations), then the bidder indemnifies and holds the CSIR harmless from any and all such costs which the CSIR may incur and for any damages or losses the CSIR may suffer.

19 PRECEDENCE

This document will prevail over any information provided during any briefing session whether oral or written, unless such written information provided, expressly amends this document by reference.

20 TAX COMPLIANCE

No tender shall be awarded to a bidder who is not tax compliant. If a recommended bidder is not tax complaint, the bidder will be notified in writing of their non- compliant status and the bidder will be requested to submit written proof from SARS of their tax compliant status or proof that they have made an arrangement to meet their outstanding tax obligations within seven (7) working days. Should they fail to do so CSIR will reject their bid.

The CSIR reserves the right to withdraw an award made, or cancel a contract concluded with a successful bidder in the event that it is established that such bidder was in fact not tax compliant at the time of the award or has submitted a fraudulent Tax Clearance

Certificate to the CSIR, or whose verification against the Central Supplier Database (CSD) proves non-compliant. The CSIR further reserves the right to cancel a contract with a successful bidder in the event that such bidder does not remain tax compliant for the full term of the contract.

21 TENDER DEFAULTERS AND RESTRICTED SUPPLIERS

No tender shall be awarded to a bidder whose name (or any of its members, directors, partners or trustees) appear on the Register of Tender Defaulters kept by National Treasury, or who have been placed on National Treasury's List of Restricted Suppliers. The CSIR reserves the right to withdraw an award, or cancel a contract concluded with a Bidder should it be established, at any time, that a bidder has been blacklisted with National Treasury by another government institution.

22 GOVERNING LAW

South African law governs this bid and the bid response process. The bidder agrees to submit to the exclusive jurisdiction of the South African courts in any dispute of any kind that may arise out of or in connection with the subject matter of this bid, the bid itself and all processes associated with the bid.

23 CONFIDENTIALITY

Except as may be required by operation of law, by a court or by a regulatory authority having appropriate jurisdiction, no information contained in or relating to this bid or a bidder's tender(s) will be disclosed by any bidder or other person not officially involved with the CSIR's examination and evaluation of a Tender.

No part of the bid may be distributed, reproduced, stored or transmitted, in any form or by any means, electronic, photocopying, recording or otherwise, in whole or in part except for the purpose of preparing a Tender. This bid and any other documents supplied by the CSIR remain proprietary to the CSIR and must be promptly returned to the CSIR upon request together with all copies, electronic versions, excerpts or summaries thereof or work derived there from.

Throughout this bid process and thereafter, bidder(s) must secure the CSIR's written approval prior to the release of any information that pertains to (i) the potential work or activities to which this bid relates; or (ii) the process which follows this bid. Failure to adhere to this requirement may result in disqualification from the bid process and civil action.

24 AVAILABILITY OF FUNDS

Should funds no longer be available to pay for the execution of the responsibilities of this bid, the CSIR may terminate the Agreement at its own discretion or temporarily suspend all or part of the services by notice to the successful bidder who shall immediately make arrangements to stop the performance of the services and minimize further expenditure: Provided that the successful bidder shall thereupon be entitled to payment in full for the services delivered, up to the date of cancellation or suspension.

25 PERSONAL INFORMATION

25.1 Each Party consents to the other Party holding and processing "personal information" (as defined in the POPI Act) relating to it for legal, personnel, administrative and management purposes (including, if applicable, any "special personal information" relating to him/her, as defined in the POPI Act). Notwithstanding the generality of the aforesaid, each Party hereby undertakes to comply with all relevant provisions of the POPI Act and any other applicable data protection laws. The bidder further agrees to comply with all CSIR's reasonable internal governance requirements pertaining to data protection.

25.2 Each Party consents to the other Party making such information available to those who provide products or services to such parties (such as advisers, regulatory authorities, governmental or quasi-governmental organisations and potential purchasers of such Party or any part of their business).

25.3 While performing any activity where a Party is handling personal information as a "responsible party" (as defined in the POPI Act), each Party undertakes that it will process the personal information strictly in accordance with the terms of the POPI Act, this Contract, and the other Party's instructions from time to time, and take appropriate operational measures to safeguard the data against any unauthorised access.

25.4 Each Party acknowledges that in the course of conducting business with each other, each Party intends to maintain and process personal information about the other Party in an internal database. By signing this Contract, each Party consents to the maintenance and processing of such personal information.
Where relevant, the bidder shall procure that all of its personnel, agents, representatives, contractors, sub-contractors and mandataries shall comply with the provisions of this clause 30 (Personal Information). The CSIR shall be entitled on reasonable notice to conduct an inspection or audit bidders compliance with the requisite POPI Act safeguards.

26 DISCLAIMER

This RFP is a request for proposals only and not an offer document. Answers to this RFP must not be construed as acceptance of an offer or imply the existence of a contract between the parties. By submission of its proposal, bidders shall be deemed to have satisfied themselves with and to have accepted all Terms & Conditions of this RFP. The CSIR makes no representation, warranty, assurance, guarantee or endorsements to bidder concerning the RFP, whether with regard to its accuracy, completeness or otherwise and the CSIR shall have no liability towards the bidder or any other party in connection therewith.

SECTION B

EVALUATION METHODOLOGY

27 TERMS OF REFERENCE

This RFP is for the supply, installation and commissioning of two Backup Diesel Generators, an above ground diesel storage tank, and MLV Distribution Boards at the CSIR Pretoria Campus, Buildings 09. The service offering must include all requirements as set out in **Annexure B**.

28 EVALUATION CRITERIA

The CSIR has set minimum standards that a bidder needs to meet in order to be evaluated and selected as a successful bidder. The minimum standards consist of the following:

Elimination Criteria (Phase 1)	**Technical Evaluation Criteria (Phase 2)**	**Price and Preference Points Evaluation (Phase 3)**	**Objective Criteria**
Only bidders that are not eliminated as per criteria set on paragraph 28.1 on **Phase 1** below will proceed to Technical/Functional Evaluation (Phase 2).	Bidder(s) are required to achieve a predetermined minimum threshold on each of the individual criteria, and a predetermined minimum threshold on 100 points overall. Only bidder (s) who met and/or exceeded the minimum threshold points on **Phase 2** below will proceed to Price and Preference Points Evaluation. (Phase 3)	Bidder(s) will be evaluated out of **100 points** i.e. **80 points** for Price and **20 points** for Preference Points.	The CSIR reserves the right to award this tender to a bidder that did not score the highest total number of points in accordance with Section (2) (1) (f) of the PPPFA (Act 5 of 2000).

28.1 Elimination Criteria (Phase 1)

Proposals will be eliminated under the following conditions:

- Bidder that submitted late bids will not be considered.
- Bidder that submitted to the incorrect location or email address will not be considered (Only electronic submission to **tender@csir.co.za** would be considered).
- Bidder that is listed on the NT database of restricted suppliers will not be considered.

- A bidder that is registered on the NT Register of Tender Defaulters will not be considered.
- Bidder that failed to attend the compulsory site inspection session.
- Bidder who does not have valid and active CIDB registration **4EP** or **highe**r**.**
- Bidder that did not submit mandatory returnable documents as listed on **Annexure E: Proposal Form and List of Returnable Documents (Mandatory Returnable Documents Table).**

28.2 **Technical Evaluation Criteria (Phase 2)**

The evaluation of the functional / technical detail of the proposal will be based on the following criteria:

Functional Factor	Criteria Description	Weighting (%)
Company Experience	The bidder must have a minimum of 5 years' experience in supplying, installation, configuration, and electrical reticulation of backup Generator installations at a data centre of similar or larger size. • The bidder must provide a clearly detailed company profile, stipulating the number of years of rendering similar construction/electrical services as required in the above point.	20
Client References	The bidder must provide a minimum of 5 contactable reference letters for completed projects for the installation of standby generators with the associated switch gear and mechanisms at a data centre of the same or larger size, measured in IT load (kW), • Projects must have been completed between 2017 and 2023.	20
Technical Response	The bidder must adhere to the RFP technical requirements. • Bidder to return the **fully** completed Technical Information as per **Annexure B: Section 4 – Schedules of Technical Information**	20
Risk Mitigation Plan	An exhaustive risk mitigation plan listing all the project related risks as well as the mitigation of each risk. This should include all associated Safety, Health and Environmental risks and suitable mitigation measures.	10
Project Plan	A full project plan listing timeline, actions, dependencies etc.	10

Staff Capability	The Technicians must have a minimum of 5 years' experience in similar electrical installation services performed for the data center industry and civil works as outlined in the specification. • Detailed CV, indicating the number of years the electrical technician has been rendering similar electrical installation services at existing data centers.	10
	• Detailed CV, indicating the number of years the civil technician has been. undertaking civil works as outlined in the specification.	10
TOTAL POINTS FOR FUNCTIONALITY		**100**

Proposals with functionality / technical points of less than the pre-determined minimum overall percentage of **70%** and less than **50 %** on each of the individual criteria will be eliminated from further evaluation on Price and Preference Points Evaluation.
Refer to **Annexure C** (**Technical Evaluation Matrix/Rubrics)** for the scoring ranges/rubrics that will be used to evaluate functionality**.**

28.3 **Price and Preference Points Evaluation (Phase 3)**

Only Bidders that have met minimum thresholds on Technical/functional Evaluation will be evaluated for price and preference points. Price and Preference Points will be evaluated as per **Annexure G**: Preference Points Award Form.

29 OBJECTIVE CRITERIA

The CSIR reserves the right to award this tender to a bidder that did not score the highest total number of points in accordance with Section (2) (1) (f) of the PPPFA (Act 5 of 2000)", under the following conditions:

- The directors, shareholders or officers of the bidder must not be formally charged of fraudulent or illegal conduct which could harm the CSIR's reputation by associating with the bidder.
- The bidder must satisfy the due diligence test, to ascertain the relevance of the work undertaken to the scope of this RFP as per provided references. Due diligence tests will include the following,

- On site reference visits to ascertain if the bidder has performed the work themselves or used sub-contractors. If sub-contractors ware used, what percentage (%) of work was completed by sub-contractors.
- The quality of the work performed based solely on the expertise of the CSIR technical team on this specific subject matter.
- Establish how after sales service are provided, specifically by the bidder themselves or if the involvement of 3rd parties to perform after sales service, i.e., complexity of attaining after sales services and support.
- The way the work was performed with the emphasis on:
    - What expertise was brought to site.
    - How challenges and issues were solved
    - Knowledge of the product
    - How risks were mitigated
    - How did the bidder keep to the agreed timelines
- Cross checks with the OEMs to validate the bidder's technical abilities on the respective products

30 CONSTRUCTION INDUSTRY DEVELOPMENT BOARD (CIDB)

Only those tenderers who are registered with the CIDB or are capable of being so prior to the closing date and time of this RFQ submissions, with a grading of **4 EP or higher** of construction works, will be considered.

Joint ventures are eligible to **submit** proposals provided that:

- Every member of the joint venture is registered with the CIDB;
- The lead partner has a contractor grading designation in the **4 EP or higher** class of construction work; or not lower than one level below the required grading designation in the class of works construction works under consideration and possess the required recognition status;
- The combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to **4 EP or higher** class of construction work.

31 NATIONAL TREASURY CENTRAL SUPPLIER DATABASE (CSD) REGISTRATION

Respondents are required to self-register on National Treasury's Central Supplier Database (CSD) which has been established to centrally administer supplier information for all organs of state and facilitate the verification of certain key supplier information. Business may not be awarded to a Respondent who has failed to register on the CSD.

Only foreign suppliers with no local registered entity need not register on the CSD. In order to enable the CSIR to verify information on the CSD, Respondents are required to provide the unique registration reference number.

Before any negotiations will start with the winning bidder it will be required from the winning bidder to:

- be registered on National Treasury's Central Supplier Database (CSD). Registrations can be completed online at: www.csd.gov.za;
- provide the CSIR of their CSD registration number.

Annexure A

Standard Bidding Document (SBD) 1

PART A: INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE CSIR					
BID NUMBER:	3591/09/10/2023	CLOSING DATE:	09 October 2023	CLOSING TIME:	16:30
DESCRIPTION	The supply, installation and commissioning of two Backup Diesel Generators, an above ground diesel storage tank, and MLV Distribution Boards at the CSIR Pretoria Campus, Buildings 09.				

BID RESPONSE DOCUMENTS *MUST BE SUBMITTED AS STIPULATED IN THE RFP DOCUMENT)*			
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO		**TECHNICAL ENQUIRIES MAY BE DIRECTED TO:**	
CONTACT PERSON	STRATEGIC PROCUREMENT UNIT	CONTACT PERSON	STRATEGIC PROCUREMENT UNIT
TELEPHONE NUMBER		TELEPHONE NUMBER	
FACSIMILE NUMBER		FACSIMILE NUMBER	
E-MAIL ADDRESS	tender@csir.co.za	E-MAIL ADDRESS	tender@csir.co.za

SUPPLIER INFORMATION					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
SUPPLIER COMPLIANCE STATUS	TAX COMPLIANCE SYSTEM PIN:		**OR**	CENTRAL SUPPLIER DATABASE No:	MAAA
1 ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	☐Yes ☐No [IF YES ENCLOSE PROOF]		**2** ARE YOU A FOREIGN BASED SUPPLIER FOR **THE GOODS /SERVICES /WORKS OFFERED?**	☐Yes ☐No [IF YES, ANSWER THE QUESTIONNAIRE BELOW]	

QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS	
IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?	☐ YES ☐ NO
DOES THE ENTITY HAVE A BRANCH IN THE RSA?	☐ YES ☐ NO
DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?	☐ YES ☐ NO
DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?	☐ YES ☐ NO

IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION? ☐ YES ☐ NO
IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 BELOW.

PART B: TERMS AND CONDITIONS FOR BIDDING

1. BID SUBMISSION:

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

1.2. **ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED–(NOT TO BE RE-TYPED) OR IN THE MANNER PRESCRIBED IN THE BID DOCUMENT.**

1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT, 2000 AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.

1.4. **THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (SBD7).**

2. TAX COMPLIANCE REQUIREMENTS

2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.

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

2.3 APPLICATION FOR TAX COMPLIANCE STATUS (TCS) PIN MAY BE MADE VIA E-FILING THROUGH THE SARS WEBSITE WWW.SARS.GOV.ZA.

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

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

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

2.7 NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE, COMPANIES WITH DIRECTORS WHO ARE PERSONS IN THE SERVICE OF THE STATE, OR CLOSE CORPORATIONS WITH MEMBERS PERSONS IN THE SERVICE OF THE STATE."

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

SIGNATURE OF BIDDER: ……

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

DATE: ……...

Annexure B

Technical Specification/Scope of Services for the supply, installation and commissioning of two Backup Diesel Generators, an above ground diesel storage tank, and MLV Distribution Boards at the CSIR Pretoria Campus, Buildings 09.

SECTION 1 – GENERAL

TABLE OF CONTENTS

1. Intent of Document

The specification is intended to cover the complete installation of the generator plant. The minimum equipment requirements are outlined, but do not cover all the details of design and construction. Such details are recognised as being the exclusive responsibility of the contractor.

In all cases where a device or part of the equipment is referred to in the singular, it is intended that such reference shall apply to as many devices as are required to complete the installation.

2. Standards and Codes

Al work and equipment shall be in accordance with the requirements of BS5514 and shall comply with the Occupational Health and Safety Act, No 85 of 1993 and current regulations of all other codes applicable to this work.

All equipment shall be Y2K compliant.

3. Regulations

The installation shall be erected and tested in accordance with the

following Acts and regulations:

a) The latest issue of SABS 0142: “Code of Practice for the Wiring of Premises”,

b) The Occupational Health and Safety Act, 1993 (Act 85 of 1993) as amended,

c) The Local Government Ordinance 1939 (Ordinance 17 of 1939) as amended and the municipal by-laws and any special requirements of the local supply authority,

d) The Fire Brigade services Act 1993 Act 99 of 1987 as amended,

e) The National Building Regulations and Building Standards Act 1977 (Act 103 of 1977) as emended,

f) The Post Office Act 1958 (Act 44 of 1958) as amended,

g) The Electricity Act 1984 (Act 41 of 1984) as amended and

h) The Regulations of the local Gas Board where applicable.

i) Relevant SANS standards (SANS 10142-1:2003)

j) Relevant national and municipal Environmental legislation (Nema)

4. Scope of Work

Supply, delivery and installation of the complete emergency generator set specified in this document.

There will be no plant room provided and the Generator will be installed on a plinth under a Canopy outside.

5. Co-ordination

The standby generator plant canopy will be provided under the same contract. This will include for construction of all foundations, plinths, Clear Vu Fence, Gate, roof cove, etc., required by the Contractor for the installation of the plant and equipment. A detail of all such foundations, plinths, openings, rebates, etc. will be supplied with this tender.

The Contractor shall co-ordinate his program with the Civil, Structural, Electrical and Building Contractor. His installation rates shall include for such "first fixing: of plant as may be required, and for returning at a later stage to complete the installation when the other Contractor's have completed their operations, were necessary.

Delays due to lack of co-ordination between the Contractor's shall not form a basis for claims be the Contractor of this Contract.

6. Test Certificates and Inspections

The following tests are to be carried out:

(a) At the supplier's premises, before the generating set will be delivered to site, Representatives of the Department may be present during the test to satisfy them that the generating set complies with the specification and delivers the specified output. The test must be carried out in accordance with BSS 5514, Part 2 and 3. The Department must be timeously advised of the date for the test.

(b) After completion of the works and before first delivery is taken, a full test will be carried out on the installation for a period of sufficient duration to determine the satisfactory working thereof. During this period the installation will be inspected, and the contractor shall make good, to the satisfaction of the Representative/Agent, any defects which may arise.

(c) The Contractor shall provide all instruments and equipment required for testing and any water, power and fuel required for the commissioning and testing of the installation at completion.

(d) Test reports of both tests as specified under (a) and (b) are to be submitted to the Department.

7. Guarantee and Maintenance

The Contractor shall guarantee the complete plant for a period of twelfth months after the first delivery has taken place.

If during this period the plant is not in working order, or not working satisfactorily owing to faulty material, design or workmanship, the Contractor will be notified and immediate steps shall be taken by him to rectify the defects and/or replace the affected parts on site at his own expense.

The Contractor shall maintain the plant in good working condition for the full twelfth month period to the final delivery of the installation. However, should the Contractor fail to hand over the plant in good working order on the expiry of the specified twelfth months, the Contractor shall be responsible for further monthly maintenance until final delivery is taken.

During this period the contractor will undertake to arrange that the plant be inspected at least once per month by a qualified member of his staff who shall: -

(a) Report to the Officer-in-charge, keeping the maintenance records, and enter into a logbook the date of the visit, the tests carried out, the adjustments made, and any further details that may be required.

(b) Grease and oil moving parts, where necessary.

(c) Check the air filter and, when necessary, clean the filter and replace the filter oil.

(d) Check the lubricating oil and top-up when necessary.

(e) After the plant has run one oil change for the number of hours stipulated by the manufacturers, drain the sump and refill with fresh lubricating oil. The reading of the hour meter on the switchboard will be taken to establish the number of hours run by the plant.

Under this heading only the cost of the actual oil used, shall be charged as an extra on the monthly account.

(f) Clean the lubricating oil filter and/or replace the filter element at intervals recommended by the engine manufacturer, the cost of a new filter element to be charged as an extra on the monthly account.

(g) Check and when necessary adjust the valve settings and the fuel injection equipment.

(h) Check the battery and top-up the electrolyte when necessary.

(i) Test-run the plant for 0,5 hour and check the automatic starting with simulated faults on the mains, the proper working of all parts, including the electrical gear the protective devices with fault indicators, the changeover equipment and the battery charger. Make the necessary adjustments.

(j) Report to the Department and to the Contractor on any parts that become unserviceable through fair wear and tear, or damaged by causes beyond the control of the Contractor.

The Contractor on receiving the report, shall immediately submit a detailed quotation for the repair or replacement of such parts to the Department.

(k) Advise the Department when it has become necessary to de-carbonise the engine and submit a quotation for this service.

(l) Top up the water of the radiator, if applicable.

(m) Clean the plant and its components.

8. Materials and Workmanship

(a) The work throughout shall be executed to the highest standards and to the entire satisfaction of the Representative/Agent who shall interpret the meaning of the Contract Document and shall have the authority to reject any work and materials, which, in his judgement, are not in full accordance therewith. All condemned material and workmanship shall be replaced or rectified as directed and approved by the Engineer.

(b) All work shall be executed in a first-class manner by qualified tradesman.

(c) The Contractor shall warrant that the materials and workmanship shall be of the highest grade, that the equipment shall be installed in a practical and first-class manner in accordance with the best practices and ready and complete for full operation. It is specifically intended that all material or labour which is usually provided as part of such equipment as is called for and which is necessary for its proper completion and operation shall be provided without additional cost whether or not shown or described in the Contract Document.

(d) The Contractor shall thoroughly acquaint himself with the work involved and shall verify on site all measurements necessary for proper installation work. The Contractor shall also be prepared to promptly furnish any information relating to his own work as may be necessary for the proper installation work and shall co-operate with and co-ordinate the work of others as may be applicable.

(e) All components and their respective adjustment, which do not form part of the equipment installation work, but influence the optimum and safe operation of the equipment shall be considered to form part of, and shall be included in the Contractor’s scope of works.

(f) All control equipment and serviceable items shall be installed and positioned such that they will be accessible and maintainable.

(g) The Contractor shall make sure that all safety regulations and measures are applied and enforced during the installation and guarantee periods to ensure the safety of the public and the User Client.

(h) The Contractor is to include for all scaffolding required to complete the work required.

9. Imported Content

This equipment will not be subject to fluctuations in the rate of exchange.

However, should the Contractor choose to be protected against fluctuations in the rate of exchange on imported equipment, the following conditions will apply:

(a) The Materials Offered Ex-Import (Annexure A), which forms part of this tender document, must be completed by the Contractor.

(b) Any fluctuations in the rate of exchange will be for the account of the Government and shall be calculated from a date seven (7) days prior to the date of the Contractor's tender to a date seven (7) days after receipt by the Contractor's bank of the negotiable bill of lading or the exporter's invoice,

provided this latter date is not later than 30 days after the date of payment. Thereafter, fluctuations in the rate of exchange shall not be for the account of the Government.

10. Brochures

Detailed brochures of all equipment offered shall be presented together with the tender documents.

11. Submittals

The following information must accompany the tender documents

(a) Full particulars, performance curves and illustrations of the equipment offered, must be submitted with the Tender.

(b) The design of the control system to comply with the requirements for automatic starting, stopping, interlocking and isolation as specified.

(c) Curves furnished by the engine makers, showing the output of the engine offered against the speed, for both intermittent and continuous operation **as** well as fuel consumption curves when the engine is used for electric generation

The successful Tenderer must, as soon as possible after receipt of the order, submit detailed drawings and wiring diagrams of the plant and the switchgear. One diagram shall be contained in a metal pouch on the side of the switchboard.

SECTION 2 – EQUIPMENT REQUIREMENTS

TABLE OF CONTENTS

3.15 Warning Notices

3.16 Construction

3.17 Operation

1. Engine

1.1 General

The engine must comply with the requirements as laid down in BS 5514 and must be of the atomised injection, compression ignition type, running at a speed not exceeding 1500 r.p.m. The engine must be amply **rated** for the required electrical output of the set, when running under the site conditions. The starting period for either manual or automatic switching-on until the taking over by the generating set, in one step, of a load equal to the **specified** site electrical output, shall not exceed 15 seconds. This must be guaranteed by the Tenderer.

Turbo-charged engines will only be accepted if the Tenderer submits a written guarantee that the engine can deliver full load within the specified starting period.

The CSIR will give preference to the following generator engines namely; Volvo, Perkins, Kohler, Cummins and John Deere.

1.2 Rating

The set shall be capable of delivering the specified output continuously under the site conditions, without overheating. The engine shall be capable of delivering an output of 110 % of the specified output for one hour in any period of 12 hours consecutive running in accordance with BS 5514.

1.3 De-Rating

The engine must be de-rated for the site conditions as set our in the Technical Specification, Section 3 of this document.

The de-rating of the engine for site conditions shall be strictly in accordance with BS 5514 of 1977 as amended to date. Any other methods of de-rating must have the approval of the Department and must be motivated in detail. Such de-rating must be guaranteed in writing and proved by the successful Tenderer at the site test.

1.4 Starting and Stopping

The engine shall be fitted with an electric starter motor and be easily started from cold, without the use of any special ignition devices under summer as well as winter conditions.

Tenderers must state what arrangements are provided to ensure easy starting in cold weather. Full details of this equipment must be submitted. In the case of water cooled engines, any electrical heaters shall be thermostatically controlled. The electrical circuit for such heaters shall be taken from the control panel, and must be protected by a suitable circuit breaker.

1.5 Starter Battery

The set must be supplied with a fully charged lead-acid type battery, complete with necessary electrolyte. The battery must have sufficient capacity to provide the starting torque stipulated by the engine makers. The battery capacity shall not be less than 120 Ah and shall be capable of providing three consecutive start attempts from cold and thereafter a fourth attempt under manual control of not less than 20 seconds duration each. The battery must be of the heavy duty “low maintenance” type, housed in a suitable battery box.

1.6 Cooling

The engine may be either of the air of water cooled type. In the case of water-cooling, a built-on heavy duty, tropical type pressurised radiator must be fitted. Only stand-by sets that are water cooled shall have electric heaters.

For either method of cooling, protection must be provided against running at excessive temperatures. The operation of this protective device must give a visual and audible indication on the switchboard on the switchboard. Water-cooled engines shall in addition be fitted with a low water cut-out switch, installed in the radiator, to switch the set off in the event of a loss of coolant. The protection shall operate in the same way as the other cut-outs (e.g. low oil pressure). All air ducts for the cooling of the engine are to be allowed for. The air shall be supplied from the cooling fan cowling/radiator face to air outlet louvers in the plant room wall.

1.7 Lubrication

Lubrication of the main bearings and other important moving parts shall be by forced feed system. An automatic low oil pressure cut-out must be fitted, operating the stop solenoid on the engine and giving a visible and audible indication on the switchboard.

1.8 Fuel Pump

The fuel injection equipment is suitable for operation with the commercial brands of diesel fuel normally available in South Africa.

1.9 Fuel Tank

The fuel tank will have to form part of the main Generator base to avoid separate plinths for the unit. The tank shall have sufficient capacity for standby sets to run the engine on full load for a period of 12 hours.

The tank shall be fitted with a suitable filter, a full height gauge glass, “low fuel level” alarm, giving an audible and visible signal on the switchboard as well as a low-low fuel level cut-out.

An electrically operated pump with sufficient length of oil resistant hose to reach 8m beyond the Generator shall be supplied, for each set for filling the fuel tank/s from 9000 litres Diesel Tank.

The interconnection fuel piping shall consist of copper tubes and the connection to vibrating components shall be in flexible tubing with armoured covering.

1.10 Governor

The speed of the engine shall be controlled by a governor in accordance with class A2 of BS 5514 of 1977 if not otherwise specified in the Technical Specification.

The permanent speed variation between no load and full load shall not exceed 4,5% of the normal engine speed and the temporary speed variation shall not exceed 10% External facilities must be provided on the engine, to adjust the normal speed setting by ± 5% at all loads zero and rated load.

1.11 Flywheel

A suitable flywheel must be fitted, so that lights fed from the set will be free from any visible flicker.

The cyclic irregularity of the set must be within the limit laid down in BS 5514 of 1977.

1.12 Exhaust Silencer and Sound Attenuation

It is essential to keep the noise level as low as possible as per requirements. An effective exhaust silencing system of the residential type must be provided.

The generator shall come installed within an outdoor rated, full sound attenuated 3CR12 enclosure, if required. The enclosure shall be attenuated according to SANS 10103, SANS 10328 and City Municipal Bylaws, to the allowable noise levels for residential installations. A Maximum of Level III – Generator operates at 68 to 70 d(B)A
range at a range of 7m is required.

The exhaust pipe shall be installed in such a way that the expulsed exhaust fumes will not cause discomfort to the public. The exhaust pipe must be flexibly connected to the engine to take up vibrations transmitted from the engine, which may cause breakage. The exhaust piping and silencer shall be lagged to reduce the heat and noise transmission into the plant room and shall be protected against the ingress of driving rain at up to 45° to the horizontal. The exhaust pipe must extend 0,5m above the roof gutters. It must be secured by flanges both sides of the wall at the point of exit. These flanges must be clamped to the wall with bolts through the wall.

1.13 Accessories

The engine must be supplied complete with all accessories, air and oil filters, 3 instruction manuals, spare parts lists, the first fill of all lubricating oils, fuel, etc.

1.14 Pollution

Regulations for Emissions from Heavy Equipment with Compression-Ignition (Diesel) Engines.

EPA has adopted multiple tiers of emission standards. Most recently, they adopted a comprehensive national program to reduce emissions from nonroad diesel engines by integrating engine and fuel controls as a system to gain the greatest emission reductions.
The Manufacturers are required to meet the EPA T4F requirements as specified. (Environmental Pollution Agency Tier 4 Final)

To meet these Tier 4 emission standards, engine manufacturers will have to produce engines with advanced emission control technologies. Because the emission control devices can be damaged by sulphur, we have also adopted requirements for in-use diesel fuel to decrease sulphur levels by more than 99 percent. The resulting Ultra Low Sulphur Diesel Fuel has a maximum sulphur concentration of 15 parts per million.

NB: EPA T4F requirements as specified. (Environmental Pollution Agency Tier 4 Final) to be adhered

2. Alternator

2.1 General

The alternator shall be of the self-excited brush less type, with enclosed ventilated drip proof housing and must be capable of supplying the specified output continuously with a temperature rise not exceeding the limits laid down in BS 5000 for rotor and stator windings.

The alternator shall be capable of delivering an output of 110% of the specified output, for one hour in any period of 12 hours consecutive running.

Both windings must be fully impregnated for tropical climate and must have an oil resisting finishing varnish.

2.2 Regulation

The alternator must preferably be self-regulated without the utilisation of solid state elements. The inherent voltage regulation must not exceed plus or minus 5% of the nominal voltage specified, at all loads with the power factor between unity and 0,8 lagging and within the driving speed variations of 4,5% between no-load and full load.

2.3 Performance

The excitation system shall be designed to promote rapid voltage recovery following the sudden application of the load. The voltage shall recover to within 5% of the steady state within 300 milli-seconds following the application of full load and the transient voltage dip shall not exceed 18%.

2.4 Coupling

The engine and alternator must be directly coupled by means of a high quality flexible coupling, equal and similar to the “HOLSET” type.

3. Switchboard

3.1 General

A switchboard must be supplied and installed to incorporate the equipment for the control and protection of the generating set and battery charging.

The switchboard must conform the specification as set out in the following paragraphs.

3.2 Construction

The switchboard shall be an Onboard Deep sea - DSE 7320 controller and Gateway 890, unit inside the generator unit.

The board shall be flush fronted and all equipment to be mounted behind the front plate, on suitable supports.

All equipment, connections and terminals shall be easily accessible from the front. The front panels may be either hinged or removable and fixed with studs and chromium-plated cap nuts. Self-tapping screws shall be used in the construction of the board.

All pushbuttons, pilot lights, control switches, instrument and control fuses, shall be mounted on hinged panels with the control wires in flexible looms.

The steelwork of the boards must be thoroughly de-rusted, primed with zinc chromate and finished with two coats of signal red quality enamel, or a baked powder epoxy coating.

Suitably rated terminals must be provided for all main circuits and the control and protection circuits. Where cable lugs are used, these shall be crimped onto the cable strands. Screw terminals shall be of the type to prevent spreading of cable strands. All terminals shall be clearly marked.

For the control wiring, each wire shall be fitted with a cable or wire marker of approved type, and numbering of these markers must be shown on the wiring diagram on the switchboard. Control wiring shall be run in PVC trunking. The trunking shall be properly fixed to the switchboard steelwork. Adhesives shall not be acceptable for the fixing of trunking or looms.

The automatic control and protection equipment shall be mounted on a separate easily replaceable small panel with printed circuits. The equipment shall mainly be the “solid state” type. After mounting the equipment on the panel, the rear of this panel shall be sealed with epoxy-resin. However, other proven control systems may also be considered, but must be described in detail.

All equipment on the switchboard, such as contactors, isolators, busbars, etc., shall have ample current carrying capacity to handle at least 110% of the alternator full load current.

3.3 Protection and Alarm Devices

All switchboards shall be equipped with protection and alarm devices as described below.

A circuit breaker and an adjustable current limiting protection relay must be installed for protection of the alternator. The protection relay shall be of the type with inverse time characteristics. The relay shall cause contactor to isolate the alternator and stop the engine.

Protection must be provided for overload, high engine temperature, low lubricating oil pressure, over speed, start-failure, and low water level.

Individual relays with reset pushed are required, to give a visible signal and stop the engine when any of the protective devices operate. In the case of manual operation of standby sets, it shall not be possible to restart the engine.

The indicators and re-set pushes must be marked in both official languages respectively.

“OVERLOAD”	“OORLAS”
“TEMPERATURE HIGH”	“TEMPERATUUR HOOG”
“OIL PRESSURE LOW”	“OLIEDRUK LAAG”
“OVER-SPEED”	“OORSPOED”
“START FAILURE”	“AANSITFOUT”
“LOW WATER LEVEL”	“LAE WATERVLAK”

In addition two relays with reset pushes must be fitted giving and audible and visible signal when:

(a) The fuel level in the service tank is low. The reset push of this relay must be marked “FUEL LOW” - “BRANDSTOF LAAG”.

In addition, a low-low level sensor must be provided. At this level the engine must stop to prevent air entering the fuel system.

(b) The battery charger failed. The reset push of this relay must be

marked “CHARGER FAIL” - “BATTERYLAAIER FOUTIEF”.

This is also applicable to the engine driven generator/alternator.

All relays must operate an alarm hooter. A pushbutton must be installed in the hooter circuit to stop the audible signal, but the fault indicating light on the control panel must remain lit until the fault has been rectified.

An on/off switch is not acceptable. After the hooter has been stopped, it must be re-set automatically, ready for a further alarm.

The hooter must be of the continuous duty and low consumption type. Both hooter and protection circuits must operate from the battery.

Potential free contacts from the alarm relay must be brought down to terminals for remote indication of alarm conditions.

A test pushbutton must be provided to test all indicators lamps.

3.4 Manual Starting

Each switchboard shall be equipped with two pushbuttons marked “START” and “STOP” for manual starting and stopping of the set.

3.5 Battery Staring Equipment

Each switchboard shall be equipped with battery charging equipment.

The charger shall operate automatically in accordance with the state of the battery and shall generally consist of an air-cooled transformer, a full wave solid state rectifier, and the necessary automatic control equipment of the constant voltage system.

The charger must be fed from the mains. An engine driven alternator must be also a provided for charging the battery while the set is operational. Failure of this alternator must also activate the battery charger failure circuit.

3.6 Switchboard Instruments

Each generating set shall have a switchboard equipped as follows:

(a) One flush square dial voltmeter, reading the alternator voltage, scaled as follows:

(i) 0-300V for single phase generators.

(ii) 0-500V for three phase generator. In this case a six position and off selector switch must be installed for reading all phase and phase to neutral voltages.

(b) A flush square dial combination maximum demand and instantaneous ampere meter for each phase, with resettable pointer suitably scaled 20% higher than the alternator rating. A red arc stripe above scale markings from 0-20A and a red radial line through the scale at full-load current shall be provided. These instruments shall be supplied complete with the necessary current transformer.

(c) One flush square dial vibrating type frequency meter, indicating the alternator frequency.

(d) A six digit running hour meter with digital counter, reading the number of hours the plant has been operating. The smallest figure on this meter must read $^{1}/_{10}$ hour.

(e) Fuses or m.c.b.'s for the potential voltage circuits of the meters.

(f) One flush square dial ampere meter suitably scaled for the battery charging current.

(g) One flush square dial voltmeter with a spring loaded pushbutton or switch for the battery voltage.

3.7 Marking

All labels, markings or instructions on the switchgear shall be in both official languages.

3.8 Earthing

An earth bar must be fitted in the switchboard, to which all non-current carrying metal parts shall be bonded.

The neutral point of the alternator must be solidly connected to this bar by means of a removable link labelled “EARTH” “AARD”. Suitable terminals must be provided on the earth bar for connection of up to three earth conductors, which will be supplied and installed by others.

3.9 Operation Selector Switch

A four position selector switch must be provided on the switchboard marked “AUTO”, “MANUAL”, “TEST” and “OFF” - “AUTO”, “HANDBEHEER” “TOETS” and “AF”.

With the selector on “AUTO”, the set shall automatically start and stop, according to the mains supply being available or not.

With the selector on “TEST”, it shall only be possible to start and stop the set with the pushbuttons, but the running set shall not be switched to the load.

With the selector on “MANUAL”, the set must take the load when started with the pushbutton, but it must not be possible to switch the set on to the mains, or the mains onto the running set.

With the selector on “OFF”, the set shall be completely disconnected from the automatic controls, for cleaning and maintenance of the engine.

3.10 Automatic Change-over System

A fully automatic change-over system must be provided to isolate the mains supply and connect the standby set to the outgoing feeder in case of a mains failure and reverse this procedure on return of the mains.

3.11 By-pass Switch and Main Isolator

The switchboard shall be equipped with an on-load isolator to isolate the mains and a manually operated on-load by-pass switch, which shall either connect the incoming mains to the automatic control gear or directly to the outgoing feeder. In the latter position the automatic control gear, including the main contractors, shall be isolated for maintenance purposes. It shall not be possible to start the engine except with the selector switch in the “TEST” position.

It is required that this by-pass switch and mains isolator be mounted away from the automatic control gear, in a separate compartment either on the side or in the lower portion of the switchboard cubicle, and that the switches can be operated from the front of the compartment.

3.12 Start Delay

Starting shall be automatic in event of a mains failure. A 0-15 second adjustable start delay timer shall be provided to prevent start-up on power trips or very short interruptions.

3.13 Stop Delay

A stop delay with timer is required for the set, to keep the set on load for an adjustable period of one to sixty seconds after the return of the mains supply, before changing back to the supply. An additional timer shall keep the set running for a further adjustable cooling period of 5 to 10 minutes at no-load before stopping.

4. Installation

Except for the supply of the incoming mains cable and outgoing feeder cables, the tenderer must include for the complete installation and wiring of the plant in running order, including the connection of the incoming cable and outgoing feeder cables.

The connecting of the cable and control cabling to the generator and the control terminals in the LV board remains the responsibility of the tenderer.

5. Warning Notices

Notices, in both official languages, must be installed in the plant rooms.

The contents of these notices are summarised below.

(a) Unauthorised entry prohibited.

(b) Unauthorised handing of equipment prohibited.

(c) Procedure in case of electric shock.

(d) Procedure in case of fire.

The successful tenderer must consult the Occupational Health and Safety Act 83 of 1993 and get approval of the wording from the Department's representative, prior to ordering the notices.

Lettering must be black on a yellow background.

Notices (a) must be installed outside next to the entrance of the plant room and (b-d) inside the plant room.

In the plant room, a clearly legible and indelible warning notice must be mounted in a conspicuous position.

The motive shall be made of a non-corrodible and non-deteriorating material, preferable plastic, and must read as follows:

DANGER: This engine will start without notice. Turn selector switch on control board to "OFF" before working on the plant.

GEVAAR: Hierdie masjien sal sonder waarskuwing begin loop. Draai keuseskakelaar op beheerpaneel na "AF" voordat aan die masjien gewerk word.

6. Construction and Enclosure

The engine and alternator of the set shall be built together on a common frame, which must be mounted on a skid base on anti-vibration mountings. The set must be placed direct on the concrete of the generator room. A drip tray must be fitted under the engine. The tray must be large enough to catch a drip from any part of the engine. **The engine and alternator must be in a Sound-Attenuated and Weather Protective Enclosures**

The frame must be of the 'DUPLEX' type.

- The Enclosure is to reside within a dedicated sound attenuated canopy in a dedicated generator under roof cover. Noise levels need to be measured and if noise levels are not acceptable once the new generator is installed, then additional attenuation to the building, must be provided by the contractor. The generator enclosure, shall be an IP 66 rated, silent enclosure manufactured from 3CR12 material and painted as per section A.9.2. The enclosure shall attenuate the generator sound to noise levels stipulated by local council (if applicable). A Maximum of Level III – Generator operates at 68 to 70 d(B)A range at a range of 7m is required

The enclosure shall house the alternator, generator engine, batteries, control panel, fire extinguisher and all other associated generator components. The final size of the enclosure shall be determined by the manufacturer. All the generator enclosure doors shall be lockable with a single key. The Contractor shall supply four keys for each generator as part of the final hand-over. The batteries shall be secured inside a separate enclosure inside the main enclosure. The battery enclosure shall be lockable and ventilated by means of a ducted fan system. The fan system shall run continuously without any power disruptions and shall provide sufficient ventilation to cool the batteries as per the OEM requirements. The generator enclosure shall also be equipped with a low power high brightness LED light for each door opening. This light shall be powered from the generator battery system to ensure that the light is always available.

7. Operation

The set is required to supply the lighting and power requirements in the case of a mains power failure.

The set shall be fully automatic i.e. it shall start when any one phase of the main supply fails or get switched and shall shut down when the normal supply is re-established. In addition it shall be possible to manually start and stop the set by means of pushbuttons on the switchboard.

The automatic control shall make provision for three consecutive starting attempts. Thereafter the set must be switched off, and the start failure relay on the switchboard must give a visible and audible indication of the fault.

To prevent the alternator being electrically connected to the mains supply when the mains supply is on and vice versa, a safe and fail proof system of suitably interlocked contactors shall be supplied and fitted to the changeover switchboard.

SECTION 3 – TECHNICAL SPECIFICATION

TABLE OF CONTENTS

1. General

Supply, deliver, install, commission, test and maintain an emergency generating set at CSIR DATA CENTRE.

This installation must comply fully with all the sections and drawings of this document. This technical specification is supplementary to the Equipment Requirements, Section 2, and must be read together where they are at variance the Technical Specification shall apply.

The Generator sets will be installed outside on plinths.

2. Site Information And Conditions

2.1 Location

The site is at CSIR, Building 9, Pretoria

2.2 Site Conditions

The following site conditions will be applicable and equipment shall be suitably rated to develop their assigned rating and duty at these conditions.

a) Height above sea level : ..... meter
b) Maximum ambient temperature : ..... °C
c) Maximum ambient humidity at lowest temperature : ..... %

3. Output And Voltage

After the de-rating factors for the engine and generator due to site conditions have been taken into account, the set must have a site output and voltage as follows: -

No load voltage: 400/230 Volt

Volt Rating: 650kVA

Power at 0,95 power factor: 520kW

Frequency: 50Hz

Fault Level: 6kA

The generating set is required to feed the following electrical load:

Data Centre UPS system
Mechanical Loads
Aircons DB
Fire suppression system
SANreN room DB and its Cooling Fans

4. Switchboard/Control Panel Unit

All switch- and control gear shall be rated for a fault current level of 6kA.

The switchboard/control panel unit shall be a **Deep sea - DSE 7320 controller and Gateway 890,** Onboard mounted type, which shall be installed inside the generator canopy.

MAIN SWITCH
(Standby Power)

DISTRIBUTION BOARD

LOCAL CIRCUITS

LIGHT CIRCUIT

SOCKET OUTLET CIRCUIT

SPACE & MOUNTING FACILITIES

5. Cables

The contractor will be responsible for all electrical cable connections associated with the complete generating set installation.

The following cables will be supplied, installed and terminated at the Switchboard by the Contractor. Adequate provision shall be made for the termination of these cables at the Switchboard:

DATA Centre Main DB fed XLPE, PVC Insulated Cable

4 X 120mm²

6. Engine

A sump drainpipe must be fitted with a shut-off valve placed in a convenient position outside the base frame to facilitate drainage.

Recommended oil types must be indicated on the engine, or base frames, by means of suitable labels.

All engine instruments shall have clear markings on the faceplates, indicating the normal operating zone(s), maximum and minimum allowable values/limits and danger zone(s).

The flywheel shall be covered by approved hoods.

7. Alternator

The Alternator shall be of the low harmonic type.

8. Load Acceptance

The generator set shall be capable of accepting 75% of the specified site electrical output 10 seconds after the starter motor is energised and the remaining 25%, 5 seconds thereafter, i.e. 100% load acceptance shall not exceed 15 seconds.

9. Generator Site

The size of the Generator Site will be .....12000 mm wide x .....13000. mm long.

10. Alarms

The successful tenderer must pay particular attention to the requirements of the alarms as described in the Equipment Requirements, Section 2.

One alarm hooter and red light shall be supplied and installed on the outside wall of the generator room in the position as shown on the drawing in this specification.

The hooter shall consist of an electronic unit similar and equal to a “Klaxon” - type SY2/725 hooter with a continuously rated output and 110 db at a distance of 2 metres, and shall be IP55 weatherproof rated.

The warning light shall consist of a 40W flashing red light, which shall be mounted on a galvanised steel frame together with the hooter.

The hooter and light shall be switched on or off simultaneously after initiation or cancellation of an alarm condition. The supply and installation of the wiring between the control board and the alarm unit forms part of this contract.

The successful tenderer must ensure that the hooter control circuit resets automatically after cancellation due to a low fuel condition or battery charger failure, but the visible fault indication must remain, i.e. should the operator continue to run the set, the hooter must sound, should any other condition develop.

A remote alarm panel shall be supplied and installed by the contractor in the control room. This shall be of surface mounting, enamelled sheet metal (colour to approval), minimum depth construction, and shall incorporate a flashing red pilot alarm light, adjustable electronic sounder, and a silence push button. The silence button shall not switch off the pilot light - this shall only be switched off when the alarm is reset at the Generator Panel.

A 2,5mm² x 4-core PVC SWA PVC cable will be supplied, installed and terminated by others between the Generator Panel and the Charge Office. The Contractor shall connect this cable at both ends and shall supply and install all switch gear relays, etc. to ensure satisfactory operation of the Remote Alarm Panel.

11. Remote Control Generator Switch

A Remote Control Generator “ON/OFF/AUTO” switch will be supplied and installed by the Contractor, and a 2,5mm² x 4-core PVC SWA PVC cable will be supplied and installed by the Contractor between the Plant room and the Generator Panel.

The contractor shall connect this cable at both ends, and shall supply and install all switch gear, relays, etc. to ensure satisfactory operation of the remote control switch.

12. Fuel Drip Tray

A drip tray approximately 300mm deep shall be mounted below the fuel tank and must be large enough to collect any fuel that drips from the tank accessories. The drip tray shall be manufactured from black mild steel. The thickness of the drip tray sheet steel shall not be less than 2mm.

13. Completion Time

The Generator Set is required to be commissioned in conjunction with the building contract.

14. Inform

The successful tenderer shall inform the Engineer when the set is ready for installation.

15. Fuel Supply Tank

The fuel tank shall be at the Base of the generator set, The tank shall have sufficient capacity for the generating set to run the engine on full load for a period of 12 hours.

A drip tray approximately 100mm deep shall be mounted below the fuel tank and must be large enough to collect any fuel that drips from the tank accessories. The drip shall be manufactured from black mild steel with a thickness of not less than 2mm.

SECTION 4 – SCHEDULES OF TECHNICAL INFORMATION

TABLE OF CONTENTS

SECTION 4 – SCHEDULES OF TECHNICAL INFORMATION

Bidder(s) to complete the Technical Information below. This is a returnable document required for evaluation purposes as listed in the Essential Returnable Documents Used for Scoring Table in Annexure E

1. Engine

NO	ITEM	REMARKS (Please Complete)
1.	Manufacturer's Name	
2.	Country of Origin	
3.	Manufacturer's model No. and year of manufacture	
4.	Continuous sea level rating after allowing for ancillary equipment : a) In break horsepower or b) In kW	
5.	Percentage de-rating for site conditions, in accordance with BS 551.4 a) For altitude b) For temperature c) For humidity d) Total de-rating	
6.	Net output on site in kW	
7.	Nominal speed in r.p.m.	
8.	Number of cylinders	
9.	Strokes per working cycle	
10.	Stroke in mm	
11.	Cylinder bore in mm	
12.	Swept volume in cm^3	
13.	Mean piston speed in m/min	
14.	Compression ratio	
15.	Cyclic irregularity	
16.	Fuel consumption of the complete generating set on site in l/h of alternator output at : a) Full load b) ¾ load c) ½ load	

NO	ITEM	REMARKS (Please Complete)
	NOTE : A tolerance of 5% shall be allowed above the stated value of fuel consumption.	
17.	Make of fuel injection system.	
18.	Capacity of fuel tank in litres	
19.	Is gauge glass fitted to tank?	
20.	Is electric pump for filling the fuel tank included?	
21.	Method of starting	
22.	Voltage of starting system	
23.	Method of cooling	
24.	Type of radiator if water-cooled	
25.	Type of heater for warming cylinder heads	
26.	Capacity of heater in kW	
27.	Method of protection against high temperature	
28.	Method of protection against low oil pressure	
29.	Type of governor	
30.	Speed variation in % a. Temporary b. Permanent	
31.	Minimum time required for as assumption of full load in seconds	
32.	Recommended interval in running hours for : a. Lubricating oil change b. Oil filter element change c. Decarbonising	
33.	Type of base	
34.	Can plant be placed on solid concrete floor?	
35.	Are all accessories and ducts included?	
36.	Is engine naturally aspirated?	
37.	Are performance curves attached?	
38.	Diameter of exhaust pipe	
39.	Noise level in plant room in dBA	
40.	Noise level at tail of exhaust pipe in dBA	

NO	ITEM	REMARKS (Please Complete)
41.	BMEP (4 stroke) at continuous rating (kPa)	
42.	% Load acceptance to BS 5514, Part 4, with 10% transient speed drop	

2. Alternator

NO	ITEM	REMARKS (Please Complete)
1.	Maker's name and model no.	
2.	Country of Origin and year of manufacture	
3.	Type of enclosure	
4.	Nominal speed in r.p.m.	
5.	Number of bearings	
6.	Terminal voltage	
7.	Sea level rating kVA at 0,95 power factor	
8.	De-rating for site conditions	
9.	Input required in kW	
10.	Method of excitation	
11.	Efficiency at 0,95 power factor and : a) Full load b) ¾ load c) ½ load	
12.	Maximum permanent voltage variation in %	
13.	Transient voltage dip on full load	
14.	Voltage recovery on full load application in milli-seconds	
15.	Is alternator brushless?	
16.	Class of insulation of windings	
17.	Is alternator tropicalised?	
18.	Symmetrical short circuit current at terminals n Ampere	
19.	Type of Coupling	

3. Switchboard

NO	ITEM	REMARKS (Please Complete)
1.	Maker's Name	
2.	Country of Origin	
3.	Is board floor mounted?	
4.	Finish of board	
5.	Make of volt, amp, and frequency meters	
6.	Dial size of meters in mm	
7.	Scale range of voltmeter	
8.	Scale range of ammeters	
9.	Ration of current transformers	
10.	Make of hour meter	
11.	Range of cyclometer counter	
12.	Smallest unit shown on counter (Item 11)	
13.	Make of circuit breaker	
14.	Type of circuit breaker	
15.	Rating of circuit breaker in Amp and fault level in kA	
16.	Setting range of overload trips	
17.	Setting range of instantaneous trips	
18.	Make of change-over equipment	
19.	Make of voltage relay	
20.	Is control and protection equipment mounted on a small removable panel?	
21.	Type of control equipment	
22.	Make of mains isolator	
23.	Type of indicators for protective devices	
24.	Make of rectifier	
25.	Type of rectifier	
26.	Is battery charging	
27.	Are volt- and ammeters provided for charging circuit?	
28.	Is the alarm hooter of the continuous duty type?	
29.	Rating in Amps of : a. Change-over equipment b. Mains on load isolator	

NO	ITEM	REMARKS (Please Complete)
	c. By-pass switch d. Circuit breaker to outgoing feed	
30.	Is manufacture of switchboard/control panel to be sub-let?	
31.	If yes, state name and address of specialist manufacturer	

4. Battery

NO	ITEM	REMARKS (Please Complete)
1.	Maker's Name	
2.	Country of Origin	
3.	Type of battery	
4.	Voltage of battery	
5.	Number of cells	
6.	Capacity in cold crank amp	

5. Dimensions

NO	ITEM	REMARKS (Please Complete)
1.	Overall dimensions of set in mm	
2.	Overall mass	
3.	Is the generator room adequate for the installation of the set	

6. Deviation from the Specification as An Alternative (State Briefly)

NO	DESCRIPTION (Please Complete)

7. Spare Parts and Maintenance Facilities

NO	ITEM	REMARKS (Please Complete)
1	Approximate value of spares carried in stock for this particular diesel engine and alternator	
2	Where are these spares held in stock	
3	What facilities exist for the servicing of the equipment offered	
4	Where are these facilities available	

SECTION 5 –TECHNICAL ISPECIFICATION FOR DISTRIBUTION BOARDS

5. DISTRIBUTION PANELS

Distribution panels shall be manufactured according to the drawings and the General specification in this document. Panels shall be provided in the following locations:

- **1 x New Floor Mounted Main LV Distribution Board – MDB 9**
  Main LV Distribution Board Board (MDB 9) with Change over switch (ATS). The Board to have online thermal scanning functionality and some of the MCCB's to have micro logics to enable Client to monitor power quality and consumption.
- **1 x Surface Mounted Distribution Board – Data Centre**
  DATA Center Distribution Board. The Board to have online thermal scanning functionality and some of the MCCB's to have micro logics to enable Client to monitor power quality and consumption.

Drawings of DB's, showing the proposed lay-out of equipment, must be submitted to the Engineer for approval, before manufacturing commences.

Busbars must be positioned to allow for cable entry from the Top and bottom. All bus bars must be tinned and rated according to the main circuit breaker and allows for 30% load increase.

Positions for spare equipment must be blanked off with blank clip-in cover or blank clip-in circuit breakers.

All boards must be inspected in the factory by the engineer before delivery.

All distribution panels are to comply with the requirements of clause 6.6 of SANS 10142-1 (previously SABS 0124-1).

METERING

Besides the municipal metering device that the municipality uses for billing, a local metering device will be installed in the main LV DB (MDB 9) for information purposes. The device will have an LCD display with energy, voltage, current and power readings. The University recommended that the Elster A1140 smart meters be used.

Elster A1140 smart meter

5.1 BUSBARS

Copper bus bars provided for each phase and neutral and marked in phase colours shall be mounted on insulators. Boards shall be suitably sized to accommodate, without undue cramping, all equipment.
A substantial brass earth bar, solidly bonded to the metalwork of the board, is to be provided with connectors for the incoming earth conductor and the earth wires of outgoing circuits.

5.2 MARKING AND LABELLING

Clearly engraved labels are to be mounted on or below every switch. The wording of the labels in one official language is to be according to the lay-out drawings or as directed by the engineer's representative and must be confirmed on site. Flush mounted board 2,0m above the finished floor level. Where relevant, 2,0m above the finished floor level. Where relevant, distribution boards shall conform to SABS 1180.

5.3 EQUIPMENT FOR DISTRIBUTION BOARDS

5.3.1 EARTH LEAKAGE RELAY (30mA): SINGLE OR THREE PHASE WITH ASSOCIATED CIRCUIT BREAKER.

The unit shall withstand fault currents (in accordance with SABS 156 of 6 kA, as required, between phase and earth, between phase and phase, or between phase and neutral without sustaining damage.

The circuit breakers shall be provided with overload trip coils and shall have a rupturing capacity of 6 kA as required, when tested in accordance with SABS 156.

The earth leakage unit must comply fully with SABS 767, as revised, and bear the SABS mark, equivalent to the ABB make.

5.3.2 INDOOR LIGHTNING AND SURGE ARRESTERS

The arresters shall be of the three-pole indoor type for mounting on a meter board and suitable for the protection of domestic electrical appliances and sensitive electronic equipment.

The arresters shall be of Class 1 and Class 2 with a minimum of a Class 2 surge arrester in the main Distribution board. SANAS 10142-1: 2008 requires that surge arresters must withstand a nominal surge current of 6kA and a peak surge of 15kA. This is inadequate, please comply to the IEC standard of a nominal surge current rating of 10kA and 25kA peak surge current.

In case of damage caused by very severe overloads, the arrester must be automatically disconnected from the mains and a visual indication must be given to show that the arrester has been disconnected.

The arresters shall be suitable for systems with grounded neutral and voltage up to 250V to earth.

5.3.3 MOULDED CASE CIRCUIT BREAKERS (MCCBs): (1A - 1200A)

Existing Main Low Voltage (MLV) board will be replaced with a new MLV board, CSIR envisages an almost maintenance free MLV board where the board will have online thermal scanning and some of the MCCBs will have micro logics to enable CSIR to monitor power quality and consumption alike. Further, the new MLV board will feed the whole of building 9 and the data centre.
All infrastructure will have early warning monitoring, using the most appropriate technology. Notifications will be sent to CSIR maintenance personnel using SMS, messaging service, and or e-mails, to alert of system warnings.

Circuit breakers shall be three pole housed in an insulating moulded chase and suitable for panel mounting. The circuit breakers shall comply with IEC 157-1 and SABS 156 and shall be similar or equivalent to the ABB compact systems suitable for standard performance levels (type N).

Circuit breakers shall be suitable for operation on supply voltages of 380/220V to 440/250V 50Hz, and the rupturing capacity at these voltages when the circuit breakers are tested in accordance with clause 7.10 of SABS 156 shall be as listed below for the various categories of circuit breakers.

The overload and short circuit trips of the circuit breaker may be of the following type:

(a) Combined thermal/magnetic trips with interchangeable trip units, the magnetic trip setting being adjustable.

(b) Combined thermal/magnetic trips with fixed and sealed trip units, the magnetic trip setting being adjustable.

The tripping times of the circuit breakers shall be in accordance with SABS 156.

The circuit breaker contacts are to be of silver alloy, and arc chutes or magnetic blow-outs must be provided.

The continuous current rating, trip rating and rupturing capacity of the circuit breaker shall be as stated in the directions for the service, and shall be one of the following categories covered by this specification: -

Normal Current	Rupturing capacity (@ 380/400V, AC) Symmetrical (current)	Equal and Similar to
500 - 1000 A	35kA	ABB
250 - 500 A	10kA	ABB
250A and less	15kA	ABB

5.3.4 TRIPLE POLE ON LOAD ISOLATORS WITHOUT TRIPS

The switches shall be of the triple pole, hand operated panel mounting, air break type, having continuous current ratings as indicated below, and suitable for operation on 330 - 440V, 50Hz systems.

The contacts are to be of silver alloy, and the switch mechanism shall be of the quick make quick break type.

The switches are required to open and close circuits carrying currents up to the full current rating of the switch.

The switches shall further be capable of being closed against faults and shall temporarily withstand the following system fault currents, until the associated circuit breakers operate:

Isolator rating 60A : Fault current 2 500A
Isolator rating 100A : Fault current 10 000A
Isolator rating 100A : Fault current 15 000A
Isolator rating 150A : Fault current 15 000A
Isolator rating 250A : Fault current 25 000A
Isolator rating 450A : Fault current 25 000A
Isolator rating 600A : Fault current 25 000A
Isolator rating 1000A : Fault current 25 000A

The switches are to be housed in moulded bakelite cases and are to be suitable for back of panel mounting.

To distinguish the switches from circuit breakers, to operating handles shall have a distinctive colour, preferably red and shall be indelibly marked “Isolator”.

5.3.5. MULTICORE CABLES

All cables must be of the stranded copper conductors with PVC outer insulation, PVC sheath, steel wire armouring and PVC outer sheath suitable for 660-volt operation. Cables shall comply with SABS 150 1970 as amended.

All cable terminations shall be of the “Pratley” or other approved type with neoprene covers and earthing facilities. The armouring shall be connected to earth at each end. Where specified an earth wire shall be run with each cable. Cable through joints will normally not be allowed.
Where approved by the Engineer it shall be of the epoxy resin type similar and equal to Scotch-cast.

5.3.6. WIRING

All wiring shall be done with PVC conductors complying with SABS 0142 unless otherwise specified or shown on the drawings. The sizes of conductors shall be in accordance with SABS 0142 as amended.

Except where otherwise specified wiring shall be carried out in conduit throughout. The number of wires in a conduit shall comply with SABS 0142 as amended.

The wiring shall be done in PVC insulated 600/1000V grade cable to SABS 150 a (tables C and H). Normal light circuits to be 2,5mm² conductors, SSO to be 4mm² conductors and stove and geysers 4mm² conductors unless specified otherwise.

5.3.7CABLE TERMINATIONS & ENTRIES

(a) All cable entries shall be from below and cable terminals shall be provided with lugs appropriate to the cable specified, including bolts, nuts, plain washers and locknuts. These terminals shall be located within 150mm of the cable boxes or gland plates and approved copper riser connections shall be provided between the terminals and the associated fuse or circuit breaker.

(b) The armoring of all cables shall be earthed to the main earth busbar together with the bare copper earth conductor specified with that cable. The armoring shall be neatly bent back over the outer PVC sheath and clamped to the channel with a K-clamp together with a short strand of bare copper earth conductor. This bare copper conductor shall be of the same cross section areas as the one laid with the cable and shall be connected to the earth busbar.

5.3.8 INSPECTION OF CABLES AND CABLE TRENCHES

After the cables have been installed and spaced on top of the layer of sand in the trenches, the installation shall first be inspected and approved by the Engineer before the trenches may be refilled. Should the Electrical Contractor not meet with these requirements, or if he

fails to give the Engineer sufficient notice of an inspection, portions of the trenches or the complete trench shall have to be re-excavated by the Contractor at his own expense for inspection purposes, as required by the Engineer.

A logbook with three copies per page shall be kept by the Electrical Contractor on the site, in which each part of the installation that has been inspected can be recorded after inspection and approval.

5.3.9 TESTING AND COMMISSIONING

The Contractor shall make allowance in his tender for the complete testing and commissioning of the installation. All tests shall be carried out in the presence of the Engineer or his representative and notice of the envisaged testing date shall be given at least ten days beforehand.

The Contractor shall make allowance in his tender for the supply of all instruments, materials and tests which will be required for the commissioning.

Should any part of the installation fail during a test, or should the equipment in the opinion of the Engineer not meet with the requirements, the Contractor shall replace, repair or correct such equipment at his expense, to the satisfaction of the Engineer.

The following tests shall be carried out:

5.3.9.1 LOW VOLTAGE INSTALLATION

Continuity tests to prove the correct connection and correct phase connection of all Low Voltage cables.

Continuity test to prove the earthing of all cable armouring and earthing conductors.

Should the Engineer have reason to believe that cables may be damaged, a pressure test shall be conducted on the armouring to determine the state of the PVC sheath.
Tests for 600/1000V cables as detailed in SABS 150 par. D-3 or equivalent for cables manufactured according to BS specification.

5.3.10. INSPECTIONS

Inspections shall be conducted as follows, unless other arrangements are made by the Engineer.

a) After a specific section of trenching has been excavated the Contractor shall give the Engineer or his representative 24 hours' notice that he wants to install cable in this specific area. The Engineer or his representative shall then inspect the trench and approve it in writing before cable can be installed in the trench by the Contractor. This inspection shall be carried out as soon as possible after receiving the mentioned notice from the Contractor.

b) After the trench has been approved, the Contractor can proceed to install cable in the trench. Only after the cable installation has been approved in writing can the trench be backfilled.

5.3.11. CERTIFICATE OF COMPLIANCE

On completion of the service, a certificate of compliance must be issued to the Engineer's Representative/Agent in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993).

5.3.12 EARTHING OF INSTALLATION

Main earthing

The type of main earthing must be as required by the supply authority if other than the Engineers, and in any event as directed by the Engineer's representative, who may require additional earthing to meet test standards.
Where required an earth mat shall be provided, the minimum size, unless otherwise specified, being 1,0m x 1,0m and consisting of 4mm diameter hard-drawn bare copper wires at 250mm centres, brazed at all intersections.

Alternatively, or additionally earth rods or trench earths may be required as specified or directed by the Engineer's authorised representative.

Installations shall be effectively earthed in accordance with the “Wiring Code” and to the requirements of the supply authority. All earth conductors shall be stranded copper with or without green PVC installation.

Connection from the main earth bar on the main board must be made to the cold water main, the incoming service earth conductor, if any and the earth mat or other local electrode by means of 12mm x 1,6mm solid copper strapping or 16mm² stranded (not solid) bare copper wire or such conductor as the Engineer’s representative may direct. Main earth copper strapping where installed below 3m from ground level, must be run in 20mm diameter conduit securely fixed to the walls.

All other hot and cold-water pipes shall be connected with 12mm x 0,8mm perforated for solid copper strapping (not conductors) to the nearest switchboard. The strapping shall be fixed to the pipework with brass nuts and bolts and against walls with brass screws at 150mm centres. In all cases where metal water pipes, down pipes, flues, etc., are positioned within 1,6m of switchboards an earth connection consisting of copper strapping shall be installed between the pipework and the board. In vertical building ducts accommodating both metal water pipes and electrical cables, all the pipes shall be earthed at each distribution board.

5.3.13. DRAWINGS

A complete a set of "As Installed" drawings of the work as it progresses shall be kept by the Contractor in his site office. A paper drawing(s) showing only the general layout of the area shall be furnished to the Contractor for this purpose. The Contractor shall indicate on this drawing(s) all work completed as well as all the required dimensions.

The following information with dimensions shall be indicated on the drawing(s):

All dimensions shall be taken from easily identifiable fixed points or lines, for example stand corner beacons or stand boundaries.

The Engineer shall weekly inspect and certify the drawing, unless arranged otherwise by the Engineer.

Progress payments shall be made only for the portions of the work certified on the drawing

On completion of the reticulation installation the Contractor shall furnish the Engineer with two complete sets of transparencies, indicating the installation as actually installed. These drawings shall indicate the actual positions of all cables, cable joints, cable crossings, etc. taken from the weekly certified drawing.

The penultimate recommendation shall not be made before the aforementioned drawings have been handed to and approved by the Engineer.

5.3.14 REGULATIONS

The installation shall be erected and tested in accordance with the following Acts and regulations:

- The installation shall be erected and tested in accordance with the latest issues and amendments of the following Acts and regulations.

  (i) SABS 0142: “Code of Practice for the Wiring of Premises”,
  (ii) The Occupational Health and Safety Act, 1993 (Act 85 of 1993),
  (iii) The Local Government Act 1998 (Act 10 of 1998 (Gauteng), municipal by-laws and any special requirements of the local supply authority,
  (iv) The Fire Brigade services Act 2000 (Act 14 of 2000),
  (v) The National Building Regulations and Building Standards Act 1996 (Act 29 of 1996)
  (vi) The Post Office Act 1998 (Act 124of 1998),
  (vii) The Electricity Act 1996 (Act 88 of 1996),
  (viii) The Regulations of the local Gas Board where applicable,
  (ix) The National Water Act 1998 (Act no. 36 of 1998),
  (x) The General Authorizations (Water Act),
  (xi) The Environmental Conservation Act 1998 (Act no. 73 of 1998),
  (xii) The National Environmental Management Act 1998 (Act no. 107 of 1998) and
  (xiii) The Relevant SABS publications (such as for example SABS 252 parts 1 and 2, SABS 400, etc.)
  (xiv) Lighting Protection Standards: SANS Codes of Practice 10313 (2018) in conjunction with SANS 62305-1-2-3-4: 2011, as well as SANS 10199 (2016), SANS 1063 (2015) and SANS 62561: 1-7: 2012-2018. And IEC 62305-1-2-3-4 2010

Annexure C

Technical Evaluation Matrix/Rubrics

The Provision, supply of, installation and commissioning of two Backup Diesel Generators, an above ground diesel storage tank, and MLV Distribution Boards to the CSIR Pretoria.

RFP No. 3591/09/10/2023

Scoring sheet to be used to evaluate functionality.

No.	Criteria	Proof required	Points allocation	Weight
1	**Company Experience:** The bidder must have a minimum of 5 years' experience in supplying, installation, configuration, and electrical reticulation of dual Backup Generator installations at a data centre of similar or larger size.	The bidder must provide a clearly detailed company profile, stipulating the number of years supplying, installing, configuring, and electrical reticulation of dual Backup Generator installations at a data centre of similar or larger size	< 5 years **– 0 points** 5 and less than 7 years **– 5 points** 7 and less than 9 years **– 7 points** >9 years **– 10 points**	**20%**
2	**Client References (Only relevant references)** The bidder must provide a minimum of 5 contactable reference letters for completed projects for the installation of standby generators with the associated switch gear and mechanisms at a data center of the same or larger size, measured in IT load (kW) is required. (Award letters or Purchase Orders or Completion Certificates will not be considered)	• The bidder must provide a minimum of 5 reference letters for similar completed projects. • Projects must have been completed between 2017 and 2023. • The references letters must have the following details: ▪ Be on official company letterhead. ▪ Indicate the description of the services and date of the service provided, and value of the transaction or contract.	< 5 relevant reference letters **– 0 points** 5 – 6 relevant reference letters **– 5 points** >7 – 8 relevant reference letters **– 7 points** >9 relevant reference letters **– 10 points**	**20%**

		▪ Have an email address and telephone number of the client. ▪ Be dated and signed. Due diligence will be conducted to verify the provided references before contract award.		
3	**Technical Response** Technical Information as per **Annexure B: Section 4 – Schedules of Technical Information** (Page 46 to 51)	The bidder must **fully** complete and return Technical Information as per Annexure B: Section 4 – Schedules of Technical Information (Page 46 to 51) Bidder must: • Adhere to technical requirements	Bidder failed to submit a fully completed technical Information documentation or non-submission of **fully** completed technical Information documentation. -**0 Point.** Bidder submitted technical information document completed in **full,** and adheres to technical requirements **- 10 points.**	**20%**

4	**Risk mitigation Plan**
	
	The data centre is a live environment and needs to be kept live during all stages of the project. Risks related to possible power loss to the data centre needs to be highlighted and prioritized.
		The bidder must submit a risk mitigation plan addressing:
		
		• Risks pertaining to delivery and availability that may influence the outcome of the project delivery deadlines.
		  • General risks i.e. electrical shock, property damages etc
		  • SHE Risks and mitigating measures.
		
		Bidder must provide a descriptive mitigation for each risk listed.
			Risk mitigation plan is not submitted or submitted plan is fails to list critical risks and acceptable mitigation actions.
			- **0 points**
			
			Risk mitigation plan identifies critical risks, and some of the mitigation's actions are aligned and acceptable.
			- **5 points**
			
			Risk mitigation plan identifies critical risks, and mitigations actions are aligned and acceptable.
			- **7 points**
			
			All known risks related to the project and environment are listed and the mitigation strategy aligns with the risks.
			- **10 Points.**
				10%

5	**Project Plan**	Bidder must submit a comprehensive project plan, clearly addressing respective stages and stage gates**.** The project plan must provide for**;**	Project Plan is not submitted or submitted project plan fails to provide for critical tasks or its not well constructed, missing obvious requirements such as critical path etc. and not realistic either.	**10%**

		• Stages i.e. contracting, procurement, delivery, installation etc • Dependencies (must be well articulated) • Realistic and executable Project timelines. • Well-articulated multiple execution paths as well as critical path.	**0 points.** Submitted Project plan is well constructed but missing some critical tasks / actions etc., but timelines not realistic. **5 Points.** Project plan is well constructed, timelines are realistic. Most actions/tasks are articulated in the plan. **7 Points.** Submitted Project plan is well constructed, realistic and contains all the required elements. **10 Points**	
6	**Staff Capability** • The Technician must have a minimum of 5 years' experience in similar electrical installation services. Detailed CV, indicating the number of years the technician has been installing similar electrical installation services.	• Detailed CV, indicating the number of years the electrician has been installing similar electrical installations and generators.	< 5 years **– 0 points** 5 and less than 7 years **– 5 points** >7 and less than 9 years **– 7 points** >9 years **– 10 points**	**10%**
	• The Technician must have a minimum of 5 years' experience in similar civil works. Detailed CV, indicating the number of years the technician has been undertaking civil works as outlined in the specification.	• Detailed CV, indicating the number of years the civil technician has been. undertaking civil works as outlined in the specification.	< 5 years **– 0 points** 5 and less than 7 years **– 5 points** >7 and less than 9 years **– 7 points** >9 years **– 10 points**	**10%**
	Total			**100**

Annexure D

Pricing Schedule- FIRM PRICES

Supply, installation and commissioning of two Backup Diesel Generators, an above ground diesel storage tank, and MLV Distribution Boards at the CSIR Pretoria Campus, Buildings 09.

RFP No. 3591/09/10/2023

NOTE: **ONLY FIRM PRICES WILL BE ACCEPTED. NON-FIRM PRICES (INCLUDING PRICES SUBJECT TO RATES OF EXCHANGE VARIATIONS) WILL NOT BE CONSIDERED**

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

Bidder to refer to attached Bill of Quantities (BoQ) for pricing.

Note: All delivery costs must be included in the bid price, for delivery at the prescribed destination.

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

Annexure E

Proposal Form and List of Returnable Documents

The supply, installation and commissioning of two Backup Diesel Generators, an above ground diesel storage tank, and MLV Distribution Boards at the CSIR Pretoria Campus, Buildings 09.

RFP No. 3591/09/10/2023

I/We_____

[name of entity, company, close corporation or partnership] of [full address]

_____

_____

carrying on business trading/operating as

_____

represented by _____in my capacity as

_____

being duly authorised thereto by a Resolution of the Board of Directors or Members or Certificate of Partners, dated _____to enter into, sign execute and complete any documents relating to this proposal and any subsequent Agreement. The following list of persons are hereby authorised to negotiate on behalf of the abovementioned entity, should CSIR decide to enter into Post Tender Negotiations with shortlisted bidder(s).

FULL NAME(S) CAPACITY SIGNATURE

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

I/We hereby offer to supply the abovementioned Services at the prices quoted in the schedule of prices in accordance with the terms set forth in the documents listed in the accompanying schedule of RFP documents.

I/We agree to be bound by those conditions in CSIR's:

1. General RFP Terms and Conditions; and CSIR's Purchasing Terms and Conditions or Any other standard or special conditions mentioned and/or embodied in this Request for Proposal.

I/We accept that unless CSIR should otherwise decide and so inform me/us in writing of award/intent, this Proposal [and, if any, its covering letter and any subsequent exchange of correspondence], together with CSIR's acceptance thereof shall constitute a binding contract between CSIR and me/us.

I/We further agree that if, after I/we have been notified of the acceptance of my/our Proposal, I/we fail to enter into a formal contract if called upon to do so, or fail to commence the supply of Services within 4 [four] weeks thereafter, CSIR may, without prejudice to any other legal remedy which it may have, recover from me/us any expense to which it may have been put in calling for Proposals afresh and/or having to accept any less favourable Proposal.

I/We accept that any contract resulting from this offer will be for a period as determined by the CSIR.

Furthermore, I/we agree to a penalty clause/s which will allow CSIR to invoke a penalty against us for non-compliance with material terms of this RFP including the delayed delivery of the Services due to non-performance by ourselves, failure to meet Subcontracting.

I/we agree that non-compliance with any of the material terms of this RFP, including those mentioned above, will constitute a material breach of contract and provide CSIR with cause for cancellation.

ADDRESS FOR NOTICES

The law of the Republic of South Africa shall govern any contract created by the acceptance of this RFP. The ***domicilium citandi et executandi*** shall be a place in the Republic of South Africa to be specified by the Respondent hereunder, at which all legal documents may be served on the Respondent who shall agree to submit to the jurisdiction of the courts of the Republic of South Africa. Foreign Respondents shall, therefore, state hereunder the name of their authorised representative in the Republic of South Africa who has the power of attorney to sign any contract which may have to be entered into in the event of their Proposal being accepted and to act on their behalf in all matters relating to such contract.

Respondent to indicate the details of its ***domicilium citandi et executandi*** hereunder:
Name of Entity:

_____

Facsimile: _____

Address: _____

_____

_____

NOTIFICATION OF AWARD OF RFP

As soon as possible after approval to award the contract(s), the successful Respondent [**the Service provider**] will be informed of the acceptance of its Proposal. Unsuccessful Respondents may be advised in writing of the name of the successful Service provider and the reason as to why their Proposals have been unsuccessful, for example, in the category of price, delivery period, quality, B-BBEE or for any other reason.

VALIDITY PERIOD

CSIR requires a validity period of 90 [Ninety calendar Days from closing date] against this RFP.

Bidders are to note that they may be requested to extend the validity period of their bid, at the same terms and conditions, if the internal evaluation process has not been finalised within the validity period. However, once the adjudication body has approved the process and award of the business to the successful bidder(s), the validity of the successful bidder(s)' bid will be deemed to remain valid until a final contract has been concluded.

NAME(S) AND ADDRESS / ADDRESSES OF DIRECTOR(S) OR MEMBER(S)

The Respondent must disclose hereunder the full name(s) and address(s) of the director(s) or members of the company or close corporation [**C.C.**] on whose behalf the RFP is submitted.

1. Registration number of company / C.C.

   _____

2. Registered name of company / C.C.

   _____

3. Full name(s) of director/member(s) Address/Addresses ID Number(s)

   _____

   _____

   _____

RETURNABLE DOCUMENTS

Returnable Documents means all the documents, Sections and Annexures, as listed in the tables below.

a) **Mandatory Returnable Documents**

Failure to provide any Mandatory Returnable Documents at the closing date and time of this bid will result in a Respondent's disqualification. Bidders are therefore urged to ensure that all these documents are returned with their Proposals.

Please confirm submission of the mandatory Returnable Documents detailed below by so indicating [**Yes** or **No**] in the table below:

MANDATORY RETURNABLE DOCUMENTS	SUBMITTED [Yes/No]
Valid Letter of Good Standing as issued by the Department of Labour (COID) or private insurer relevant to scope of work.	
Proof of electrician's registration document with Department of Labour (DOL);	
In the case of Joint Ventures, bidder must submit a copy of the **signed** Joint Venture Agreement.	
In the case of subcontracting arrangements, bidder must submit a copy of the **signed** subcontracting agreement, clearly stating each parties' responsibilities and % split of work.	
Electrician's qualifications certificates (Passed Trade test)	
Proof of three Phase Installation Certificate (Wiremans License)	

b) **Essential Returnable Documents**

In addition to the requirements of section (a) above, Respondents are further required to submit with their Proposals the following **essential Returnable Documents** as detailed below.

Essential Returnable Documents required for evaluation purposes:

Failure to provide any essential Returnable Documents used for purposes of scoring a bid, by the closing date and time of this bid will not result in a Respondent's disqualification. However, Bidders will receive an automatic score of zero for the applicable evaluation criterion. Bidders are therefore urged to ensure that all these documents are returned with their Proposals.

Please confirm submission of these essential Returnable Documents by so indicating [Yes or No] in the table below:

ESSENTIAL RETURNABLE DOCUMENTS USED FOR SCORING	SUBMITTED
Annexure C: Pricing Schedule or Bill of Quantities	
Annexure H: Preference Points Award Form in Terms of the Preferential Procurement Regulations 2022 (Mandatory documents to claim preference points) • Valid copy of BBBEE certificate/ sworn affidavit ✓ In case of unincorporated trust, consortium or joint venture, they must submit their consolidated B-BBEE scorecard with their **individual B-BBEE Certificate or Sworn Affidavit**. ✓ In case of sub-contracting both parties must submit copies of their valid BBBEE certificates. NB: Non-submission or invalid submission will result in zero points. Should the individual entity's B-BBEE Certificate or Sworn Affidavit of the unincorporated trust, consortium or joint venture parties **be invalid**, the joint venture scorecard will also be invalid.	
Risk Mitigation Plan	
Project Plan	
Reference Letters	
Company Profile	
Technical Information as per Annexure B: Section 4 – Schedules of Technical Information (Page 46 to 51)	
Electrical Technician's CV	
Civil Technician's CV	

Other Essential Returnable Documents:

Failure to provide other essential Returnable Documents may result in a Respondent's disqualification. Bidders are therefore urged to ensure that all these documents are returned with their Proposals.

Please confirm submission of these essential Returnable Documents by indicating Yes or No in the table below

OTHER ESSENTIAL RETURNABLE DOCUMENTS	SUBMITTED [Yes/No]
Annexure A: Standard Bidding Document (SBD) 1 Form	
Annexure E: Proposal Form and List of Returnable documents *(This document)*	

Annexure F: Certificate of Acquaintance with RFP, Terms & Conditions & Applicable Documents	
Annexure H: Standard Bidding Document (SBD) 4 Form	
Annexure I: RFP Declaration and Breach of Law Form	
Annexure J: Mutual Non-Disclosure Agreement	
Valid Proof of public liability cover of a minimum of R 5m or letter of intent issued by an insurance company	

CONTINUED VALIDITY OF RETURNABLE DOCUMENTS

The successful Respondent will be required to ensure the validity of all returnable documents, including but not limited to its Tax Clearance Certificate and valid B-BBEE Verification Certificate, for the duration of any contract emanating from this RFP. Should the Respondent be awarded the contract [**the Agreement]** and fail to present CSIR with such renewals as and when they become due, CSIR shall be entitled, in addition to any other rights and remedies that it may have in terms of the eventual Agreement, to terminate such Agreement forthwith without any liability and without prejudice to any claims which CSIR may have for damages against the Respondent.

SIGNED at _____ on this _____ day of _____20_____

SIGNATURE OF WITNESSES AND NAME OF WITNESSES

1 _____

Name _____

2 _____

Name _____

SIGNATURE OF RESPONDENT'S AUTHORISED REPRESENTATIVE:

_____

Name: _____

Designation: _____

Annexure F

Certificate of Acquaintance with RFP, Terms & Conditions & Applicable Documents

The supply, installation and commissioning of two Backup Diesel Generators, an above ground diesel storage tank, and MLV Distribution Boards at the CSIR Pretoria Campus, Buildings 09.

RFP No. 3591/09/10/2023

By signing this certificate the Respondent is deemed to acknowledge that he/she has made himself/herself thoroughly familiar with, and agrees with all the conditions governing this RFP. This includes those terms and conditions contained in any printed form stated to form part hereof, including but not limited to the documents stated below. As such, CSIR will recognise no claim for relief based on an allegation that the Respondent overlooked any such condition or failed properly to take it into account for the purpose of calculating tendered prices or any other purpose:

Should the Bidder find any terms or conditions stipulated in any of the relevant documents quoted in the RFP unacceptable, it should indicate which conditions are unacceptable and offer alternatives by written submission on its company letterhead, attached to its submitted Bid. Any such submission shall be subject to review by CSIR's Legal Counsel who shall determine whether the proposed alternative(s) are acceptable or otherwise, as the case may be. A material deviation from any term or condition may result in disqualification.

Bidders accept that an obligation rests on them to clarify any uncertainties regarding any bid which they intend to respond on, before submitting the bid. The Bidder agrees that he/she will have no claim based on an allegation that any aspect of this RFP was unclear but in respect of which he/she failed to obtain clarity.
The bidder understands that his/her Bid will be disqualified if the Certificate of Acquaintance with RFP documents included in the RFP as a returnable document, is found not to be true and complete in every respect.

SIGNED at _____ on this _____ day of _____ 20_____

SIGNATURE OF WITNESSES AND NAME OF WITNESSES

1 _____

Name _____

2 _____

Name _____

SIGNATURE OF RESPONDENT'S AUTHORISED REPRESENTATIVE:

_____

Name: _____

Designation: _____

Annexure G

Preference Points Award Form in Terms of the Preferential Procurement Regulations 2022

The supply, installation and commissioning of two Backup Diesel Generators, an above ground diesel storage tank, and MLV Distribution Boards at the CSIR Pretoria Campus, Buildings 09.

RFP No. 3591/09/10/2023

This preference form must form part of all bids invited. It contains general information and serves as a claim form for the preference points allocated on the basis of specific goals outlined in point 3 below.

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

---

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to this bid:

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

1.2 Points for this bid shall be awarded for:

(a) Price; and

(b) Preference Points based on specific goals.

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

	POINTS
PRICE	80
Preference Points	20
Total points for Price and Preference Points must not exceed	**100**

1.4 Failure on the part of a bidder to submit proof of preference points together with the bid, will be interpreted to mean that preference points are not claimed.

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

2. POINTS AWARDED FOR PRICE

2.1 The 80/20 preference points systems

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

80/20

$$Ps = 80\left(1 - \frac{Pt - P\min}{P\min}\right)$$

Where

Ps = Points scored for price of bid under consideration

Pt = Price of bid under consideration

Pmin = Price of lowest acceptable bid

3. PREFERENCE POINTS AWARDED

3.1 In terms of Regulation 4 (2) and 4 (2) of the Preferential Procurement Regulations, preference points may be awarded to a bidder for the specific goal specified for the tender in accordance with the table below:

3.2 Specific goals must be determined per tender.

Specific Goals	Preference Points
Reconstruction and Development Programme (RDP) Goals[1] • Exempted Micro Enterprise or Qualifying Small Enterprise	20
Total	**20**

3.3 Total preference points per specific goal to be determined per tender.

3.3.1. Total preference points per specific goal to be awarded as follows:

3.3.1.1. Preferential points for RPD Goals will be awarded as follows:

RDP Goals	% of Preferential points
RDP Goals met	100%
RDP Goals not met	0%

[1] RDP Goals: a. The promotion of South African owned enterprises; b. The promotion of export orientated production to create jobs, c. The promotion of SMMEs; d. The creation of new jobs or the intensification of labour absorption; e. The promotion of enterprises located in a specific province for work to be done or services to be rendered in that province; f. The promotion of enterprises located in a specific region for work to be done or services to be rendered in that region; g. The promotion of enterprises located in a specific municipal area for work to be done or services to be rendered, h. The promotion of enterprises located in rural areas, i. The empowerment of the work force by standardising the level of skill and knowledge of workers; j. The development of human resources, including by assisting in tertiary and other advanced training programmes, in line with key indicators such as percentage of wage bill spent on education and training and improvement of management skills; and k. The upliftment of communities through, but not limited to, housing, transport, schools, infrastructure donations, and charity organizations.

3.4. Joint Ventures, Consortiums and Trusts

A trust, consortium or joint venture[3], will qualify for preference points as a legal entity (Incorporated), provided that the entity submits its valid B-BBEE certificate. Only valid BBBEE certificates issued by SANAS accredited verification agency will be considered for allocation of points.

A trust, consortium or joint venture will qualify for preference points as an unincorporated entity, provided that the entity submits their consolidated B-BBEE scorecard as if they were a group structure and that such a consolidated B-BBEE scorecard is prepared for every separate bid. Only valid consolidated BBBEE certificates issued by SANAS accredited verification agency will be considered for allocation of points.

Bidders must submit concrete proof of the existence of joint ventures and/or consortium arrangements. The CSIR will accept signed agreements as acceptable proof of the existence of a joint venture and/or consortium arrangement. Furthermore, in bids where unincorporated joint venture and/or consortium/sub-contractors are involved, each party must submit a separate TCS PIN and CSD number.

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, who shall be given the power of attorney to bind the other party/parties in respect of matters pertaining to the joint venture and/or consortium arrangement.

3.5. Sub-contracting

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

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

4. BID DECLARATION

Bidders who claim points in respect of specific goals **must** submit the following documents:

Mandatory documents to claim preference points	**Submitted**	
	Yes √	**No** √
Valid copy of BBBEE certificate/ sworn affidavit to claim Black Ownership, Black Woman Ownership, Black Youth Ownership, Disability Ownership and RDP (EMEs		

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

and QSEs) preference points[4]		

DECLARATION WITH REGARD TO COMPANY/FIRM

Name of company/firm:…….

VAT registration number:……

Company registration number:…….

I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the documents submitted to claim preference points based on the specific goals are valid, and I / we acknowledge that:

i) The information furnished is true and correct;

ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 3 of this form;

iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 3, the contractor may be required to furnish further documentary proof to the satisfaction of the CSIR that the awarded are correct;

iv) If any document is obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the CSIR may, in addition to any other remedy it may have –

(a) disqualify the person from the bidding process;

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

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

(d) recommend that the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury 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.

v) If the CSIR is of the view that a bidder submitted false information regarding a specific goal, it must—

(a) inform the bidder accordingly; and

(b) give the bidder an opportunity to make representations within 14 days as to why the tender may not be disqualified or, if the tender has already been awarded to the bidder, the contract should not be terminated in whole or in part.

vi) After considering the representations referred to in subregulation (v)(b), the CSIR may, if it

[4] In case of unincorporated trust, consortium or joint venture, they must submit their consolidated B-BBEE scorecard with submitting their **individual B-BBEE Certificate or Sworn Affidavit**, and each party must submit a separate TCS PIN and CSD number.
In case of sub-contracting both parties must submit copies of their valid BBBEE certificates

concludes that such information is false—

(a) disqualify the bidder or terminate the contract in whole or in part; and

(b) if applicable, claim damages from the bidder.

WITNESSES 1. …….. 2. ……	…… SIGNATURE(S) OF BIDDERS(S) DATE: …….. ADDRESS……..……

Annexure H

Standard Bidding Document (SBD) 4

RFQ No. 3591/09/10/2023

BIDDER'S DISCLOSURE

1. PURPOSE OF THE FORM

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

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

2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest[5] in the enterprise, employed by the state? **YES** ☐ **/NO** ☐

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

Full Name	Identity Number	Name of State institution

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

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

2.2.1 If so, furnish particulars:

……
……

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

2.3.1 If so, furnish particulars:

……
……

3 DECLARATION

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

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

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

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

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

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

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

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

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

exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

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

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

……	..……
Signature	Date
……	……
Position	Name of bidder

Annexure I

DECLARATION BY BIDDER AND BREACH OF LAW FORM

The supply, installation and commissioning of two Backup Diesel Generators, an above ground diesel storage tank, and MLV Distribution Boards at the CSIR Pretoria Campus, Buildings 09.

RFP No. 3591/09/10/2023

NAME OF ENTITY:

_____

We _____ do hereby certify that:

1. CSIR has supplied and we have received appropriate responses to any/all questions [as applicable] which were submitted by ourselves for RFP Clarification purposes;
2. we have received all information we deemed necessary for the completion of this Request for Proposal [**RFP**];
3. we have been provided with sufficient access to the existing CSIR facilities/sites and any and all relevant information relevant to the Services as well as CSIR information and Employees, and has had sufficient time in which to conduct and perform a thorough due diligence of CSIR's operations and business requirements and assets used by CSIR. CSIR will therefore not consider or permit any pre- or post-contract verification or any related adjustment to pricing, service levels or any other provisions/conditions based on any incorrect assumptions made by the Respondent in arriving at his Bid Price.
4. at no stage have we received additional information relating to the subject matter of this RFP from CSIR sources, other than information formally received from the designated CSIR contact(s) as nominated in the RFP documents;
5. we are satisfied, insofar as our entity is concerned, that the processes and procedures adopted by CSIR in issuing this RFP and the requirements requested from Bidders in responding to this RFP have been conducted in a fair and transparent manner; and
6. furthermore, we declare that a family, business and/or social relationship **exists / does not exist** [delete as applicable] between an owner / member / director / partner / shareholder of our entity and an employee or board member of the CSIR Group including any person who may be involved in the evaluation and/or adjudication of this Bid.
7. In addition, we declare that an owner / member / director / partner / shareholder of our entity **is / is not** [delete as applicable] an employee or board member of the CSIR.
8. If such a relationship as indicated in paragraph 7 exists, the Respondent is to complete the following section:

FULL NAME OF OWNER/MEMBER/DIRECTOR/
PARTNER/SHAREHOLDER: ADDRESS:

_____

_____

Indicate nature of relationship with CSIR:

_____

_____

[Failure to furnish complete and accurate information in this regard may lead to the disqualification of a response and may preclude a Respondent from doing future business with CSIR]

9. We declare, to the extent that we are aware or become aware of any relationship between ourselves and CSIR [other than any existing and appropriate business relationship with CSIR] which could unfairly advantage our entity in the forthcoming adjudication process, we shall notify CSIR immediately in writing of such circumstances.
10. We accept that any dispute pertaining to this Bid will be resolved through the Ombudsman process and will be subject to the Terms of Reference of the Ombudsman. The Ombudsman process must first be exhausted before judicial review of a decision is sought.
11. We further accept that CSIR reserves the right to reverse an award of business or decision based on the recommendations of the Ombudsman without having to follow a formal court process to have such award or decision set aside.

BREACH OF LAW

12. We further hereby certify that I/we (the bidding entity and/or any of its directors, members or partners) have/have not been [delete as applicable] found guilty during the preceding 5 [five] years of a serious breach of law, including but not limited to a breach of the Competition Act, 89 of 1998, by a court of law, tribunal or other administrative body. The type of breach that the Respondent is required to disclose excludes relatively minor offences or misdemeanours, e.g. traffic offences. This includes the imposition of an administrative fine or penalty.

Where found guilty of such a serious breach, please disclose:
NATURE OF BREACH:

_____

_____

_____

_____

DATE OF BREACH: _____
Furthermore, I/we acknowledge that CSIR reserves the right to exclude any Respondent from the bidding process, should that person or entity have been found guilty of a serious breach of law, tribunal or regulatory obligation.

SIGNED at _____ on this ____ day of _____ 20___

For and on behalf of _____ duly authorised hereto	AS WITNESS:
Name:	Name:
Position:	Position:
Signature:	Signature:
Date	Registration No of Company/CC
Place	Registration Name of Company/CC

Annexure J
Mutual Non-Disclosure Agreement

RFP No. 3591/09/10/2023

MUTUAL NON-DISCLOSURE AGREEMENT

1. Preamble

The Parties as identified herein are engaged in discussions relating to their potential collaboration in the Field as likewise described therein; are by virtue thereof are required to disclose Confidential Information to one another, and have agreed to do so subject to the terms and conditions as set out in this agreement.

2. Definitions

2.1. The following words and/or phrases, when used in this agreement, shall have the following meanings:

2.1.1. "Confidential Information" shall mean all scientific, technical, business, financial, past, present or future research, development, business activities, products, services and technical knowledge or marketing information , whether inside or outside the Field, which one party (the "Disclosing Party") discloses to the other party (the "Receiving Party") in connection with the discussions, and either has been identified in writing as confidential or is of such a nature (or has been disclosed in such a way) that it should be obvious to the Receiving Party that it constitutes Confidential Information. (Without limiting the generality of the aforegoing, "Confidential Information" shall include any information that falls within the definition of 'Personal Information'

2.1.2. "Disclosing Party" shall mean the Party disclosing Confidential Information under this agreement;

2.1.3. "Disclosing Purpose" shall mean, as pertains to any particular joint opportunity(ies) in the Field, the discussions held or to be held between the Parties regarding their possible collaboration and future working relationship with regards to any such opportunity(ies);

2.1.4. "Effective Date' shall mean the date of the commencement of this agreement which would be a bid award date";

2.1.5. "Notice" shall mean a written document addressed by one Party to the other and either delivered by hand; sent per registered post or telefaxed to the addresses as indicated herein";

2.1.6. "Personal Information" means any information that falls within the definition of 'Personal Information' as defined in the Protection of Personal Information Act, No 4 of 2013 ("POPI");

2.1.7. "Receiving Party" shall mean the Party receiving Confidential Information under this agreement;

"Responsible Party" means a public or private body or any other person which, alone or in conjunction with others, determines the purpose of and means for processing personal information, as defined in POPI.

3. Obligation of Confidentiality

3.1. The Receiving Party undertakes and agrees:

3.1.1. to use the Disclosing Party's Confidential Information only to give effect to the Disclosing Purpose;

3.1.2. to hold in strict confidence and not to publish or disclose to any unauthorised third parties any of the Confidential Information of the Disclosing Party without the prior written consent of the Disclosing Party;

3.1.3. to use the same degree of care (and in any event not less than reasonable care) to safeguard the confidentiality of the Disclosing Party's Confidential Information that it uses to protect its own information of like kind;

3.1.4. to limit any disclosure of such Confidential Information only to those of its employees and professional advisors who have a specific need –to- know to access such Confidential Information and either entered into a written agreement which impose, or are otherwise bound by the same restrictions as those imposed upon it by virtue of this agreement;

3.1.5. not to disclose or reveal to any third party, whomsoever, either the fact that discussions or negotiations are taking, or have taken, place between the Parties; the content of any such discussions, or other facts relating to the Disclosing Purpose;

3.1.6. on termination of this agreement, to act with the Disclosing Party's Confidential Information in accordance with a Notice delivered to it by the Disclosing Party, and if no such Notice is delivered to the Recipient, to destroy the Disclosing Party's Confidential Information in a similar manner to which it would destroy its own Confidential Information.

4. Protection of Personal Information

4.1. The Party(ies) undertake(s) to:-

4.1.1. comply with the provisions of POPI as well as all applicable legislation as amended or substituted from time to time;

4.1.2. treat all Personal Information strictly as defined within the parameters of POPI;

4.1.3. process Personal Information only in accordance with the consent it was obtained for, for the purpose agreed, any lawful and

reasonable written instructions received from the applicable Responsible Party and as permitted by law;

4.1.4. process Personal Information in compliance with the requirements of all applicable laws;

4.1.5. secure the integrity and confidentiality of any Personal Information in its possession or under its control by taking appropriate, reasonable technical and organisational measures to prevent loss, damage, unauthorised destruction, access, use, disclosure or any other unlawful processing of Personal Information;

4.1.6. not transfer any Personal Information to any third party in a foreign country unless such transfer complies with the relevant provisions of POPI regarding transborder information flows; and

4.1.7. not retain any Personal Information for longer than is necessary for achieving the purpose in terms of this Agreement or in fulfilment of any other lawful requirement.

4.2. The Party(ies) undertake(s) to ensure that all reasonable measures are taken to:

4.2.1. identify reasonably foreseeable internal and external risks to the Personal Information in its possession or under its control;

4.2.2. establish and maintain appropriate security safeguards against the identified risks;

4.2.3. regularly verify that the security safeguards are effectively implemented;

4.2.4. ensure that the security safeguards are continually updated in response to new risks or deficiencies in previously implemented safeguards;

4.2.5. provide immediate notification to the Responsible Party if a breach in information security or any other applicable security safeguard occurs; provide immediate notification to the Responsible Party where there are reasonable grounds to believe that the Personal Information has been accessed or acquired by any unauthorised person;

4.2.6. remedy any breach of a security safeguard in the shortest reasonable time and provide the Responsible Party with the details of the breach and, if applicable, the reasonable measures implemented to address the security safeguard breach;

4.2.7. provide immediate notification to the Responsible Party where either party has, or reasonably suspects that, Personal Information has been processed outside of the purpose agreed to or consented to;

4.2.8. provide the Responsible Party, upon request, with all information of any nature whatsoever relating to the processing of the Personal Information for the purpose in terms of this Agreement and any applicable law; and

4.2.9. notify the CSIR, if lawful, of receipt of any request for access to Personal Information, in its possession and relating to the CSIR.

4.3. The CSIR reserves the right to inspect the Personal Information processing operations, as well as the technical and organisational information security measures employed by the contracting Party to ensure compliance with the provisions of clause 4.

4.4. The provisions of clause 4 shall survive the termination of this Agreement, regardless of cause, in perpetuity.

5. Exclusions

5.1. The Receiving Party recognises that this agreement is not intended to restrict use or disclosure of any portion of the Disclosing Party's Confidential Information which:

5.1.1. is as at the Effective Date, or later, made known to the public or otherwise enters the public domain through no default by the Receiving Party of its obligations under this Agreement;

5.1.2. it can show was in its possession prior to the earliest disclosure by the Disclosing Party, as evidenced by written documents in its files;

5.1.3. is rightfully received by it from a third party having no obligation of confidentiality to the Disclosing Party;

5.1.4. is independently developed by the Receiving Party by a person(s) who did not have access to the Confidential Information of the Disclosing Party;

5.1.5. is disclosed by the Receiving Party after receipt of written permission from the Disclosing Party; or

5.1.6. it is requested or required by subpoena, court order, or similar process to disclose, provided that, in such an event, it will provide the Disclosing Party with prompt written notice of such request(s) so that the latter may seek an appropriate protective order and/or waive the Receiving Party's compliance with the provisions of this agreement.

6. Ownership and Provision of Information

6.1. The Disclosing Party shall retain ownership of all its Confidential Information as disclosed hereunder.

6.2. Nothing contained in this agreement or in any disclosures made hereunder shall create or imply, or be construed as to grant to the Receiving Party any license or other rights in or to the Confidential Information and/or any intellectual property rights attached thereto, or act as a waiver of any rights that the Disclosing Party may have to prevent infringement or misappropriation of any patents, patent applications, trademarks, copyright, trade secrets, know-how or other intellectual property

rights owned or controlled by the Disclosing Party as at the Effective Date.

6.3. The Disclosing Party provides the Confidential Information "as is" and accordingly no disclosure thereof by it hereunder shall constitute any representation, warranty, assurance, guarantee or inducement by such Disclosing Party with respect to infringement of patents or other rights of third parties, nor is any warranty or representation as to the accuracy, completeness, or technical or scientific quality of any of the Disclosing Party's Confidential Information provided hereunder. (For the avoidance of doubt it is stated expressly that the Disclosing Party neither makes, nor have made, any representation or warranty as to the merchantability or fitness for a particular purpose of any Confidential Information disclosed hereunder).

7. Term of Obligation

7.1. The Parties' obligations concerning non-disclosure of Confidential Information contained in the above clauses shall commence on the Effective Date and shall continue for five (5) years from the date of each disclosure, unless otherwise agreed between the parties in writing, where after such obligations shall forthwith terminate.

8. No Violation

8.1. Each party represents that its compliance with the provisions of this agreement will not violate any duty which such party may have towards any third party, including obligations concerning the provision of services to others, confidentiality of information and assignment of inventions, ideas, patents or copyright.

9. Breach

9.1. It is acknowledged that the breach of this agreement by the Receiving Party would cause the Disclosing Party irreparable injury not compensable in monetary damages alone. Accordingly, in the event of a breach, or a threat of a breach, the Disclosing Party, in addition to its other remedies, is entitled to a restraining order, preliminary injunction or similar relief so as to specifically enforce the terms of this agreement or prevent, cure or reduce the adverse effects of the breach.

10. DOMICILIUM CITANDI ET EXECUTANDI

10.1. The Parties hereto respectively choose as their *domicilium citandi et executandi* for all purposes of, and in connection with this agreement, the physical addresses and contact details stated herein.

11. Notices

11.1 Any Notice to be given hereunder shall be given in writing and may be given either personally or may be sent by post or facsimile and addressed to the relevant party at its *domicilium citandi et executandi* address as chosen herein. Any notice given by post shall be deemed to have been served on the expiry of 7 (seven) working days after same is posted by recorded delivery post or air mail. Any notice delivered personally or sent by facsimile shall be deemed to have been served at the time of delivery or sending.

12. Governing Law and Jurisdiction

12.1. This agreement will be governed and construed by the laws of the Republic of South Africa and the Parties hereby submit to the exclusive jurisdiction of the South African courts to hear any dispute arising therefrom which the Parties are unable to settle amicably.

13. General

13.1. This agreement comprises the entire agreement between the parties concerning the subject matter and supersedes all prior oral and written agreements between them.

13.2. No waiver, alteration or cancellation of any of the provisions of the Agreement shall be binding unless made in writing and signed by the party to be bound.

13.3. The parties hereby warrant that the officials signing this agreement have the power to do so on behalf of the parties.

13.4. No public announcement, such as a media release, or disclosure beyond those disclosures authorised for Confidential Information hereunder may be made by either party concerning this agreement without the prior written approval of the other party.

13.5. Neither party is, by virtue of this agreement, authorised to use the name, logo(s) or trademarks of the other in connection with any advertising, publicity, marketing or promotional materials or activities, or for any other purpose whatsoever, without the prior written consent of the other party. For purposes of this clause, it is also recognised that, under the provisions of section 15 (1) of the Merchandise Marks Act, Act No 17 of 1941 of the Republic of South Africa, the use of the abbreviation of the name of the Council for Scientific and Industrial Research, "WNNR" and CSIR , is prohibited in connection with any trade, business, profession or occupation or in connection with a trade mark, mark or trade description applied to goods, other than with the consent of the CSIR.

13.6. Both Parties shall remain free to use, in the normal course of its business, its general

knowledge, skills and experience incurred before, during or after the discussions envisaged hereunder. (To this end, it is also recorded that nothing in this Agreement shall be construed as constituting an exclusive arrangement between the parties and both Parties shall remain free to explore market opportunities in the Field, unless otherwise agreed to in writing in a subsequent agreement.)

ANNEXURE J: MUTUAL NDA

14. Parties to the NDA

THE CSIR, a statutory council, duly established under Act 46 of 1988,

and

The Bidder (Name)……

Company registration number:…… ……, with limited liability duly incorporated under the applicable laws of the Republic of South Africa herein represented by …… …… …… in his/her capacity as …… …… …… …… and he/she being duly authorised thereto.

15. Contact Details for Purposes of Clause 10:

15.1. The CSIR

Physical Address:
Meiring Naude Road
Brummeria
Pretoria
0002

Postal Address:
PO BOX 395
Pretoria
0001

Email: Tender@csir.co.za

The Bidder (Name)…… …… ……

Physical Address: …… …… ……

Postal Address: …… …… ……

Email: …… …… ……

16. Signature (Bidder): ……

SIGNED ON THIS THE……DAY OF……..AT……

IN THE PRESENCE OF THE FOLLOWING WITNESSES:

1. ……
2. ……

Annexure K

Technical Drawings

CIVILS

THESE SPECIFICATIONS ARE NOT INTENDED TO REPLACE NHBRC OR SANS SPECIFICATIONS BUT SHOULD BE CONSIDERED TO BE SUPPLEMENTARY: THE CONTRACTOR SHOULD ALSO CONVEY THE FOLLOWING IMPORTANT INFORMATION TO THE CLIENT/END USER:

CLIENTS SHOULD BE MADE AWARE OF THE DANGERS TO FOUNDATIONS CAUSED BY PONDED WATER, TREES AND SHRUBS WITHIN 1.5M OR THE MATURE HEIGHT FROM THE FOUNDATIONS, LEAKING SERVICES, GARDENS CLOSE TO FOUNDATIONS AND UNSTABILIZED SERVICE TRENCHES WITHIN 1.5m OF FOUNDATIONS.

NOTES :

1. GENERAL

1.1. ALL LEVELS AND DIMENSIONS TO BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF WORK.
1.2. DRAWINGS TO BE READ IN CONJUNCTION WITH THE ARCHITECTS DRAWINGS (IF APPLICABLE)
1.3. ARTICULATION JOINT POSITIONS TO BE POINTED OUT BY ENGINEER
1.4. SITE DRAINAGE AND PLUMBING/SERVICE PRECAUTIONS.
1.5. ALL FOUNDATION WALLS HIGHER THAN 800mm TO BE 330mm THICK.
1.6. BRICKFORCE IN EVERY BRICKCOURSE IN ALL FOUNDATION WALLS BELOW FLOOR SLAB.
1.7. BRICKFORCE IN EVERY COURSE FOR ALL BRICKWORK UNDER SLABS OR BEAMS.
1.8. BRICKFORCE FIRST TWO LAYERS THEN EVERY 5 LAYERS AND EVERY LAYER ABOVE OPENINGS UP TO ROOF LEVEL.
1.9. CONCRETE COVER:
BEAMS: 30mm(EXCLUDES RAFT BEAMS)
FOOTINGS/FOUNDATIONS:50mm (INCLUDES RAFT BEAMS)
FLOOR SLABS: 50mm
COLUMN: 30mm
1.10. CONCRETE STRENGTH AT 28 DAYS:
BEAMS: 30/19, 30MPa
FOOTINGS/FOUNDATIONS: 25/19, 25MPa.
COLUMN: 30/19, 30MPa.
SLABS: 30/19, 30MPa.
1.11. ALL MATERIAL AND WORKMANSHIP TO COMPLY STRICTLY TO LATEST SANS/SABS STANDARDS. ALL MATERIAL AND AGGREGATES TO BEAR SABS STAMP OF APPROVAL
1.12. ALL WORK MUST COMPLY WITH THE NATIONAL BUILDING REGULATIONS (SANS 10400) AND LOCAL AUTHORITY BY-LAWS AND SABS 1200-STANDARD SPECIFICATIONS FOR CIVIL ENGINEERING CONSTRUCTION.

2. FOUNDATIONS

2.1. EXCAVATE FOUNDATION TRENCHES TO A MINIMUM OF 750mm DEEP
2.2. EXCAVATIONS TO BE FREE OF RUBBLE, ORGANIC AND INORGANIC MATERIAL.
2.3. PROPERLY WET AND COMPACT EXCAVATIONS TO CREATE A SOLID BASE.
2.4. A FILL OF G5 TO BE USED IN LAYERS NLE 150mm. COMPACTION AT OPTIMUM MOISTURE CONTENT TO 93% Mod AASHTO DENSITY.
2.5. REINFORCEMENT TO BE KEPT FREE OF RUST, OIL AND MUD.
2.6. PROPER REINFORCEMENT SPACERS TO BE PROVIDED BY CONTRACTOR
2.7. REINFORCING TO BE OVERLAPPED A MINIMUM OF 50 TIMES THE DIAMETER OF THE REINFORCING, I.E. Y12's TO OVERLAP 600mm.
2.8. ALL STIRRUPS R10 @ 500C/C. UNLESS OTHERWISE INDICATED.
2.9. ALL LEVELS AND DIMENSIONS TO BE CHECKED AND VERIFIED BY CONTRACTOR ON SITE BEFORE ORDERING STEEL.
2.10. INSPECTION REQUIRED, 48 HOURS NOTICE BEFORE CASTING CONCRETE.
2.11. EXCAVATIONS TO BE PRE-WETTED BEFORE CASTING CONCRETE.
2.12. FOR SLOPED SITE CONDITIONS: STEPPED FOUNDATION ONLY TO BE CONSTRUCTED ON ENGINEERS APPROVAL

3. PAVING APRON

3.1. A 1000mm IMPERMEABLE PAVEMENT APRON TO BE CONSTRUCTED AROUND ENTIRE PERIMETER OF BUILDING BELOW THE DPC LAYER (THIS INCLUDES UNDER WOOD DECKS AND PATIOS)

4. CONCRETE FINISHES

4.1. CONCRETE FINISHES WILL APPLY AS FOLLOW:
WOOD FLOAT FINISH TO ALL SURFACES COVERED BY OTHER ELEMENTS
STEEL FLOAT FINISH TO ALL EXPOSED SURFACES
4.2. CHAMFERING OF ALL EXPOSED CONCRETE CORNERS WILL BE 25mm x 25mm

5. EXCAVATIONS

5.1. EXCAVATIONS WILL BE NEAT AND CLEAR OF RUBBLE, ORGANIC AND INORGANIC MATERIAL AND EXCESSIVE WATER WILL BE PUMPED /REMOVED OR ALLOWED TO SUBSIDE BEFORE BACKFILLING AND COMPACTION COMMENCES.
5.2. THE FOUNDING LAYER OF BACKFILLED EXCAVATIONS WILL BE IN-SITU MATERIAL RIPPED AND COMPACTED TO AT LEAST 85% MOD AASHTO.

6. CONCRETE

6.1. WHERE READY MIX CONCRETE IS ORDERED, A COPY OF THE DELIVERY NOTE FOR EACH CONCRETE DELIVERY SHALL BE MADE AVAILABLE FOR THE POST CONCRETE OR FINAL INSPECTION.
6.2. THE DELIVERY NOTE WILL CONFIRM THAT THE READY MIX CONCRETE IS IN ACCORDANCE WITH SANS 878:2012
6.3. NO STRUCTURAL CONCRETE MIXED ON SITE WILL BE ACCEPTABLE WITHOUT THE APPROVAL OF THE ENGINEER. SHOULD THE CONTRACTOR HAVE THE NECESSARY EQUIPMENT TO ADEQUATELY PREPARE STRUCTURAL CONCRETE ON SITE AND PREFER TO DO SO, ALL DOCUMENTATION WITH THE EQUIPMENT RELEVANT TO THE PREPARATION WILL BE AVAILABLE FOR THE ENGINEER'S REVIEW AND A TRIAL BATCH WILL BE PREPARED AND TESTED IN A THIRD PARTY LABORATORY TO PROVE THAT THE NECESSARY CONCRETE STRENGTH IS OBTAINED.
6.4. BLINDING CONCRETE OF MINIMUM 15MPa MAY BE PREPARED ON SITE WITH THE APPROVAL OF THE ENGINEER. THE CONTRACTOR WILL NEED TO PREPARE A CONCRETE MIX DESIGN FOR THE ENGINEER'S REVIEW.
6.5. A BLINDING LAYER BELOW ANY FOUNDATION DOES NOT CONSTITUTE THE COVER AS SPECIFIED IN NOTE 1.9 OF THE GENERAL NOTES
6.6. CONCRETE TO BE COVERED WITH PLASTIC SHEETS AND PROPER CURING METHODS IS REQUIRED. TIE DOWN PLASTIC TO PREVENT WIND TUNNELS AND KEEP CONCRETE WET FOR 7 DAYS.
6.7. ANY OTHER CURING METHOD NEEDS TO BE APPROVED BY THE ENGINEER PRIOR TO POURING OF CONCRETE
6.8. SAMPLES FOR TESTS WILL BE TAKEN IN ACCORDANCE WITH SANS 861 – AT LEAST ONE SET OF SAMPLES FROM EACH DAY'S CASTING AND FROM AT LEAST EVERY 50m³.
6.9. CEMENT WILL CONFORM TO SANS 50197:2013
6.10. PORTLAND EXTENDERS MAY BE USED WITH PRIOR APPROVAL FROM THE ENGINEER AND WILL CONFORM TO SANS 1491-1:2005 AND SANS 1491-2:2005
6.11. POURING OF CONCRETE STRUCTURES WILL BE DONE WITH CARE IN ORDER TO AVOID VOIDS AND HONEYCOMBING. CONCRETE SHOULD BE PLACED IN 300mm LAYERS AND PROPERLY VIBRATED BEFORE MORE CONCRETE IS ADDED ON THE SAME LOCATION. THE PLACING AND VIBRATION OF THE CONCRETE SHOULD TAKE PLACE TIMEOUSLY TO AVOID THE FORMATION OF COLD JOINT. ALTERNATIVE METHODS OF PLACING CONCRETE FOR STRUCTURES HIGHER THAN 1.5m NEEDS TO BE APPROVED BY THE ENGINEER PRIOR RO POURING CONCRETE

7. REINFORCING

7.1. REINFORCING STEEL BARS WILL COMPLY WITH SANS 920
7.2. REINFORCING WELDED STEEL FABRIC WILL COMPLY WITH SANS 1024
7.3. REINFORCING STEEL WILL NOT BE WELDED WITHOUT THE APPROVAL OF THE ENGINEER. SUCH WELDING, IF APPROVED, WILL BE DONE BY A PERSON QUALIFIED TO DO THE WELDING AND APPROVED WELDING MATERIALS AND PROCEDURES SHALL BE USED.
7.4. PROPER PRECAUTION WILL BE TAKEN TO PREVENT REINFORCING FROM CONING INTO CONTACT WITH SHUTTER OIL.THE FOLLOWING IS A PRE-APPROVED METHOD:
7.5. THE CONTRACTOR WILL, AFTER FIXING REINFORCING CAGES, WRAP THE REINFORCED CAGE IN PLASTIC SHEET, DPC MATERIAL OR SIMILAR BEFORE FORMWORK IS TREATED WITH OIL.THE PLASTIC SHEET WILL THEN BE REMOVED SO THAT NO PLASTIC FRAGMENTS ARE LEFT AND THE REINFORCING DOE NOT COME INTO CONTACT WITH THE SHUTTER OIL

8. OPENINGS, POCKETS, OTHER TRADES AND SERVICES

8.1. WHERE APPLICABLE, SERVICES THAT NEED TO BE ROUTED THROUGH REINFORCED CONCRETE STRUCTURES WILL BE ROUTED AFTER THE REINFORCING IS PLACED AND PRIOR TO THE PLACEMENT OF CONCRETE.
8.2. CONCRETE COVER TO THE REINFORCING SHALL AS FAR AS PRACTICABLE COMPLY WITH NOTE 1.9 OF THE GENERAL NOTES
8.3. SERVICES THAT NEED TO BE ROUTED THROUGH THE RAFT FOUNDATION NEED TO COMPLY WITH THE FOLLOWING:
8.4. SERVICES OF 50mm⌀ OR LESS CAN BE ROUTED INSIDE THE RAFT SLAB WITH A MINIMUM SPACING OF 75mm BETWEEN SERVICES (TYPICALLY CONDUITS USED FOR ELECTRICAL SERVICES)
8.5. SERVICES GREATER THAN 50mm⌀ NEED TO BE EXCAVATED IN TRENCHES BEFORE DPC IS PLACED SO THAT THE SERVICE IS COVERED WITH AT LEAST 50mm OF SOIL BELOW THE BOTTOM OF THE SLAB

9. SUBSOIL DRAINAGE

9.1. SUBSOIL DRAINAGE SHOULD BE INSTALLED TO MANUFACTURER'S SPECIFICATIONS
9.2. EXCAVATIONS WHERE SUBSOIL DRAINAGE HAS ALREADY BEEN INSTALLED SHOULD BE CAREFULLY SUPERVISED AND DONE WITH CAUTION IN ORDER TO PREVENT DAMAGE TO THE SUBSOIL DRAINAGE

10. MISCELLANEOUS
10.1. ALL GALVANIZED ITEM TO BE HOT-DIPPED GALVANIZED MUST BE SUPPLIED WITH MANUFACTURES CERTIFICATE.

11. WELDING

11.1. THE CONTRACTOR SHOULD PREPARE A FULLY ITEMISED QUALITY PLAN (QCP) FOR EVERY COMPONENT OR GROUP OF SIMILAR COMPONENTS THAT MAKE UP THE PROJECT
11.2. REFERENCE TO ALL SOURCE DOCUMENTATION SUCH AS DESIGN, DRAWINGS, CODE SPECIFICATION ETC. SHOULD BE NOTED WHERE APPLICABLE.
11.3. CONFIRMATION THAT CORRECT GRADE OF STEEL IS USED SHOULD BE SIGNED OFF ON THE QCP WITH SUPPORTING DOCUMENTATION IN THE DATA FILE
11.4. DIMENSIONAL CHECKING OF COMPONENTS TO DETAIL DRAWINGS AND WELD SIZES ETC. SHOULD BE SIGNED OFF ON THE QCP
11.5. WITNESS AND HOLD POINTS FOR THE ENGINEER SHOULD BE ADHERED TO UNLESS OTHERWISE AGREED IN LIEU OF PROPER DOCUMENTATION
11.6. A WELD PROCEDURE SPECIFICATION (WPS) FOR EACH TYPE AND POSITION OF WELDING WILL COVER THE FOLLOWING, AND EVERY OTHER ASPECT THAT COULD AFFECT THE QUALITY OF THE WELD:
11.6.1. WELD (EDGE) PREPARATIONS
11.6.2. PREHEATING REQUIREMENTS
11.6.3. WELDING PROCESS
11.6.4. CONSUMABLES
11.6.5. CURRENT AND SPEED SETTINGS
11.6.6. GAS FLOWS
11.7. WELDER QUALIFICATION PAPERS FOR EACH OF THE PROCEDURES – THIS ALSO APPLIES TO TACK WELDING
11.8. VISUAL INSPECTION REPORTS WILL COVER THE REQUIREMENTS OF AWS D1.1 TABLE 6.1.
11.9. WELD PREPARATIONS AND SET UP SHOULD BE SIGNED OFF BY A COMPETENT PERSON RESPONSIBLE FOR IN THE CAPACITY OF THE CONTRACTOR BEFORE WELDING COMMENCES
11.10. ALL WELDING WORKS WILL ONLY BE ACCEPTED ONCE ALL NDT REPORTS HAVE BEEN REVIEWED AND ACCEPTED BY THE ENGINEER
11.11. REPAIR PROCEDURES FOR WORK NOT ACCEPTED WILL ADHERE TO ALL REQUIREMENTS AS A STANDALONE COMPONENT OF THE PROJECT.

12. CORROSION PROTECTION
12.1. A CORROSION PROTECTION OR COATING SYSTEM WILL BE SUBMITTED FOR THE ENGINEER'S APPROVAL PRIOR TO FABRICATION.
12.2. THE PROPOSAL OF A CORROSION PROTECTION OR COATING SYSTEM WILL BE ACCOMPANIED BY A QCP TEMPLATE FOR THE SUBJECT SYSTEM WITH GUARANTEE INFORMATION, QUALITY CONTROL PROCEDURES, AND SPECIFICATION AND NDT PROCEDURES.

13. TOLERANCES FOR STRUCTURAL STEEL CONNECTIONS IS AS FOLLOW

13.1. PLAN LOCATION : 10MM
13.2. LEVEL : 10MM
13.3. VERTICALITY : 5MM/10M

14. BOLTING
14.1. BOLTING AND FABRICATION AND ERECTION OF STRUCTURES WITH BOLTED CONNECTIONS SHALL BE DONE IN ACCORDANCE WITH SANS 2001-CS
14.2. HIGH STRENGTH FRICTION GRIP (HSFG) CONNECTIONS SHALL COMPLY WITH THE
14.3. REQUIREMENTS OF SANS 2001-CS1 AND SANS 10094
14.4. CLASS 4.8 BOLTS FOR SIZES M12 AND M16
14.5. CLASS 8.8 BOLTS FOR SIZES M20 AND LARGER
14.6. APPROPRIATELY SIZED WASHERS WILL BE USED ON ALL ROTATING PARTS ESPECIALLY WHERE THE STEEL HAS ALREADY RECEIVED ANY FORM OF CORROSION PROTECTION
14.7. HEAVY DUTY WASHERS (OF AT LEAST 6MM) OR PLATE MUST BE USED WHERE BOLTS PASS THROUGH SLOTTED OR OVERSIZED HOLES.
14.8. THE DRILLED HOLE DIAMETER FOR HOLDING DOWN BOLTS SHOULD EXCEED THE BOLT DIAMETER BY 6MM AND ON OTHER BOLTED CONNECTION BY 2MM FOR BOLTS UP TO M24 AND 3MM FOR BOLTS LARGER THAN M24
14.9. TORQUE AND NUT ROTATION FROM SNUG-TIGHT CONDITION :

TORQUE AND NUT ROTATION

DISPOSITION OF OUTER FACES OF BOLTED PARTS	BOLT LENGTH	TURN
BOTH FACES NORMAL TO BOLT AXIS OR ONE FACE NORMAL TO AXIS AND OTHER FACE SLOPED 1:20 MAX (BEVEL WASHER NOT USED)	UP TO AND INCLUDING 4d	⅓ (120°)
	OVER 4d BUT NOT EXCEEDING 8d OR 200mm	½ (180°)
	EXCEEDING 8d OR 200mm	⅔ (240°)
BOTH FACES SLOPED 1:20 MAX FROM NORMAL TO BOLT AXIS (BEVEL WASHERS NOT USED)	ALL LENGTHS	¾ (270°)

15. TIMBER
15.1. ALL TIMBER MEMBERS TO BE SA PINE GRADE 5 OR SIMILAR APPROVED BY THE ENGINEER AND WILL COMPLY WITH SANS 1783-2, 1490, AND 10149 AND WILL BEAR THE FULL STANDARDIZATION MARK.
15.2. TIMBER ERECTION WILL BE IN ACCORDANCE WITH SANS 10082
15.3. TIMBER MUST BE ORDERED IN THE DIMENSIONS AS SPECIFIED AND SAWING ON SITE SHOULD BE LIMITED.
15.4. TIMBER SAWN ON SITE WILL BE ADEQUATELY TREATED IN ACCORDANCE WITH SANS 10005 "TREATMENT OF TIMBER" USING EITHER CCA OR BORON.
15.5. ALL TIMBER USED WILL HAVE PROOF OF TREATMENT AGAINST BIOLOGICAL ATTACK
15.6. TIMBER STORED ON SITE SHOULD BE STACKED ON LEVEL GROUND ON BEARS AND ADEQUATELY PROTECTED AGAINST THE WEATHER. AIR MUST BE ALLOWED TO CIRCULATE THROUGH THE TIMBER STACKS AND STRAPPING AROUND BUNDLES OF BATTENS SHOULD NOT BEW REMOVED UNTIL THE BATTENS ARE TO BE FIXED

16. WET SERVICES (WATER)
16.1. APPLICATION – OD<75mm
16.2. PIPE TYPE AND MATERIAL CLASSIFICATION – HIGH DESITY POLYETHYLENE (HDPE); PE 100
16.3. MINIMUM PRESSURE RATING OR RING STIFFNESS – PN 12.5(a,b,c)
16.4. APPLICABLE STANDARDS – SANS 4427
16.5. PIPE JOINT REQUIREMENTS – ELECTRO FUSION OR BUTT FUSION(d). MECHANICAL JOINTING DEVICES (INCLUDING FLANGES AND COMPRESSION FITTINGS) SHALL BE USED ONLY IN MANHOLES
16.6. ADDITIONAL REQUIREMENTS AND COMMENTS – NUMBER OF JOINTS SHALL KEPT TO A MINUMUM. PIPES SUPPLIED IN 100m ROLLS

NOTES:

a. THE MINIMUM PRESSURE SHALL BE AS STATED OR IN ACCORDANCE WITH DESIGN REQUIREMENTS, WHICHEVER IS HIGHER. THE DESIGN OF THE PIPE SHALL MAKE ALLOWANCE FOR THE DESIGN PRESSURE AND POTENTIAL LOSS OF SUPPORT AS REQUIRED IN 6.2.1.1.
b. ON SITE DESIGNATED AS D3 DOLOMITE LAND, THE NOMINAL PRESSURE RATING SHALL BE ONE PIPE DESIGNATION OR CLASS HIGHER THAN THAT WHICH COMPLIES WITH THE ABOVE REQUIREMENT (SEE 4.4(c))
c. ON RESIDENTIAL LAND, THE PRESSURE RATING SHALL NOT BE LOWER THAN PN 16 AS APPLICABLE PIPE SIZE ARE PRONE TO DAMAGE BY GARDENING ACTIVITIES.
d. SMALL DIAMETER HDPE PIPES PREFERABLY JOINTED BY ELECTRO FUSION INSTEAD OF BUTT FUSION

17. WET SERVICES (SEWER)
17.1. APPLICATION – ALL DIAMETERS
17.2. PIPE TYPE AND MATERIAL CLASSIFICATION – UNPLASTICIZED POLY (VINYL CHLORIDE) (PVC-U)
17.3. MINIMUM PRESSURE RATING OR RING STIFFNESS – CLASS 34(a,b)
17.4. APPLICABLE STANDARDS – SANS 791
17.5. PIPE JOINT REQUIREMENTS – MECHANICAL DEVICES CONSISTING OF SEALING RINGS OR GROOVES (OR BOTH) AND CLAMPS. USE STAINLESS STEEL ONLY FOR METAL FITTINGS
17.6. ADDITIONAL REQUIREMENTS AND COMMENTS – PIPES SUPPLIED IN 6m OR 9m LENGTHS

NOTES:

a. THE MINIMUM PRESSURE SHALL BE AS STATED OR IN ACCORDANCE WITH DESIGN REQUIREMENTS, WHICHEVER IS HIGHER. THE DESIGN OF THE PIPE SHALL MAKE ALLOWANCE FOR THE DESIGN PRESSURE AND POTENTIAL LOSS OF SUPPORT AS REQUIRED
b. ON SITES DESIGNATED AS D3 DOLOMITE LAND, THE NORMINAL PRESSURE RATING SHALL BE ONE PIPE DESIGNATION OR CLASS HIGHER THAN THAT WHICH COMPLIES WITH THE ABOVE REQUIREMENT

NOTES / NOTAS

REFERENCE / VERWYSINGS

ALL LEVELS AND DIMENSIONS SHOULD BE CHECKED AND VERIFIED ON SITE PRIOR TO CONSTRUCTION

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DESIGN / ONTWERP	W FOURIE	TRACED / TEKENAAR
DRAWN / GETEKEN	R.C BEUKES	CHECKED / NAGESIEN

PROJECT / PROJEK

CSIR BUILDING 9
NEW BACKUP GENERATOR

DRAWING TITLE / TEKENINGSTITEL

GENERAL NOTES

DATE: JULY 2023
DATUM:
SCALE: N.T.S
SKAAL:

No.	DATE DATUM	INITIAL VOORL.	DESCRIPTION REDIGERING
00	06/07/23	R.B	FOR CONSTRUCTION

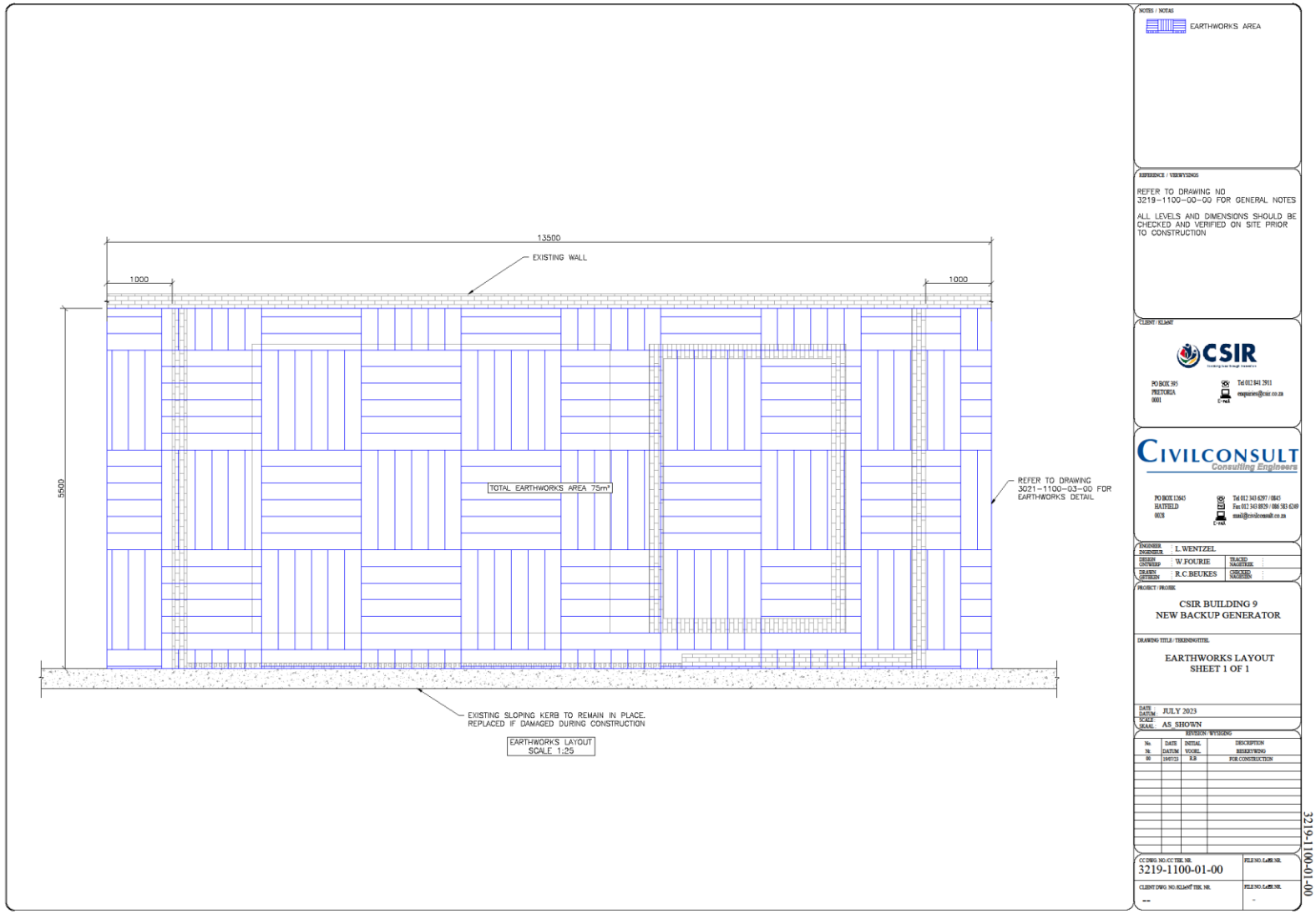
CC DWG. NO./CC TEK. NR.
3219-1100-00-00

FILE NO./LêER NR.

CLIENT DWG. NO./KLIËNT TEK. NR.
--

FILE NO./LêER NR.
-

3219-1100-00-00


13500
1000
EXISTING WALL
1000
5500
TOTAL EARTHWORKS AREA 75m²
REFER TO DRAWING
3021-1100-03-00 FOR
EARTHWORKS DETAIL
EXISTING SLOPING KERB TO REMAIN IN PLACE.
REPLACED IF DAMAGED DURING CONSTRUCTION
EARTHWORKS LAYOUT
SCALE 1:25
NOTES / NOTAS
EARTHWORKS AREA
REFERENCE / VERWYSINGS
REFER TO DRAWING NO
3219-1100-00-00 FOR GENERAL NOTES
ALL LEVELS AND DIMENSIONS SHOULD BE CHECKED AND VERIFIED ON SITE PRIOR TO CONSTRUCTION
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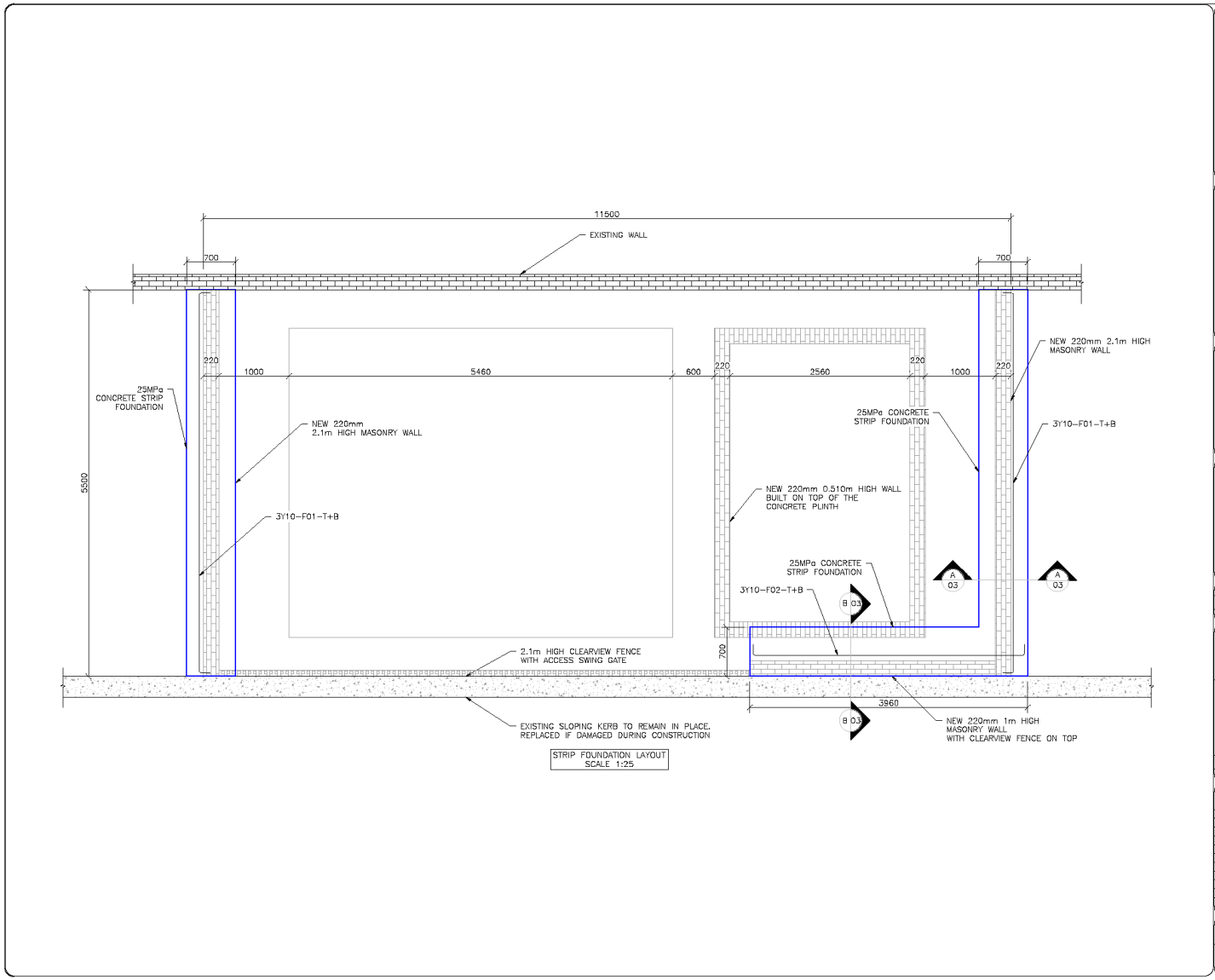
TRACED / NAGETEKE :
CLIENT / KLIËNT : R.C.BEUKES
CHECKED / NAGESIEN :
PROJECT / PROJEK
CSIR BUILDING 9
NEW BACKUP GENERATOR
DRAWING TITLE / TEKENINGSTITEL
EARTHWORKS LAYOUT
SHEET 1 OF 1
DATE / DATUM : JULY 2023
SCALE / SKAAL : AS SHOWN
REVISION / WYSIGING
No. / Nr. | DATE / DATUM | INITIAL / VOORL. | DESCRIPTION / BESKRYWING
00 | 24/07/23 | R.B | FOR CONSTRUCTION
CC DWG. NO. / CC TEK. NR. 3219-1100-01-00
FILE NO. / LêER NR.
CLIENT DWG. NO. / KLIËNT TEK. NR. --
FILE NO. / LêER NR. -
3219-1100-01-00



NOTES / NOTAS

STRIP FOUNDATION OUTLINE
700mm x 300mm

VOLUME OF 25MPa CONCRETE
= 10m³

REFERENCE / VERWYSINGS

REFER TO DRAWING NO
3219-1100-00-00 FOR GENERAL NOTES

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PROJECT / PROJEK

CSIR BUILDING 9
NEW BACKUP GENERATOR

DRAWING TITLE / TEKENINGSTITEL

STRIP FOUNDATION
REINFORCING LAYOUT
SHEET 1 OF 1

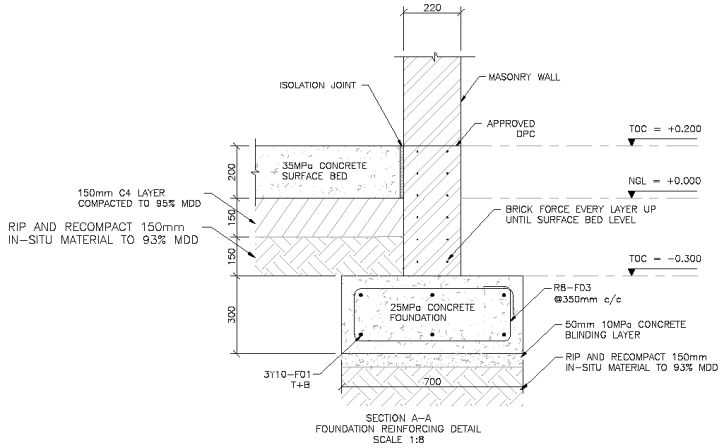
DATE / DATUM:	JULY 2023
SCALE / SKAAL:	AS_SHOWN

REVISION / WYSIGING

No. / Nr.	DATE / DATUM	INITIAL / VOORL.	DESCRIPTION / BESKRYWING
00	19/07/23	R.B	FOR CONSTRUCTION

CC DWG. NO. / CC TEK. NR.: 3219-1100-02-00
FILE NO. / LêER NR.:
CLIENT DWG. NO. / KLIËNT TEK. NR.: --
FILE NO. / LêER NR.: -

3219-1100-02-00



SECTION A–A
FOUNDATION REINFORCING DETAIL
SCALE 1:8

MEMBER	No OF	BARS PER MEMB	DIA.	LENGTH	TOTAL NUM–BER	MARK	S	C	BENDING A	B	C	D	E/r
STRIP FOUNDATION	1	12 6 45	Y10 Y10 R8	5650 4100 1750	12 6 45	F01 F02 F03	38 38 60		150 150 200	5400 3860 600	(150) (150)		

	8	10	12	16	20	25	32	40	TOT
R	31								31
Y		57							57
TOT	31	57							88

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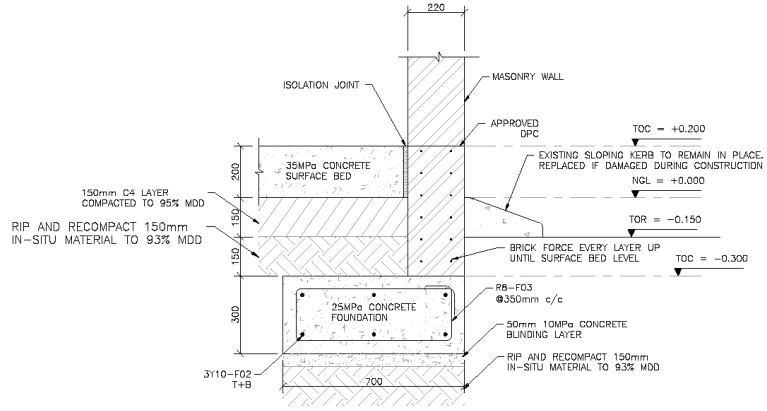
Date	2023–07–19
Det. by	R.C.BEUKES
Ref Dwg	1100–02/03
Job No	3219
Revision	00
Schedule No	1100–A



SECTION B–B
FOUNDATION REINFORCING DETAIL
SCALE 1:8

NOTES / NOTAS

REFERENCE / VERWYSINGS

REFER TO DRAWING NO 3219–1100–00–00 FOR GENERAL NOTES

ALL LEVELS AND DIMENSIONS SHOULD BE CHECKED AND VERIFIED ON SITE PRIOR TO CONSTRUCTION

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DESIGN / ONTWERP	: W.FOURIE	TRACED / NAGETEEK
DRAWN / GETEEKEN	: R.C.BEUKES	CHECKED / NAGEGAAN

PROJECT / PROJEK

CSIR BUILDING 9
NEW BACKUP GENERATOR

DRAWING TITLE / TEKENINGTITEL

STRIP FOUNDATION REINFORCING DETAIL AND BENDING SCHEDULE SHEET 1 OF 1

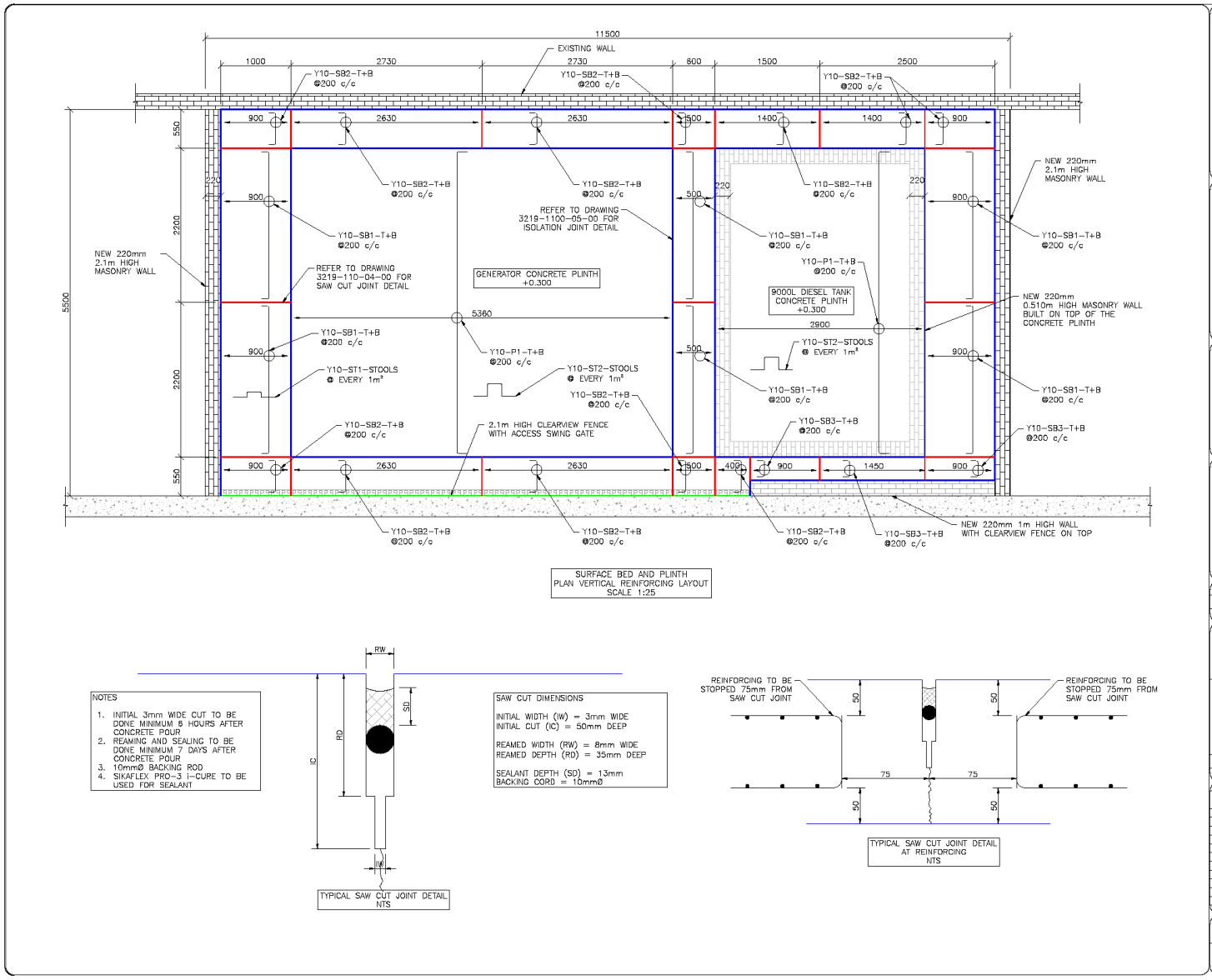
DATE :	JULY 2023
DATUM :	
SCALE :	AS SHOWN
SKAAL :	

REVISION / WYSIGING

No. Nr.	DATE DATUM	INITIAL VOORL.	DESCRIPTION BESKRYWING
00	240725	R.B	FOR CONSTRUCTION

CC DWG. NO./CC TEK. NR.: 3219-1100-03-00
FILE NO./LêER NR.:
CLIENT DWG. NO./KLIËNT TEK. NR.: --
FILE NO./LêER NR.: -

3219-1100-03-00



SURFACE BED AND PLINTH
PLAN VERTICAL REINFORCING LAYOUT
SCALE 1:25

NOTES

1. INITIAL 3mm WIDE CUT TO BE DONE MINIMUM 6 HOURS AFTER CONCRETE POUR
2. REAMING AND SEALING TO BE DONE MINIMUM 7 DAYS AFTER CONCRETE POUR
3. 10mmØ BACKING ROD
4. SIKAFLEX PRO-3 1-CURE TO BE USED FOR SEALANT

TYPICAL SAW CUT JOINT DETAIL
NTS

SAW CUT DIMENSIONS

INITIAL WIDTH (IW) = 3mm WIDE
INITIAL CUT (IC) = 50mm DEEP

REAMED WIDTH (RW) = 8mm WIDE
REAMED DEPTH (RD) = 35mm DEEP

SEALANT DEPTH (SD) = 13mm
BACKING CORD = 10mmØ

TYPICAL SAW CUT JOINT DETAIL AT REINFORCING
NTS

NOTES / NOTAS

ISOLATION JOINT LAYOUT
SAW CUT JOINT
SLAB ON EDGE

35MPa CONCRETE FOR SURFACE BED AND PLINTH = 10m³

TOTAL LENGTH OF SAW CUT JOINTS = 15m

REFERENCE / VERWYSINGS

REFER TO DRAWING NO 3219-1100-00-00 FOR GENERAL NOTES

ALL LEVELS AND DIMENSIONS SHOULD BE CHECKED AND VERIFIED ON SITE PRIOR TO CONSTRUCTION

FIXING METHOD OF GENERATORS AND DIESEL TANKS TO BE PROVIDED BY SPECIALIST

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PROJECT / PROJEK

CSIR BUILDING 9
NEW BACKUP GENERATOR

DRAWING TITLE / TEKENINGSTITEL

SURFACE BED SLAB AND PLINTH REINFORCING LAYOUT AND JOINT DETAILS
SHEET 1 OF 2

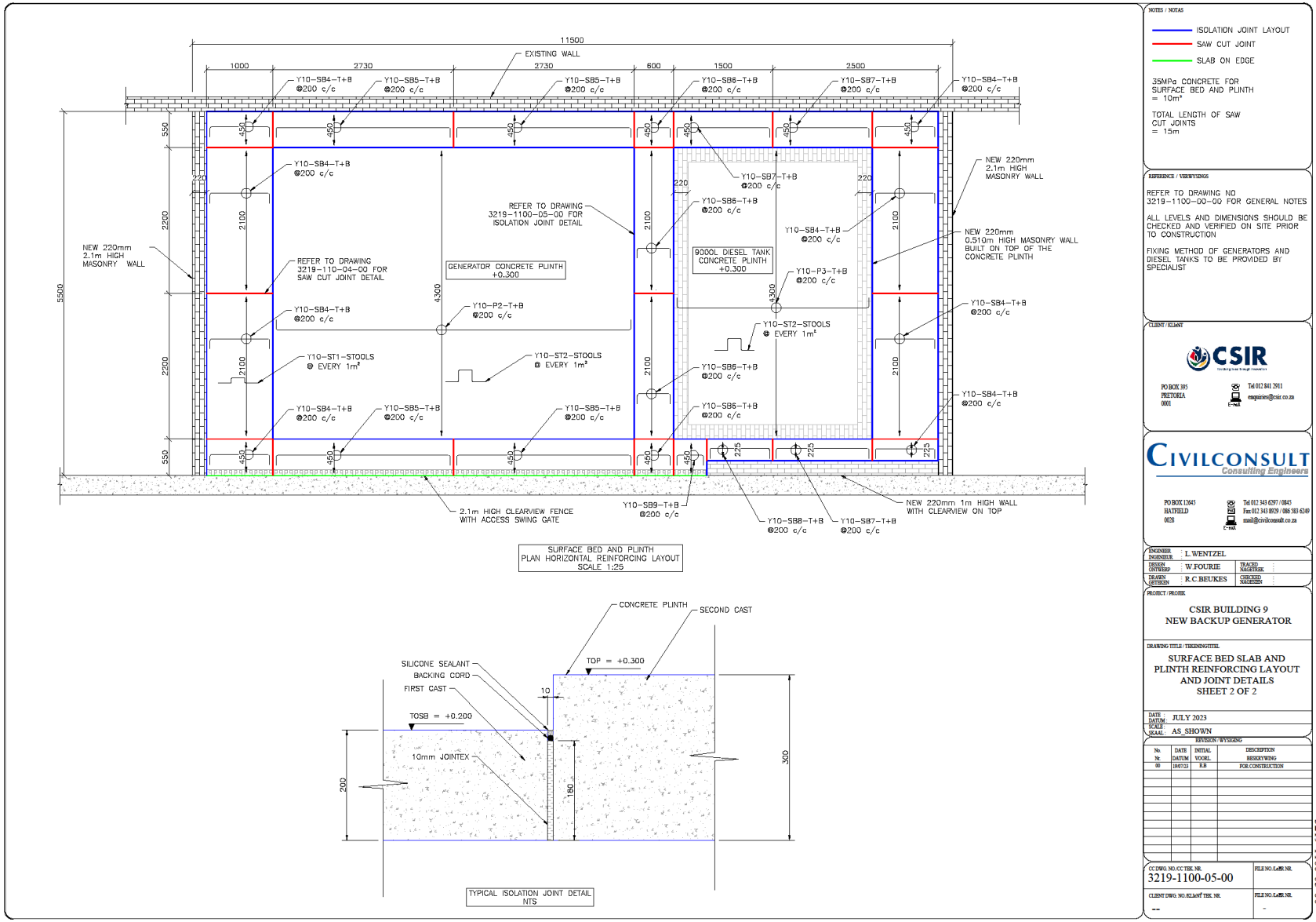
DATE / DATUM: JULY 2023
SCALE / SKAAL: AS SHOWN

REVISION / WYSIGING

No. / Nr.	DATE / DATUM	INITIAL / VOORL.	DESCRIPTION / BESKRYWING
00	19/7/23	R.B	FOR CONSTRUCTION

CC DWG. NO. / CC TEK. NR.: 3219-1100-04-00
FILE NO. / LêER NR.:
CLIENT DWG. NO. / KLIëNT TEK. NR.: --
FILE NO. / LêER NR.: -

3219-1100-04-00



NOTES / NOTAS

ISOLATION JOINT LAYOUT
SAW CUT JOINT
SLAB ON EDGE

35MPa CONCRETE FOR SURFACE BED AND PLINTH = 10m³

TOTAL LENGTH OF SAW CUT JOINTS = 15m

REFERENCE / VERWYSINGS

REFER TO DRAWING NO 3219-1100-00-00 FOR GENERAL NOTES

ALL LEVELS AND DIMENSIONS SHOULD BE CHECKED AND VERIFIED ON SITE PRIOR TO CONSTRUCTION

FIXING METHOD OF GENERATORS AND DIESEL TANKS TO BE PROVIDED BY SPECIALIST

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CHECKED / NAGESIEN

PROJECT / PROJEK

CSIR BUILDING 9
NEW BACKUP GENERATOR

DRAWING TITLE / TEKENINGTITEL

SURFACE BED SLAB AND PLINTH REINFORCING LAYOUT AND JOINT DETAILS
SHEET 2 OF 2

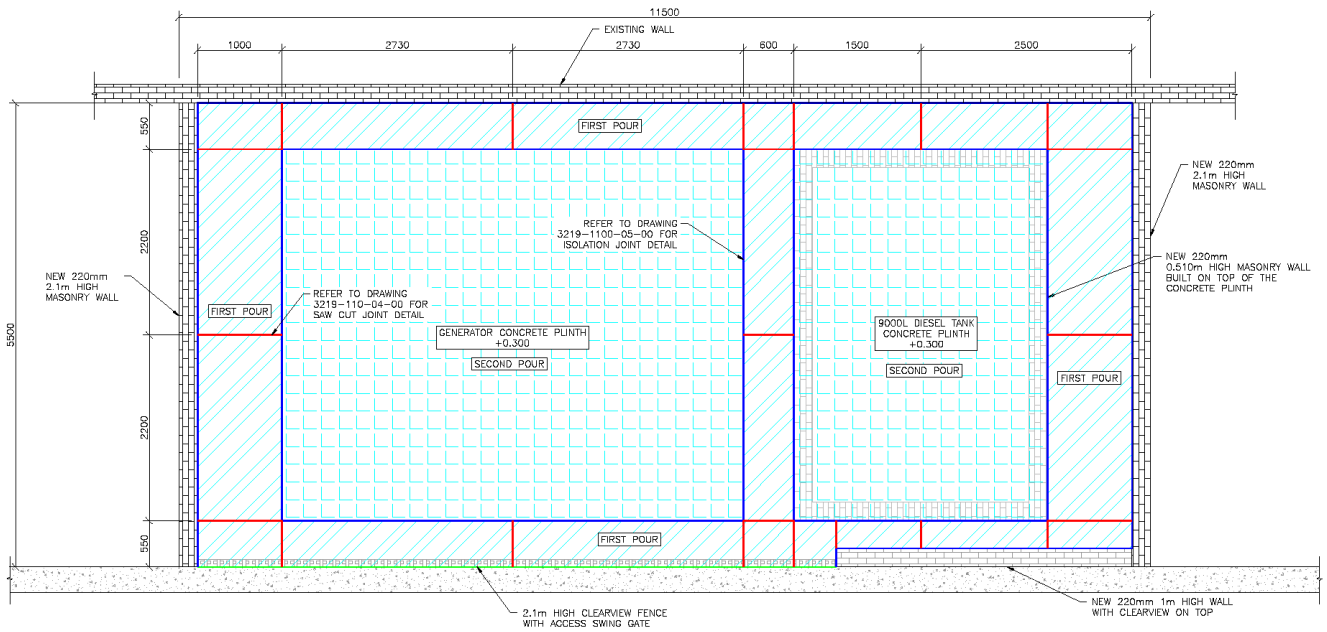
DATE / DATUM: JULY 2023
SCALE / SKAAL: AS SHOWN

REVISION / WYSIGING

No. Nr.	DATE DATUM	INITIAL VOORL.	DESCRIPTION BESKRYWING
00	19/07/23	R.B	FOR CONSTRUCTION

CC DWG. NO./CC TEK. NR.: 3219-1100-05-00
FILE NO./LêER NR.:
CLIENT DWG. NO./KLIËNT TEK. NR.: --
FILE NO./LêER NR.: -

3219-1100-05-00



SURFACE BED AND PLINTH
CONCRETE POURING SEQUENCE LAYOUT
SCALE 1:25

MEMBER	No OF	BARS PER MEMB	DIA.	LENGTH	TOTAL NUM-BER	MARK	S	C	BENDING A	B	C	D	E/r
SURFACEBED SLAB	1	64	Y10	2250	64	SB1	38		100	2100	(100)		
		188	Y10	600	188	SB2	38		100	450	(100)		
		36	Y10	400	36	SB3	38		100	230	(100)		
		88	Y10	4550	88	P1	38		150	4300	(150)		
		112	Y10	1050	112	SB4	38		100	900	(100)		
		24	Y10	2500	24	SB5	38		100	2360	(100)		
		56	Y10	650	56	SB6	38		100	500	(100)		
		16	Y10	1550	16	SB7	38		100	1400	(100)		
		4	Y10	1050	4	SB8	38		100	900	(100)		
		6	Y10	550	6	SB9	38		100	400	(100)		
		26	Y10	5600	26	P2	38		150	5360	(150)		
		26	Y10	3150	26	P3	38		150	2900	(150)		
		34	Y10	550	34	ST1	83		200	80	200	(80)	
		38	Y10	850	38	ST2	83		200	180	200	(180)	

	8	10	12	16	20	25	32	40	TOT
R									
Y		738							738
TOT		738							738

Date	2023-07-19
Det. by	R.C.BEUKES
Ref Dwg	1100-04/05
Job No	3219
Revision	00
Schedule No	1100-B

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NOTES / NOTAS

ISOLATION JOINT LAYOUT
SAW CUT JOINT
SLAB ON EDGE
SURFACE BED SLAB FIRST POUR
SURFACE BED SLAB SECOND POUR

35MPa CONCRETE FOR SURFACE BED AND PLINTH = 10m³

TOTAL LENGTH OF SAW CUT JOINTS = 15m

REFERENCE / VERWYSINGS

REFER TO DRAWING NO 3219-1100-00-00 FOR GENERAL NOTES

ALL LEVELS AND DIMENSIONS SHOULD BE CHECKED AND VERIFIED ON SITE PRIOR TO CONSTRUCTION

FIXING METHOD OF GENERATORS AND DIESEL TANKS TO BE PROVIDED BY SPECIALIST

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DESIGN / ONTWERP : W.FOURIE
DRAWN / GETEKEN : R.C.BEUKES
TRACED / NAGETEKE :
CHECKED / NAGESIEN :

PROJECT / PROJEK

CSIR BUILDING 9
NEW BACKUP GENERATOR

DRAWING TITLE / TEKENINGSTITEL

SURFACE BED
CONCRETE POUR SEQUENCE
AND BENDING SCHEDULE
SHEET 1 OF 1

DATE / DATUM : JULY 2023
SCALE / SKAAL : AS_SHOWN

REVISION / WYSIGING

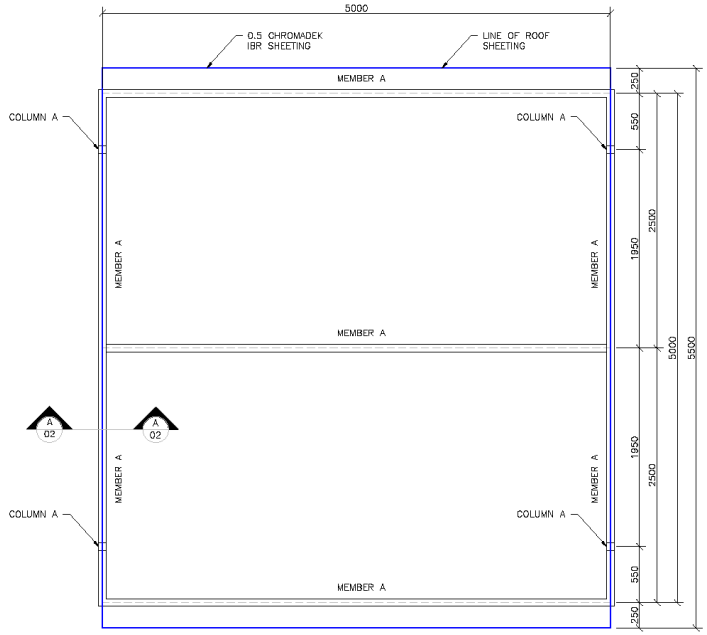
No. Nr.	DATE DATUM	INITIAL VOORL.	DESCRIPTION BESKRYWING
00	19/07/23	R.B	FOR CONSTRUCTION

CC DWG. NO./CC TEK. NR.: 3219-1100-06-00
FILE NO./LêER NR.:
CLIENT DWG. NO./KLIËNT TEK. NR.: --
FILE NO./LêER NR.: -

3219-1100-06-00

MEMBER SCHEDULE

MEMBER A : 75x75x3.0mm SHS
COLUMN A : 75x75x4.0mm SHS



PLAN VIEW
SCALE 1:20

NOTES / NOTAS

ROOF SHEETING LINE

REFERENCE / VERWYSINGS

ALL FINISHES TO MATCH EXISTING STEEL CARPORTS AND SHOULD BE CONFIRMED WITH CSIR BEFORE MANUFACTURING

REFER TO DRAWING NO 3219-1100-00-00 FOR GENERAL NOTES

ALL LEVELS AND DIMENSIONS SHOULD BE CHECKED AND VERIFIED ON SITE PRIOR TO CONSTRUCTION

ALL CONNECTIONS SHOULD BE WELDED CONNECTIONS

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PROJECT / PROJEK

CSIR BUILDING 9
NEW BACKUP GENERATOR

DRAWING TITLE / TEKENINGTITEL

STEEL LAYOUT
SHEET 1 OF 2

DATE : JULY 2023
DATUM :
SCALE : AS_SHOWN
SKAAL :

REVISION / WYSIGING

No. / Nr.	DATE / DATUM	INITIAL / VOORL.	DESCRIPTION / BESKRYWING
00	28/07/23	WF	FOR CONSTRUCTION

CC DWG. NO./CC TEK. NR.
3219-1400-01-00

FILE NO./LêER NR.

CLIENT DWG. NO./KLIËNT TEK. NR.
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FILE NO./LêER NR.
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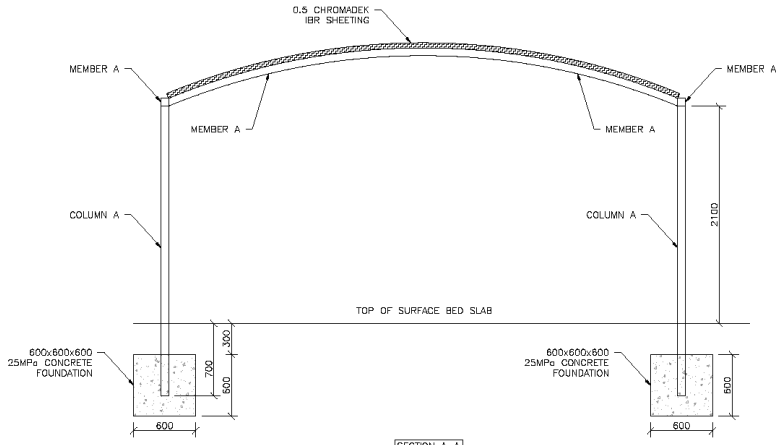
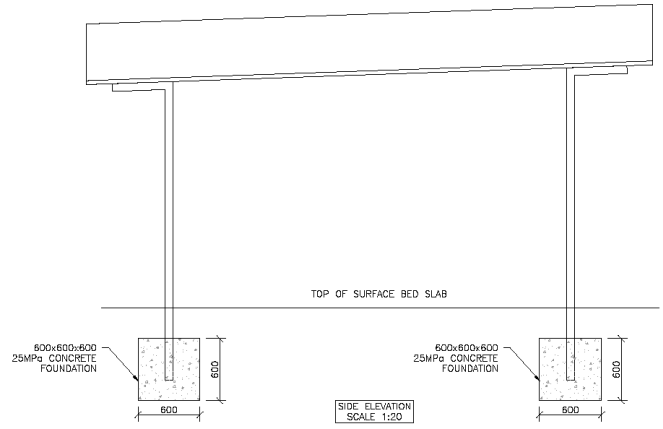
3219-1400-01-00



SECTION A–A
SCALE 1:20



SIDE ELEVATION
SCALE 1:20

NOTES / NOTAS

ROOF SHEETING LINE

REFERENCE / VERWYSINGS

ALL FINISHES TO MATCH EXISTING STEEL CARPORTS AND SHOULD BE CONFIRMED WITH CSIR BEFORE MANUFACTURING

REFER TO DRAWING NO 3219-1100-00-00 FOR GENERAL NOTES

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ENGINEER / INGENIEUR	: L.WENTZEL		
DESIGN / ONTWERP	: W.FOURIE	TRACED / NAGETEKEN	:
DRAWN / GETEKEN	: W.FOURIE	CHECKED / NAGESIEN	:

PROJECT / PROJEK

CSIR BUILDING 9
NEW BACKUP GENERATOR

DRAWING TITLE / TEKENINGSTITEL

STEEL LAYOUT
SHEET 2 OF 2

DATE : JULY 2023
SCALE : AS SHOWN

REVISION / WYSIGING

No.	DATE	INITIAL	DESCRIPTION
Nr.	DATUM	VOORL.	BESKRYWING
00	19/07/23	WF	FOR CONSTRUCTION

CC DWG NO./CC TEK. NR.
3219-1400-02-00

FILE NO./LêER NR.

CLIENT DWG NO./KLIËNT TEK. NR.
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FILE NO./LêER NR.
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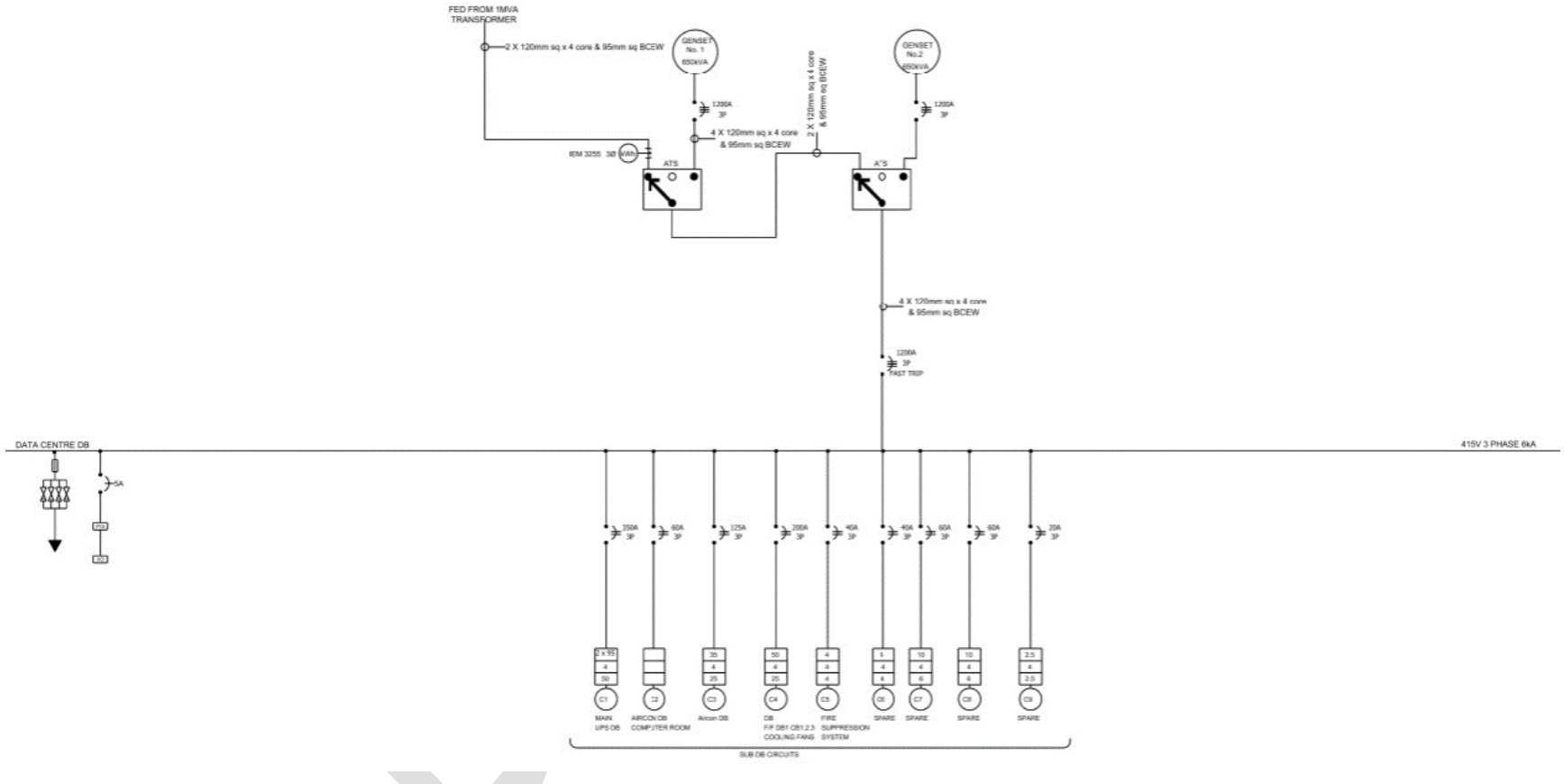
3219-1400-02-00

Data Centre Board DB Layout



SYMBOLS FOR LINE DIAGRAMS			SYMBOLS FOR LINE DIAGRAMS		
SWITCH GENERAL SYMBOL	T	TIME SWITCH	FUSE DISCONNECTOR		SURGE ARRESTOR
CIRCUIT BREAKER	A	AMMETER	CONTACTOR OR RELAY	OCS	REMOTE OCCUPANCY SENSOR
ISOLATOR	V	VOLTMETER	WITHDRAWABLE CIRCUIT BREAKER	BC	BUS COUPLER
BYPASS SWITCH, LOCATED INSIDE DB (MUST BE A SWITCH, NOT A CIRCUIT BREAKER)	M	MOTOR	ELR	DN	DAY NIGHT SWITCH
LIGHT SWITCH INSTALLED AS SHOWN ON RELEVANT LIGHTING LAYOUT DRAWING	BMS	BUILDING MANAGMENT SYSTEM	EARTH LEAKAGE RELAY WITH OVERLOAD PROTECTION	DALI	DALI CONTROLLER FOR LIGHTING
POTENTIAL FREE RELAY CONTACT CONTROLLED BY BMS (MODBUS)		GENERATOR	OPERATING DEVICE (UPS)	MODBUS	MODBUS TO TCP/IP GATEWAY FOR BMS COMMUNICATION
FUSE		CURRENT TRANSFORMER	ACTUATOR WITH KNX MODULE	EM	ENERGY METER, MODBUS
FUSE SWITCH		TRANSFORMER	24V POWER SUPPLY FOR BMS	IOM	INPUT / OUTPUT MODULE FOR BMS