BID NUMBER: PROC T665

APPOINTMENT OF A SERVICE PROVIDER FOR A CIDB REGISTERED CONTRACTOR FOR THECONSTRUCTION OF A SKILLS DEVELOPMENT CENTRE IN GA-PHASHA

Issued by:

Services SETA
Ristone Office Park,
15 Sherborne Road,
Parktown,
Johannesburg,
2193

Contact Person: General Queries
Name : Mrs Conny Mathebula
Tel No. (011) 276 9621
Email : tenders@serviceseta.org.za

Technical: Technical Queries
Name : Ms Nyiko Michavi
Tel No. (011) 694 8693
Email : InfrastructureTenders@serviceseta.org.za

Name of the Bidder :……

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PART T1: TENDERING PROCEDURE

T1.1 Tender Notice and Invitation to Tender

Services SETA invites tenderers from contractors who are registered with CIDB **for the APPOINTMENT OF A SERVICE PROVIDER FOR A CONTRACTOR FOR THE CONSTRUCTION OF A SKILLS DEVELOPMENT CENTRE IN GA-PHASHA for** a period of 12 months. It is estimated that tenderers must have a CIDB contractor grading designation of **6 GB** or higher.

Project Name	APPOINTMENT OF A SERVICE PROVIDER FOR A CIDB REGISTERED CONTRACTOR FOR THE CONSTRUCTION OF A SKILLS DEVELOPMENT CENTRE IN GA-PHASHA FOR A PERIOD OF 12 MONTHS.	
Tender Number	PROC T665	
Tender documents availability	Services SETA website	
Address for submission of tenders	SERVICES SETA. Physical address: Ristone Office Park, 15 Sherborne Road, Parktown, Johannesburg, 2193.	
Closing date of the tender	**27 March 2025**	
Closing time of the tender	**11h00 am**	
Compulsory briefing meeting (*Tenderers must sign the attendance register in the name of the tendering entity. Addenda (if any) will be issued only to those tendering entities appearing on the attendance register***)**	Yes	**No ☒**
	Meeting venue	**N/A**
	Date	**N/A**
	Time:	**N/A**
Evaluation criteria	1. Compliance with mandatory or compulsory requirements 2. Functionality 3. Price 4. Preference Points (Specific Goals)	
Mandatory or Compulsory Requirements *(failure to submit or comply with these requirements will lead to automatic disqualification)*	Only tenderers who are registered with the Construction Industry Development Board (CIDB) with designation of 6GB or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations are eligible to have their tenders evaluated	
	Completed and signed Form of Offer	

T1.2 Tender Data

Clause number	Tender Data
	The conditions of tender are the Standard Conditions of Tender as contained in Annex C of Board Notice 423 of 2019 in Government Gazette No. 42622 of 08 August 2019, Construction Industry Development Board (CIDB) Standard for Uniformity in Construction Procurement. (See www.cidb.org.za) which are reproduced without amendment or alteration for the convenience of tenderers as an Annex to this Tender Data. The Standard Conditions of Tender make several references to the Tender Data for details that apply specifically to this tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the standard conditions of tender. Each item of data given below is cross-referenced to the clause in the Standard Conditions of Tender to which it mainly applies.
C.1.1	The Employer is the Services SETA
C.1.2	**The Tender** **Part T1: Tendering procedures** T1.1 Tender notice and invitation to tender T1.2 Tender data **Part T2: Returnable documents** T2.1 List of returnable documents T2.2 Returnable schedules **The Contract Part C1: Agreements and contract data** C1.1 Form of offer and acceptance C1.2 Contract data C1.3 Joint Venture Agreement (If Applicable) **The Contract Part C2: Pricing data** C2.1 Pricing instructions C2.2 Bills of Quantities **Part 3: Scope of work** C3.1 Special Notes to Bidders C3.2 OHS Specifications **Part 4: Site information** C4 Drawings

C.1.4	The employer's representative is : Name : Cydwell Teffu Tel No. : 011 276 9740 Email : Cydwellt@serviceseta.org.za However, all communications related to this bid should be directed to the persons indicated under Enquires on this tender document. Attention is also drawn to the fact that verbal information, given by the Employer's agent during site visits/clarification meetings or at any other time prior to the award of the Contract, will not be regarded as binding on the Employer. Only information issued formally by the Employer in writing to Tenderers will be regarded as amending the Tender Documents
C.1.5	The employer reserve to cancel the tender prior to the award of the tender.
C1.6.2	A competitive negotiation procedure will not be followed.
C1.6.3	A four-stage system will be followed.
C.2.1	**Eligibility in respect of CIDB grading** Only tenderers who are registered with the Construction Industry Development Board (CIDB) with designation of 6 GB or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, are eligible to have their tenders evaluated Joint ventures are eligible to submit tenders provided that: 1. every member of the joint venture is registered with the cidb; 2. the lead partner has a contractor grading designation in the 6GB or high class of construction work; or not lower than one level below the required grading designation in the class of works construction works under considerations and possess the required recognition status. 3. the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a or ….* class of construction work or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations.
C2.2	**Cost of tendering** The tenderer accept that, unless otherwise stated in the tender data, the employer will not compensate the tenderer for any costs incurred in the preparation and submission of a tender offer, including the costs of any testing necessary to demonstrate that aspects of the offer complies with requirements
C.2.7	**No site briefing**
C.2.11	**Alterations to the documents** Bidders are required to not make any alterations or additions to the tender documents, except to comply with instructions issued by the employer, or necessary to correct errors made by the tenderer. All signatories to the tender offer shall initial all such alterations

C.2.12	**Alternative tender offer** No alternative tender offer is permitted in this tender.
C.2.13.2	***Replace sub-clause C.2.13.2 with the following;*** Return all returnable documents to the employer after completing them in their entirety by writing in **non-erasable black ink**
C.2.13.3	Parts of each tender offer communicated on paper shall be submitted as an original

C.2.13.4	The tender shall be signed by a person duly authorized to do so.
C.2.13.5	The employer's details and address for delivery of tender offers and identification details that are to be shown on each tender offer package are: **Location of tender box: SERVICES SETA.** **Physical address: Ristone Office Park, 15 Sherborne Road, Parktown, Johannesburg, 2193** **Identification details:** Sealed Tender with Tender reference number, Title of Tender and the closing date and time of the tender.
C.2.15.1	The closing time for submission of tender offers is as stated in the Tender Notice and Invitation to Tender. Telephonic, telegraphic, telex, facsimile or e-mailed tender offers will not be accepted.
C.2.16.1	The tender offer validity period is **12 weeks or 90 days.**
C.2.16.2	The tender accepts that a tender submission that has been submitted to the employer may only be withdrawn or substituted by giving the employer's agent written notice before the closing time for tenders that a tender is to be withdrawn or substituted. If the validity period stated in C.2.16 lapses before the employer evaluating tender, the contractor reserves the right to review the price based on Consumer Price Index (CPI).
C.3.1	The tenderer is required to indicate how they claim points for each preference point system and attached relevant supporting documents. The specific goals for claiming of preference points include the following: - Black People Ownership (Persons who had no franchise in national elections prior to 1983 and 1993) - Black Women Ownership - Black Youth Ownership - Disabled Ownership - Enterprise located in Greater Tubatse Local Municipality
	CIDB Grading Certificate Tenders are required to provide proof of registration with the CIDB register of contractors indicating the category of registration, grading as well as the CRS number of the tenderer. ***Letter of Good Standing*** Tender are required to submit, bound with the tender submission, a letter of good from the compensation commissioner indicating that the bidder is in good standing.
C3.2	Notwithstanding any requests for confirmation of receipt of Addenda issued, the tenderer shall be deemed to have received such addenda if the employer can show proof of transmission thereof (or a notice in respect thereof) via electronic mail, facsimile or registered post.
C.3.4.1	Tenders wi be opened immediately after the closing time for tenders.

C.3.11	The tenderers will be evaluated in four stages (i) Stage 1: Compliance with mandatory requirements as stated in Part T1.1 (ii) Stage 2: Functionality (iii) Stage 3: Price (iv) Stage 4: Preference Points (Specific Goals) The technical capacity (functionality) of the contractors will be evaluated further during evaluation of the RFP. The contractors will be required to declare the status of their key staff and any administrative compliance. In cases where there are changes in the key staff, the contractor should provide CVs and qualifications of the new staff to Services SETA. The new staff should have similar skills, qualifications and experience as the staff submitted during tender. Similarly, the contractors will be expected to provide an update on any changes in their administrative compliances – and should submit the required SBD document in such cases. The award will only be issued to contractors with valid Tax Clearance certificates, active CIDB grading and the contractor who meets all the legislative requirement – this shall be verified by SCM in line with the Services SETA SCM Policy. The total value of current projects for a contractor under consideration cannot exceed the twice the maximum value of their relevant CIDB grade.[1]
	a) Stage 1: Administrative Compliance: The Compliance or compulsory documents and returnables are detailed in Section T.2.1 of this tender document. Failure to submit, complete or comply with these requirements will lead to automatic disqualification. b) Stage 2: Functionality The total value of current projects for a contractor under consideration cannot exceed the twice the maximum value of their relevant CIDB grade.

FUNCTIONALITY SCORE SHEET

NAME OF POTENTIAL BIDDER……

BID REFERENCE NUMBER PROC T665……..

CRITERION 2- FUNCTIONALITY

<table>
<tr><th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>F</th><th>G</th><th>H</th></tr>
<tr><td>FUNCTIONALITY</td><td>REQUIREMENT</td><td>SCORE QUALIFICATION</td><td>MEASUREMENT (what must be provided/ demonstratedas minimum)</td><td colspan="4"></td></tr>
<tr><td></td><td></td><td></td><td>Indicate what pages/ sectionin proposal?</td><td>Weighted Points</td><td>Yes</td><td>No</td><td>Score</td></tr>
<tr><td>Capability

of Service Provider</td><td>The key team members must have a specific experience, skills and capacity to deliver in relation to score qualificationcriteria.</td><td>Key Staff who will be dedicated to the project:
The Bidder has at least one key suitably qualified in each of the competencies which are specified in the Supplier Declaration who are employed on a full time basis and will either provide the services or will direct the services which are to be provided.

1. Project Manager/Site Agent
<table>
<tr><th>Qualification</th><th>Years Experience</th><th>Points</th></tr>
<tr><td>B Eng, BSc or B-Tech in Engineering, Architecture, QS or Construction Management</td><td>10 years and above</td><td>20</td></tr>
<tr><td></td><td>5 – 9 years</td><td>10</td></tr>
</table>
<u>Note</u>: Names submitted at tender may not be substituted during construction without written client approval</td><td>Attach a brief CV’s of the proposed team members.

What page (s) or section ofyour proposal 3 deputingteam members may be found?

State page (s) number or State section/ tab…….....on yourproposal</td><td>20pts</td><td>☐</td><td>☐</td><td></td></tr>
<tr><td>Methodology

a

ndproject approach</td><td>Demonstrate an understanding of the scope of the project and the approach and methodology to be implemented to attain project objectives.</td><td>Demonstrate an understanding of the scope of the project and the approach andmethodology to be applied to attain project objectives.

Methodology statement and programme of works submitted with all activities, duration, start, finish & review design dates = 0-20 pts Methodology statement and programme of works submitted with activities & duration = 0-10 pts
No methodology statement and programme of works submitted = 0 pts</td><td>Attached ProposedProgramme of Works

What page (s) or section ofyour proposal informationwill be found?
State page (s) number or
State section/ tab…….....on your proposal.</td><td>20pts</td><td>☐</td><td>☐</td><td></td></tr>
</table>

APPOINTMENT OF A SERVICE PROVIDER FOR A CIDB REGISTERED CONTRACTOR FOR THE CONSTRUCTION OF A SKILLS DEVELOPMENT CENTRE IN GA-PHASHA

Similar Project Experience	Demonstrable numberof projects of similar construction nature successfully completed	Experience - to be evaluated in terms of demonstrable number of projects of similarconstruction nature successfully completed over the last 7 years or currently in progress by main contractor or joint venture / consortia partners: Projects worth R3m in descending order as follows: 5 projects and more = **0-20** pts 4 projects = **0-16** pts 3 projects = **0-12** pts 2 projects = **0-8** pts 1 project = **0-4** pts ***NB: In case of a project exceeding R3m, the points will be calculated bydividing the project value by R20m rounded to the nearest whole number.***	• Bid proposal What page (s) or section of your proposal informationwill be found? State **page (s) number** or State **section/ tab**…….....on yourproposal.	**20pts**			
Assignmen t Experience	The potential bidder must provide and attach three completion certificates	Provide and attach three (3) or more testimonials/ reference letters with a logo, letterhead, contactable details, dates and signature in the construction and refurbishment industry not older than ten **(10)** years. • Three **(3)** or more completion certificates in relation to previous work listed **=0-15pts** • Two **(2)** completion certificates in relation to previous worklisted **=0-10pts** • One **(1)** completion certificates in relation to previous worklisted**=0-5pts** • No completion certificates in relation to previous work listed **= 0pts**	• Attach three **(3)** Completion certificates What page (s) or section of your proposal informationwill be found? State **page (s) number** or State **section/ tab**…….....on yourproposal.	**15pts**			
Subcontracting		**Local Subcontractors and demonstration of Local Employment – Important to note: Subcontracting must only be to 51% Black Owned Entities that are Exempted Micro Enterprises.** **Services SETA reserves the right to verify.**	Submit subcontractors' registration documents and in-principle agreement with proposed subcontractors What page (s) or section of your proposal information will be found? State **page (s) number** .....or State **section/ tab**…….....on yourproposal.	**25pts**			

		- Subcontractor work valued at 30% and above, between at least 5 subcontractors = **0-25pts** - Subcontractor work valued between 20% and 30%,between at least 4 subcontractors = **0-20pts** - Subcontractor work valued between 10% and 20%, between at least 3 subcontractors = **0-10pts** - Subcontractor work valued at less than 10%= **0pts**	State **page (s) number**.....or State **sectio n/ tab**…….....on yourproposal.				
Total weighted Points				**100**			

The minimum functionality threshold is **70** points. Bidders who score less than 70 points on functionality will therefore be disqualified; those who score 70 points or more will befurther evaluated on **Criteria 3**.

Price and Preference points used: **80/20** preferential procurement principle	**80** (Price)	R……,……
	20 (BEE Status)	Level…… and points……

Name of Evaluator:			
Signature:		**Date:**	……/……/2025

Stage 3 and 4:

The procedure for final evaluation of responsive tenders is Method 2 (Financial offer and preference points). The total number of tender evaluation points (T_{EV}) shall be determined in accordance with the following formula.

$$T_{EV} = N_{FO} + N_P$$

a) N_{FO} is the number of tender evaluation points awarded for the financial offer made. The score for financial offer is calculated using the following formula:

$$P = A * (1 - \frac{(P_o - P_m)}{P_m})$$

Where:

A is 80 since the estimated financial value of works inclusive of VAT is equals or is less than R 50,000,000.00.

P is the points awarded to the bid under consideration

P_m is the lowest Comparative bid price

P_o is the comparative price under consideration

N_P is the number of tender evaluation points awarded for preferences claimed in accordance with the Preferencing Schedule in 3.18

PART T2: RETURNABLE DOCUMENTS

T2.1 : LIST OF RETURNABLE DOCUMENTS

The following documents will form part of the documents submitted to the Contractors as part of the Request for Proposals:

2.1 Fully completed Form of Offer
2.2 Bills of Quantities
2.3 Returnable documents for Functionality
2.4 Proof of specific goal for award of the preference points as determined on the Request for Proposal
2.5 SBD 4
2.6 SBD 6.1.
2.7 Declaration on the status of Administration compliance.
2.8 CIDB registration
2.9 CSD Report
2.10 Tax clearance certificate
2.11 Declaration of current projects

Failure by the service provider to submit or complete item 2.1 or 2.2 will render their proposal not responsive and will not be considered.

The bidder should also not appear on the National Treasury's list of black listed entities

T 2.2 : RETURNABLE SCHEDULE

	Document Name	Returnable document
1.	Preferencing schedule:	☐ Yes ☐ No
2.	Proposed amendments and qualifications (if applicable)	☐ Yes ☐ No
3.	SBD 1: Invitation to tender	☐ Yes ☐ No
4.	SBD 4: Declaration of Interest	☐ Yes ☐ No
4.	SBD 6.1: Reference Points claim form in terms of the Preferential Procurement Regulations 2022 or amended	☐ Yes ☐ No
5.	Form of offer	☐ Yes ☐ No
6.	CSD summary report	☐ Yes ☐ No
7.	Original tax clearance certificate or tax pin	☐ Yes ☐ No
8.	Priced bills of quantities	☐ Yes ☐ No
9.	Proof of CIDB class grading: 6GB or higher.	☐ Yes ☐ No
10.	Declaration with regard to current projects	☐ Yes ☐ No

Declaration on the status of administrative compliance

Please indicate, by circling either **Yes** or **No**, whether the administrative information submitted with the original framework tender documents has changed or not. If yes, kindly provide the particulars below and any supporting documents.

.....

.....

.....

.....

Signed _____ Date .....

Name _____ Position .....

Enterprise .....

Record of Addenda to tender documents

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

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

Attach additional pages if more space is required.

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

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

Tenderer .....

.....

.....

.....

Bidder's initials

SBD 1

PART A: INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE SERVICES SETA					
BID NUMBER:	**PROC T665**	**CLOSING DATE 27 MARCH 2025**	**As per Tender Advert**	**CLOSING TIME:**	**11:00am**
DESCRIPTION	**APPOINTMENT OF A SERVICE PROVIDER FOR A GRADE CIDB REGISTERED CONTRACTOR FOR THE CONSTRUCTION OF A SKILLS DEVELOPMENT CENTRE IN GA-PHASHA**				

BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT (STREET ADDRESS)
SERVICES SETA
Physical address: Ristone Office Park, 15 Sherborne Road, Parktown, Johannesburg, 2193.

BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO			
CONTACT PERSON	Mrs. Conny Mathebula		
TELEPHONE NUMBER	(011) 276 9621	E-MAIL ADDRESS	tenders@serviceseta.org.za
CONTACT PERSON (TECHNICAL)	Ms. Nyiko Michavi		
TELEPHONE NUMBER	(011) 694 8693	E-MAIL ADDRESS	InfrastructureTenders@serviceseta.org.za

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

QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS

IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?	☐ YES ☐ NO
DOES THE ENTITY HAVE A BRANCH IN THE RSA?	☐ YES ☐ NO
DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?	☐ YES ☐ NO
DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?	☐ YES ☐ NO
IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?	☐ YES ☐ NO

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

PART B: TERMS AND CONDITIONS FOR BIDDING

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: ……...

BIDDER'S DISCLOSURE **SBD 4**

1. PURPOSE OF THE FORM

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

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

2. Bidder's declaration

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

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

Full Name	Identity Number	Name of State institution

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

_____

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

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 consortium2 will not be construed as collusive bidding.

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

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

3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the

_____

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

institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.

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

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

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

SBD 6.1

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

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

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

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1. GENERAL CONDITIONS

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

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

1.2 To be completed by the organ of state

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

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

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

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

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

(a) Price; and

(b) Specific Goals.

1.4 To be completed by the organ of state:

The maximum points for this tender are allocated as follows:

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

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

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

2. DEFINITIONS

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

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

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

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

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

(f)

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

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

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

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

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

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

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

3.2.1. POINTS AWARDED FOR PRICE

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

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

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

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmax = Price of highest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

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

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

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

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

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

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

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

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

The specific goals allocated points in terms of this tender	Number of points allocated (90/10 system) (To be completed by the organ of state)	Number of points allocated (80/20 system) (To be completed by the organ of state)	Number of points claimed (90/10 system) (To be completed by the tenderer)	Number of points claimed (80/20 system) (To be completed by the tenderer)
Black People Ownership	3	6		
Woman Ownership	3	6		
Youth Ownership	1,5	3		
Disability Ownership	0,5	1		
Skills Transfer and Development	0	0		
Local Suppliers(Residing in a local municipality)	2	4		
Total	**10**	**20**		

DECLARATION WITH REGARD TO COMPANY/FIRM

4.3. Name of company/firm…….

4.4. Company registration number: ……...

4.5. TYPE OF COMPANY/ FIRM

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

□ State Owned Company
[TICK APPLICABLE BOX]

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

i) The information furnished is true and correct;

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

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

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

(a) disqualify the person from the tendering process;

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

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

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

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

.....

SIGNATURE(S) OF TENDERER(S)

SURNAME AND NAME: .....

DATE: .....

ADDRESS: .....

.....

.....

.....

DECLARATION OF CURRENT PROJECTS

Current value refers to current value of projects for both General Building (GB). Please list the current projects

which your company is busy executing in the table below.

If no projects at the moment the tender must indicate/write on this table

Table 1 List of current projects executed by the bidder

1. Do you have the current projects being executed Yes/No?
2. If Yes, please indicate the details on the table below. Please note that it is compulsory to answer the question and if the answer is yes, complete the table. If the question not answered or the table not completed the points will not be allocated.

Project Description	Project Value	Start date	Planned end date	Client Name	Contact Person number

Bidder's initials

Bidder's initials

THE CONTRACT

PART C1: AGREEMENT AND CONTRACT DATA

C1.1. FORM OF OFFER AND ACCEPTANCE

Offer

The employer, identified in the acceptance signature block, has solicited offers to enter into a contract in respect of the following works:

APPOINTMENT OF A SERVICE PROVIDER FOR A CIDB REGISTERED CONTRACTOR FOR THE CONSTRUCTION OF A SKILLS DEVELOPMENT CENTRE IN GA-MAFEFE

.
The tenderer, identified in the offer signature block, has examined the documents listed in the tender data and addenda thereto as listed in the tender schedules, and by submitting this offer has accepted the conditions of tender.

By the representative of the tenderer, deemed to be duly authorized, signing this part of the Form of Offer and Acceptance, the tenderer offers to perform all of the obligations and liabilities of the contractor under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the conditions of contract identified in the contract data.

THE OFFERED TOTAL OF THE PRICE INCLUSIVE OF VALUE ADDED TAX IS (CONTRACT PRICE)

Rand (in words); R..... …….

……

(in figures) R……

This offer may be accepted by the employer by signing the acceptance part of this form of offer and acceptance and returning one copy of this document to the tenderer before the end of the period of validity stated in the tender data, whereupon the tenderer becomes the party named as the contractor in the conditions of contract identified in the contract data.

Signature(s) ....

Name(s) ....

Capacity ....

For the tenderer: .....

Name & signature of witness _____ Date

Acceptance (To be completed by the employer – not the bidder)

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

The terms of the contract, are contained in:

Part C1	Agreements and Contract Data, (which includes this Form of Offer and Acceptance)
Part C2	Pricing Data
Part C3	Scope of Work

and drawings and documents (or parts thereof), which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Returnable Schedules as well as any changes to the terms of the Offer agreed by the tenderer and the *Employer* during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Form of Offer and Acceptance. No amendments to or deviations from said documents are valid unless contained in this Schedule.

The tenderer shall within two weeks of receiving a completed copy of this agreement, including the Schedule of Deviations (if any), contact the *Employer's* agent (whose details are given in the Contract Data) to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the *conditions of contract* identified in the Contract Data. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

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

For the Employer

Signature .....

Name .....

Capacity .....

Name and address of organization

Signature and Name of Witness

Signature .....

Name .....

Capacity .....

Schedule of Deviations

1 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

. . . . . .

2 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

. . . . . .

3 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

. . . . . .

4 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

. . . . . .

By the duly authorised representatives signing this agreement, the *Employer* and the Tenderer agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the Tender Data and addenda thereto as listed in the returnable schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the Tenderer and the *Employer* during this process of offer and acceptance.

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

……..

Bidder's initials

PART C2: PRICING DATA

C2.1 CONTRACT DATA

The Conditions of Contract are clauses 1 to 41 of the **JBCC Series 2000 Principal Building Agreement (Edition 6.2 - May 2018)** published by the Joint Building Contracts Committee.

Copies of these conditions of contract may be obtained from the Association of South African Quantity Surveyors (011-3154140), Master Builders Association (011-205-9000; 057- 3526269) South African Association of Consulting Engineers (011-4632022) or South African Institute of Architects (051-4474909; 011-4860684; 053-8312003;)

The JBCC Principal Building Agreement makes several references to the Contract Data for specific data, which together with these conditions collectively describe the risks, liabilities, and obligations of the contracting parties and the procedures for the administration of the Contract. The Contract Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the JBCC Principal Building Agreement.

PART C2.2: BILLS OF QUANTITIES

Item No		Quantity	Rate	Amount

SECTION 1

BILL No. 1

PRELIMINARIES

BUILDING AGREEMENT AND PRELIMINARIES

The JBCC Preliminaries Code 2103, May 2005 edition for use with the JBCC Principal Building Agreement Edition 4.1 Code 2101, March 2005 is taken to be incorporated herein. The tenderer is deemed to have referred to these documents for the full intent and meaning of each clause. These clauses are referred to by number and heading only. Where standard clauses or options are not applicable to the contract such modifications or corrections as are necessary are given under each relevant clause. Where an item is not relevant to this specific contract such item is marked. "N/A" signifying "Not Applicable".

Contractors are referred to the above mentioned documents for the full intent and meaning of each clause thereof

These clauses are hereinafter referred to by clause number and heading only. Where standard clauses or alternatives are not entirely applicable to this contract such modifications, corrections or supplements as will apply are given under each relevant clause heading and such modifications, corrections or supplements shall take precedence notwithstanding anything contrary contained in the above mentioned documents

Where any item is not relevant to this specific contract such item is marked N/A, signifying "not applicable"

Carried to Summary R

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PREAMBLES FOR TRADES

The Model Preambles for Trades (2008 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said Model Preambles will be entertained

Supplementary preambles are incorporated in these bills of quantities to satisfy the requirements of this project. Such supplementary preambles shall take precedence over the provisions of the said Model Preambles

The contractor's prices for all items throughout these bills of quantities must take account of and include for all of the obligations, requirements and specifications given in the said Model Preambles and in any supplementary preambles

PRICING OF PRELIMINARIES

Should the contractor select Option A in terms of subclause 3.2.1 in the Contract Data - Contractor to Employer (CE) for the purpose of adjustment of these preliminaries, the amount entered into the amount column in these preliminaries is to be divided into one or more of the three categories provided namely Fixed (F), Value Related (V) and Time Related (T)

SECTION A - PRINCIPAL BUILDING AGREEMENT

Definitions

1 Clause 1.0 - Definitions and interpretation

F:..... V:.....
T:..... Item

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	Objective and preparations				
1	Clause 2.0 - Offer acceptance and performance obligations F:..... V:..... T:.....	Item			
2	Clause 3.0 - Documents F:..... V:..... T:.....	Item			
3	Clause 4.0 - Design responsibility F:..... V:..... T:.....	Item			
4	Clause 5.0 - Employer's agents F:..... V:..... T:.....	Item			
5	Clause 6.0 - Contractor's site representative F:..... V:..... T:.....	Item			
6	Clause 7.0 - Compliance with laws and regulations F:..... V:..... T:.....	Item			
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	Without limiting the generality of the provisions of clause 7.0, the contractor's attention is drawn to the provisions of the Construction Regulations, 2003 issued in terms of the Occupational Health and Safety Act, 1993. It is specifically stated that the employer shall prepare a documented health and safety specification for the works and that the employer shall ensure that the contractor has made provision for the cost of health and safety measures during the execution of the works. The contractor shall price opposite this item for compliance with the act and the regulations and the reasonable provisions of the aforementioned health and safety specifications				
1	Clause 8.0 - Works risk F:..... V:..... T:.....		Item		
2	Clause 9.0 - Indemnities F:..... V:..... T:.....		Item		
3	Clause 10.0 - General insurances F:..... V:.....T:.....		Item		
4	Clause 11.0 - Special insurances F:..... V:..... T:.....		Item		
5	Clause 12.0 - Effecting insurances F:..... V:.....T:.....		Item		
6	Clause 13.0 - Assignment F:..... V:..... T:.....		Item		
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1	Clause 14.0 - Security F:..... V:..... T:.....	Item			
	Execution				
2	Clause 15.0 - Preparation for and execution of the works F:..... V:..... T:.....	Item			
3	Clause 16.0 - Site and access Clause 16.7 - *Known services* Clause 16.8 - *Protection of trees* F:..... V:..... T:.....	Item			
4	Clause 17.0 - Contract instructions F:..... V:..... T:.....	Item			
5	Clause 18.0 - Setting out of the works The contractor shall notify the principal agent if any encroachments of adjoining foundations, buildings, structures, pavements, boundaries, etc. exist in order that the necessary arrangements may be made for the rectification of any such encroachments. F: ..... V:.....T:.....	Item			
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1	Clause 19.0 - Temporary works and plant Subclause 19.1.1 - *Enclosure of the works* Subclause 19.1.2 - *Office accommodation* Clause 19.2 - *Notice boards* F:..... V:..... T:.....	Item			
2	Clause 20.0 - Nominated subcontractors F:..... V:..... T:.....	Item			
3	Clause 21.0 - Selected subcontractors F:..... V:..... T:.....	Item			
4	Clause 22.0 - Employer's direct contractors F:..... V:..... T:.....	Item			
5	Clause 23.0 - Contractor's domestic subcontractors F:..... V:..... T:.....	Item			
	<u>Completion</u>				
6	Clause 24.0 - Practical completion F:..... V:..... T:.....	Item			
7	Clause 25.0 - Works completion F:..... V:..... T:.....	Item			
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1	Clause 26.0 - Final completion F:..... V:..... T:.....	Item			
2	Clause 27.0 - Latent defects liability period F:..... V:..... T:.....	Item			
3	Clause 28.0 - Sectional completion F:..... V:..... T:.....	Item			
4	Clause 29.0 - Revision of date for practical completion The removal and replacement of materials and/or workmanship which do not conform to specification or drawing shall not constitute grounds for the extension of the construction period nor for the adjustment of the contract value (Clause 29.3) F:..... V:..... T:.....	Item			
5	Clause 30.0 - Penalty for late or non-completion F:..... V:..... T:.....	Item			
	<u>Payment</u>				
6	Clause 31.0 - Interim payment Materials and goods stored off site shall not be included in the amount authorised for payment F:..... V:..... T:.....	Item			
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1	Clause 32.0 - Adjustment to the contract value All fluctuations in costs, with the exception of fluctuations in the rate of Value Added Tax, shall be for the account of the contractor Where prices are submitted by the contractor or n/s subcontractor during the progress of the works in respect of contract instructions or in regard to a claim under the terms of the contract and notwithstanding the fact that such prices may be used in an interim payment certificate, there is to be no presumption of acceptance. Should the principal agent wish to accept any such prices prior to the issue of the final payment certificate, it shall be in writing F:..... V:..... T:.....		Item		
2	Clause 33.0 - Recovery of expense and loss F:..... V:..... T:.....		Item		
3	Clause 34.0 - Final account and final payment F:..... V:..... T:.....		Item		
4	Clause 35.0 - Payment to other parties F:..... V:..... T:.....		Item		
	<u>Termination</u>				
5	Clause 36.0 - Termination by employer - contractor's default F:..... V:..... T:.....		Item		
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1	Clause 37.0 - Termination by employer - loss and damage F:..... V:..... T:.....	Item			
2	Clause 38.0 - Termination by contractor - employer's default F:..... V:..... T:.....	Item			
3	Clause 39.0 - Termination - cessation of the works F:..... V:..... T:.....	Item			
	Dispute				
4	Clause 40.0 - Settlement of disputes F:..... V:..... T:.....	Item			
	Contract agreement				
5	Clause 41.0 - Post tender provisions The required post tender information shall be inserted in the post tender provisions after consultation with the contractor	Item			
6	Clause 42.0 - Contractual agreement The required information of the contracting parties and the amount of the accepted contract sum shall be inserted in the contractual agreement for signature of the agreement by the contracting parties	Item			
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	SECTION B - PRELIMINARIES				
	Definitions and interpretation				
1	Clause 1.0 - Definitions and interpretation F:..... V:..... T:.....		Item		
	Documents				
2	Clause 2.1 - Checking of documents F:..... V:..... T:.....		Item		
3	Clause 2.2 - Provisional bills of quantities F:..... V:..... T:.....		Item		
4	Clause 2.3 - Availability of construction documentation F:..... V:..... T:.....		Item		
	Previous work and adjoining properties				
5	Clause 3.1 - Previous work - dimensional accuracy F:..... V:..... T:.....		Item		
6	Clause 3.2 - Previous work - defects F:..... V:..... T:.....		Item		
7	Clause 3.3 - Inspection of adjoining properties F:..... V:..... T:.....		Item		
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	Samples, shop drawings and manufacturer's instructions			
1	Clause 4.1 - Samples of materials F:..... V:..... T:.....	Item		
2	Clause 4.2 - Workmanship samples F:..... V:..... T:.....	Item		
3	Clause 4.3 - Shop drawings F:..... V:..... T:.....	Item		
4	Clause 4.4 - Compliance with manufacturer's instructions F:..... V:..... T:.....	Item		
	Deposits and fees			
5	Clause 5.1 - Deposits and fees F:..... V:..... T:.....	Item		
	Temporary services			
6	Clause 6.1 - Water F:..... V:..... T:.....	Item		
7	Clause 6.2 - Electricity F:..... V:..... T:.....	Item		
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1	Clause 6.3 - Telecommunication facilities F:..... V:..... T:.....	Item			
2	Clause 6.4 - Ablution facilities F:..... V:..... T:.....	Item			
	Prime cost amounts				
3	Clause 7.1 - Responsibility for prime cost amounts F:..... V:..... T:.....	Item			
	Special attendance on n/s subcontractors				
4	Clause 8.1 - Special attendance F:..... V:..... T:.....	Item			
	General				
5	Clause 9.1 - Protection of the works F:..... V:..... T:.....	Item			
6	Clause 9.2 - Protection/isolation of existing/sectionally occupied works F:..... V:..... T:.....	Item			
7	Clause 9.3 - Security of the works F:..... V:..... T:.....	Item			
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1	Clause 9.4 - Notice before covering work F:..... V:..... T:.....	Item			
2	Clause 9.5 - Disturbance F:..... V:..... T:.....	Item			
3	Clause 9.6 - Environmental disturbance F:..... V:..... T:	Item			
4	Clause 9.7 - Works cleaning and clearing F:..... V:..... T:.....	Item			
5	Clause 9.8 - Vermin F:..... V:..... T:.....	Item			
6	Clause 9.9 - Overhand work F:..... V:..... T:.....	Item			

Schedule of variables

Information necessary for elections and completion of those clauses contained in the schedule which are necessary for tender purposes is given hereunder. Where no information is given it shall mean that no specific requirements are expected or that the clause is not relevant to this specific contract

10.1 - Provisional bills of quantities [clause 2.2]

The quantities are provisional **Yes**

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10.2 - Availability of construction documentation [clause 2.3]

Construction documentation is complete **Yes**

10.3 - Previous work - dimensional accuracy [clause 3.1]

The contractor is responsible for ensuring the dimensional accuracy and integrity of each building and must satisfy himself as to opening sizes, etc before ordering components

10.4 - Previous work - defects [clause 3.2] N/A

10.5 - Inspection of adjoining properties [clause 3.3] N/A

10.6 - Water [clause 7.2]

Option A (by contractor) Yes

Option B (by employer - free of charge) No

Option C (by employer - metered) No

10.7 - Electricity [clause 7.3]

Option A (by contractor) Yes

Option B (by employer - free of charge) No

Option C (by employer - metered) No

10.8 - Telecommunications [clause 7.4]

Telephone Yes

Facsimile No

E-mail No

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10.9 - Ablution facilities [clause 7.5]

Option A (by contractor) Yes

Option B (by employer) No

10.10 - Protection of the works [clause 9.1]

The contractor shall provide, erect, alter as necessary, maintain, remove and make good on completion of the works, suitable hoardings or temporary fencing as necessary for the enclosure of the works and protection of the public, to the satisfaction of the Principal Agent

10.11 - Protection/isolation of existing/sectionally occupied works [clause 9.2]

Protection/isolation is required Yes

10.12 - Disturbance [clause 9.5]

The contractor shall execute the works with as little noise and disturbance as possible to adjoining premises and occupants thereof; he shall keep the site, structures, etc well watered during operations to prevent dust and shall provide, erect and remove on completion of the works, all necessary temporary dust screens, to the satisfaction of the Principal Agent

10.13 - Environmental disturbance [clause 9.6]

No specific requirements

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SECTION C - SPECIFIC PRELIMINARIES

1 **Site instructions**

Instructions issued on site are to be recorded in triplicate in a site instruction book which is to be maintained on site by the contractor

F:..... V:.....
T:..... Item

2 **Warranties for material and workmanship**

Where warranties for materials and/or workmanship are called for, the contractor shall obtain a written warranty, addressed to the employer, from the firm supplying the materials and/or doing the work and shall deliver same to the principal agent on the certified completion of the contract. The warranty shall state that workmanship, materials and installation are warranted for a specified period from the date of final completion and that any defects that may arise during the specified period shall be made good at the expense of the firm supplying the materials and/or doing the work, upon written notice to do so. The warranty will not be enforced if the work is damaged by defects in the construction of the building in which case the responsibility for replacement shall rest entirely with the contractor

F:.....V:.....T:..... Item

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Section 1
PRELIMINARIES
Bill No. 1
PRELIMINARIES

Ga-Phasha Skills Centre

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1	**Co-operation of contractor for cost management** It is specifically agreed that the contractor accepts the obligation of assisting the principal agent in implementing proper cost management. The contractor will be advised by the principal agent of all cost management procedures which will be implemented to ensure that the final building cost does not exceed the budget. The principal agent undertakes to make available to the contractor all budgetary allowances and cost assessments/reports to enable the proper procedure to be implemented and the contractor shall attend all cost plan review and cost management meetings. The contractor undertakes to extend these procedures, as necessary, to all subcontractors F:.....V:.....T:.....	Item			
2	**Propping of floors below** The contractor is advised that propping of floors below may be required if he wishes to use any areas of completed suspended reinforced concrete slabs for vehicle access, storage of materials and goods and location of plant, scaffolding, etc. The location of these areas and any necessary propping shall be approved by the principal agent and the cost thereof shall be borne by the contractor F:..... V:..... T:.....	Item			
3	**Testing of windows for water tightness** Each window shall be tested for water tightness with water sprayed on using adequate pressure. If in the opinion of the principal agent, the pressure proves to be inadequate, then the pressure shall be boosted by means of compressed air or other approved means F:..... V:..... T:.....	Item			
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Section 1
PRELIMINARIES
Bill No. 1
PRELIMINARIES

Ga-Phasha Skills Centre

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1	**Testing of flat roof waterproofing for water tightness** Flat roof waterproof areas shall be prepared with small sand dykes around them of a size and enclosing an area approved by the principal agent, flooded with water and kept "ponded" for at least 36 hours as a test to ensure the water tightness of the waterproofing and before any further construction work is carried out above the waterproofing F:..... V:..... T:.....	Item			
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Section 1
PRELIMINARIES
Bill No. 1
PRELIMINARIES

Ga-Phasha Skills Centre

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1	**OCCUPATIONAL HEALTH AND SAFETY ACT** The **contractor** shall comply with all the requirements set out in the Construction Regulations, 2014 issued under the Occupational Health and Safety Act, 1993 (Act No 85 of 1993) and all amendments and revisions. It is required of the **contractor** to thoroughly study the Health and Safety Specification that must be read together with and is deemed to be incorporated under this Section of the **bills of quantities / lump sum document** The **contractor** must take note that compliance with the Occupational Health and Safety Act, Construction Regulations (as amended) and Health and Safety Specification is compulsory. In the event of partial or total non-compliance, the **principal agent,** notwithstanding the provisions of clause A31.0 of Section A or any other clause to the contrary, reserves the right to delay issuing any progress **payment certificate** until the **contractor** provides satisfactory proof of compliance. The **contractor** shall not be entitled to any compensation of whatsoever nature, including interest, due to such delay of payment. Provision for pricing of the Occupational Health and Safety Act, Construction Regulations and Health and Safety Specification is made under this clause and it is explicitly pointed out that all requirements of the aforementioned are deemed to be priced hereunder and no additional claims in this regard shall be entertained Fixed:_____ Value related:_____ Time related:_____		Item		
2	<u>COMMUNITY LIAISON OFFICER (CLO)</u> Provide the sum of R54 000.00 (Fifty-four Thousand Rand only) for payment of CLO for duration of the contract		Item		
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Section 1
PRELIMINARIES
Bill No. 1
PRELIMINARIES

Ga-Phasha Skills Centre

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SUMMARY OF CATEGORIES

Category : Fixed R.....

Category : Value R.....

Category : Time R.....

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Section 1

Bill No. 1

PRELIMINARIES

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Bill No. 1

PRELIMINARIES

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SECTION 2

BILL No. 1

FOUNDATIONS (PROVISIONAL)

GENERAL PREAMBLES

Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill

NOTE IN RESPECT OF REMEASUREMENT OF FOUNDATIONS

Foundation brickwork and concrete walls have been measured to top of unfinished floor level

_____

EARTHWORKS

NOTE

All excavations are measured as being in "earth" and/or filling compacted to 95% modified AASHTO density

Descriptions of excavations shall be deemed to include for setting aside surplus excavated material in spoil heaps for use as filling, or for depositing within 150m of the perimeter of the excavations and spreading and roughly levelling as directed, as well as for increase in bulk and multiple handling of excavated material caused by the Contractor's method of operation

Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site and for bulking

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Section 2
SKILLS CENTRE
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Foundations (Provisional)

Ga-Phasha Skills Centre

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	Working space for formwork to sides of all concrete, except columns, shall be measured only where the concrete face is less than 750mm from the face of the measured excavations Working space for formwork to sides of columns shall be measured for the width of the column face only where both: the top of the column base is more than 1,5m below the commencing level of the excavations and the column face is less than 500mm from the face of the measured excavations No claim shall be considered for any working space for formwork to concrete other than as above described or for working space beyond the sides of trench excavations for the building of brick or block walls Descriptions of excavations for working space shall be deemed to include for any additional risk of collapse so incurred and for the returning and compacting of the excavated material as described _____				
	Excavations				
	Excavate in earth not exceeding 2m deep below natural, elevated or reduced ground level for				
1	Trenches	m3	79		
2	Holes	m3	1		
	(End of excavations in earth)				
3	Extra over all excavations for carting away surplus material from excavations and/or from stockpiles on site to a dumping site to be located by the Contractor	m3	79		
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Section 2
SKILLS CENTRE
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Foundations (Provisional)

Ga-Phasha Skills Centre

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1	Risk of collapse of sides of reduced level excavations from natural, elevated or reduced ground level to not exceeding 1,5m deep	m2	314		
2	Allow for keeping excavations free of all water other than subterranean water		Item		
	Filling, etc.				
3	150mm Thick Rip & Re-compact insitu material to 98% MOD.AASHTO at OMC	m3	120		
4	150mm Thick G5 Layer compacted to 98% MOD.AASHTO at OMC	m3	239		
	Tests				
5	Tests to determine the degree of compaction, etc. of ground or filling	No	4		
	Protection against termites				
6	Poisoning surface of ground in bottoms of trenches, bases, etc.	m2	408		
7	Poisoning surface of ground or filling under floors, steps, etc. including raking out 75mm deep V-shaped channels against the walls, etc. treating with poison solution, backfilling and ramming	m2	797		
	CONCRETE				
	Concrete test cubes				
8	Prepare set of three 150 x 150 x 150mm concrete strength test cubes, label and send to an approved laboratory for testing, pay all charges and submit report to the Principal Agent. Only successful tests will be paid for (Provisional)	No	4		
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Section 2
SKILLS CENTRE
Bill No. 1
Foundations (Provisional)

Ga-Phasha Skills Centre

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	Reinforced concrete with a coarse aggregate of 19mm and a minimum compressive strength of 25MPa at 28 days				
1	Bases	m3	1		
2	Ground beams	m3	79		
3	In surface beds cast in panels on waterproofing (elsewhere)	m3	108		
	Sundries				
4	Finish top surface of concrete slabs, etc. to a smooth and even power floated surface	m2	636		
	FORMWORK				
	ROUGH FORMWORK (DEGREE OF ACCURACY III)				
	Rough formwork to sides				
5	Rectangular ground beams	m2	314		
	Movement Joints				
6	Movement joint not exceeding 300mm wide formed of 13mm bitumen impregnated soft board placed vertically in position in concrete floor	m	112		
	Saw cut joints				
7	6 x 20mm Saw cut joints in top of concrete	m	92		
	Construction joints				
8	Construction joints	m	69		
	Boxing in rough formwork to form				
9	100 x 100mm Chamfers along top or bottom edges of ground beams perpendicular to the sofit of surface bed.	m	659		
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Section 2
SKILLS CENTRE
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Foundations (Provisional)

Ga-Phasha Skills Centre

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	REINFORCEMENT				
	High tensile steel reinforcement to structural concrete work				
1	16mm Diameter bars	t	2.41		
2	12mm Diameter bars	t	1.40		
	Mesh reinforcement				
3	Mesh reinforcement with mesh reference number 193 laid in surface beds with 300mm wide side and end laps (measured net)	m2	636		
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Section 2
SKILLS CENTRE
Bill No. 1
Foundations (Provisional)

Ga-Phasha Skills Centre

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Foundations (Provisional)

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	BILL No. 2				
	CONCRETE, FORMWORK AND REINFORCEMENT				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	CONCRETE				
	Concrete test cubes				
1	Prepare set of three 150 x 150 x 150mm concrete strength test cubes, label and send to an approved laboratory for testing, pay all charges and submit report to the Principal agent. Only successful tests will be paid for (Provisional)	No	4		
	Mass concrete				
	Mass concrete with a coarse aggregate of 19mm and a minimum compressive strength of 25MPa at 28 days				
2	In ramps	m3	1		
	Reinforced concrete				
	Reinforced concrete with a coarse aggregate of 19mm and a minimum compressive strength of 25MPa at 28 days in				
3	Ring beam	m3	11		
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Section 2
SKILLS CENTRE
Bill No. 2
Concrete, Formwork and Reinforcement

Ga-Phasha Skills Centre

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1	Slabs	m3	11		
	Sundries				
2	Finish raking top surface of concrete slabs, etc. to a smooth and even wood floated surface including additional dry sand/cement mixture added as necessary whilst the concrete is still wet	m2	43		
	FORMWORK				
	Formwork to				
3	Soffit of slabs	m2	43		
4	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	27		
	Smooth formwork to sides and soffits of rectangular beams				
5	Beams propped up exceeding 1.5m and not exceeding 3.5m high	m2	114		
	Movement Joints				
6	Movement joint not exceeding 300mm wide formed of 13mm bitumen impregnated soft board placed vertically in position in concrete floor	m	89		
	Boxing in rough formwork to form				
7	100 x 100mm Chamfers along top or bottom edges of ground beams perpendicular to the sofit of surface bed.	m	356		
	REINFORCEMENT				
	High tensile steel bar reinforcement to structural concrete work				
8	16mm Diameter bars	t	0.80		
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Section 2
SKILLS CENTRE
Bill No. 2
Concrete, Formwork and Reinforcement

Ga-Phasha Skills Centre

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1	12mm Diameter bars	t	4.19		
	Mesh reinforcement				
2	Mesh reinforcement with mesh reference number 193 laid in surface beds with 300mm wide side and end laps (measured net)	m2	43		
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Section 2
SKILLS CENTRE
Bill No. 2
Concrete, Formwork and Reinforcement

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Section 2

Bill No. 2

Concrete, Formwork and Reinforcement

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Concrete, Formwork and Reinforcement

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	BILL No. 3				
	MASONRY				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Brickwork in burnt clay bricks in (5:1) cement mortar				
1	Piers	m3	7		
2	Half brick wall	m2	123		
3	Half brick wall in beamfilling	m2	27		
4	One brick wall	m2	901		
5	One and a half brick walls	m2	57		
6	285mm Hollow walls of two half brick skins including wire ties	m2	71		
	Brick reinforcement				
7	Brick reinforcement 75mm wide built into brick walls with sufficient laps at end joints, angles and intersections (measured net)	m	483		
8	Brick reinforcement 150mm wide built into brick walls with sufficient laps at end joints, angles and intersections (measured net)	m	3 100		
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Section 2
SKILLS CENTRE
Bill No. 3
Masonry

Ga-Phasha Skills Centre

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	Sundries				
1	Closing 70mm cavities of hollow walls vertically with brickwork one brick wide	m	19		
	Joint forming material in movement joints				
2	38 x 1,6mm Galvanised hoop iron roof tie with one end built six courses deep into top of brickwork and other end wrapped around and nailed to trusses	No	189		
	Nutec Cement/Fibre-cement window cills				
3	Internal window sill 100mm wide	m	83		
4	External window sill 100mm wide set sloping	m	56		
	Prestressed concrete lintels				
5	110 x 75mm Lintels in lengths not exceeding 3m	m	151		
6	110 x 75mm Lintels in lengths exceeding 3m not exceeding 4.5m	m	15		
	FACE BRICKWORK				
	Extra over for face brick: External face bricks pointed with flush horizontal and vertical joints. Firelight Travertine face brick.				
7	Cavity wall 280mm thick consisting of two skins of 110mm brickwork and 50mm wide cavity face brick on both sides	m2	71		
8	230mm brickwork face brickwork.	m2	340		
9	460mm brickwork face brickwork on brick piers	m2	57		
	WINDOW CILLS				
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Section 2
SKILLS CENTRE
Bill No. 3
Masonry

Ga-Phasha Skills Centre

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	Facebrick on edge window sills				
1	Window sill, facebrick on edge	m	90		
	Galvanised hoop iron cramps, ties, etc				
2	50 x 1.5mm Wall tie 605mm long, five times bent along length, with one end shot-pinned to concrete and the other end built into brickwork	No	20		
	PAVING				
	Paving of clay-brick pavers laid with butt joints to stretcher bond pattern on and including 25mm thick river-sand bed with sand & cement mixture swept into joints and hosed down, including weed killer and preparation of ground				
3	Paving to entrance walkway areas, aprons, etc to falls	m2	187		
4	220mm Wide brick-on-flat header course edging on 75mm thick mortar bed	m	120		
5	Fair raking cutting	m	13		
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Section 2
SKILLS CENTRE
Bill No. 3
Masonry

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Section 2

Bill No. 3

Masonry

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	BILL No. 4				
	WATERPROOFING				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	DAMP-PROOFING TO WALLS				
1	375 Micron embossed black polyethylene damp-proof course to walls, cills, etc. (measured net)	m2	63		
	DAMP-PROOFING UNDER FLOORS, ETC.				
	Colour coded polyethylene sheeting complying with SANS 952, Type C in widest practicable widths with all joints lapped and sealed in accordance with the manufacturer's instructions				
2	250 Micron green medium density damp-proof membrane laid loose on top of sand bed (elsewhere) under solid floors with pressure sensitive tape jointing	m2	636		
3	250 Micron green medium density damp-proof membrane laid loose on top of sand bed (elsewhere) to under sides and both sides of ground beams	m2	358		
	WATERPROOFING TO ROOFS, BASEMENTS, ETC				
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Section 2
SKILLS CENTRE
Bill No. 4
Waterproofing

Ga-Phasha Skills Centre

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	Prime with one coat bitumen primer and one layer 4mm fully bonded waterproof membrane comprising two bitumen layers reinforced with woven spun bonded polyester fabric and coated with polyethelene film for heat bonding, laid with 75mm side and 100mm end laps				
1	On soffits of slab	m2	43		
2	On flat roofs	m2	43		
	PROTECTIVE ROOFING PAINT				
	Two coats bituminous aluminium paint				
3	On waterproofing to roofs	m2	43		
4	On waterproofing to box gutters	m2	5		
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Section 2
SKILLS CENTRE
Bill No. 4
Waterproofing

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Section 2

Bill No. 4

Waterproofing

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SECTION 2

BILL No. 5

ROOF COVERINGS, ETC.

GENERAL PREAMBLES

Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill

PROFILED METAL SHEETING AND ACCESSORIES

0.58mm Thick concealed fixing roofing sheets manufactured from roll-formed from certified steel complying with ISQ 550 (3T). The profile shall have three trapezoidal ribs at 203mm centers giving a net cover of 406mm. The rib height shall be 41mm and provide capillary breaks. The male rib shall have spurs at 283mm centers to ensure a positive double interlocking action at side-laps. Each pan shall incorporate two stiffener ribs. Profiled roof sheets to be coated on both sides with "Global Coat" or "Chromadek Colour" and laid on structural timber/steel structure incorporating all necessary accessories such as flashings and eave closers in strict compliance to manufacturer's instructions

Note

The Contractor is to submit a certificate signed by the merchant, stating that the galvanised roof covering supplied complies with the required thickness specified

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Section 2
SKILLS CENTRE
Bill No. 5
Roof Coverings, etc

Ga-Phasha Skills Centre

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	Chromadek roof sheeting 50mm x 50mm purlins on appro. Underlay on prefabricated trusses to specialist details at max 1200mm centre to centre to Engineers details at 5° roof pitch				
1	0,58mm Roof sheeting with pitch not exceeding 25° fixed to timber purlins (elsewhere)	m2	832		
2	0.58mm Sheet iron side wall flashing 370mm girth	m	120		
	ROOF AND WALL INSULATION				
	50mm Thick Approved FBL foll backed aluminium blanket				
3	Insulation blanket laid taut over purlins (at approximately 1000mm centres) and fixed concurrent with roof covering with stapled longitudinal flap joints, including fixing at top and bottom edges to purlins with and including hoop iron straps	m2	832		
	TRANSLUSCENT ROOF SHEETING				
	Chromadek roof sheeting 50mm x 50mm purlins on appro. Underlay on prefabricated trusses to specialist details at max 1200mm centre to centre to Engineers details at 10° roof pitch				
4	Translucent roof sheeting including frame, waterproofed and fixed as per manufacturer's specification , size 6843 x 3000mm Wide.	No	2		
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Section 2
SKILLS CENTRE
Bill No. 5
Roof Coverings, etc

Ga-Phasha Skills Centre

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Section 2

Bill No. 5

Roof Coverings, etc

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SECTION 2

BILL No. 6

CARPENTRY AND JOINERY

GENERAL PREAMBLES

Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill

TIMBER

All softwood to be South African Pine

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Section 2
SKILLS CENTRE
Bill No. 6
Carpentry and Joinery

Ga-Phasha Skills Centre

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DESCRIPTIONS

The term "planted on" shall mean the nailing of one timber member to another

The term "screwed on" shall mean the countersunk screwing of one timber member to another

The term "screwed on and pelleted" shall mean the screwing of one timber member to another with the heads of screws sunk and pelleted

The term "plugged" shall mean the countersunk screwing of a timber member to and including plastic plugs in brickwork or concrete

The term "plugged and pelleted" shall mean the screwing of a timber member to and including plastic plugs in brickwork or concrete with heads of screws sunk and pelleted

Shelving, etc. described as screwed to steel must be fixed from underside and prices are to include for countersunk drilling through the steel for screw fixing

Descriptions of floors, ceilings, joinery, etc. shall be deemed to include for all square cutting

Descriptions of items given in lineal metre shall be deemed to include for mitres, stopped ends, fitted intersections, etc.

Descriptions of rounded angles, rebates, grooves, chamfers, moulded edges, etc. shall be deemed to include for angles, ends, etc.

_____

Prefabricated metal connector plate timber roof trusses

Roofs, etc

Carried to Summary R

Section 2
SKILLS CENTRE
Bill No. 6
Carpentry and Joinery

Ga-Phasha Skills Centre

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Allow for the preparation and submission of the following documents (applicable to ALL roofs), inclusive of Detailed shop drawings indicating truss sizes, truss positions, bracings, etc to be submitted for approval prior to commencement of fabrication,Design certificate indicating the licensed programme used, SANS specifications adhered to, general procedures and loading adopted, sizes and grading of timber components, details, etc.

NOTE:

a. All the roof trusses to be at average 1177mm centres and constructed for a 15 degrees pitch unless otherwise stated

b. All the roof trusses to be designed and constructed with softwood structural timber to include for live loads, wind loads and to take corrugated roof covering, purlins and fibre cement or gypsum plasterboard ceilings with brandering. Each roof truss shall have all its members accurately cut and close butted together and rigidly fixed by CSIR approved patented galvanized metal spiked connectors, fixed on both sides of each intersection by an approved method, all in accordance with the manufacturer's instructions.

c. Unless otherwise described all rafter feet are to extend 770mm beyond the length of the tie beam, with ends twice splay cut

d. The design, manufacture and transportation of the roof trusses, bracing, etc. shall be under the control of a registered Engineer in accordance with SANS 0243 and it shall be required from the manufacturer of the trusses to lodge a written guarantee that his construction has been designed by a qualified Structural Engineer and that he is in possession of a capability certificate issued by the Institute for Timber Construction and approved by the Principal Agent

e. The tenderer's attention is drawn to the fact that the Architect's roof truss drawings only represent the overall size and bearing points of the trusses and not the required design.

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Section 2
SKILLS CENTRE
Bill No. 6
Carpentry and Joinery

Ga-Phasha Skills Centre

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	f. Erection must be carried out as described in "The Erection and Bracing of Timber Roof Trusses" published by the Truss Plate Association of South Africa Ltd. and the National Timber Research Institute, CSIR. g. Descriptions of roof trusses shall be deemed to include for design, manufacture, supply, hoisting and fixing in position, trimming ends, notching, etc. and for any temporary bracing. ----------				
1	Mono pitch roof truss size 17.73m long x 2.4m high	No	10.00		
	Sundry roof timbers				
	Sawn Softwood (Grade 5)				
2	38 x 114mm Wall plate	m	104		
3	50 x 76mm Purlin including additional timber supports at spliced joints	m	1 439		
	Roof sundries				
4	Galvanised mild steel hurricane type fixing clips nailed between rafter and purlin connection (Provisional)	No	200		
	Wood preservative				
5	Two coats wood preservative applied hot on wrought exposed roof timbers	m2	851		
	Fascias and bargeboards				
	Tempered fibre-cement				
6	15 x 225mm Fascia board countersunk screwed to roof timbers (elsewhere) with two brass screws at maximum 1200mm centres and jointed with and including standard aluminium halfround cover strips at all joints	m	47		
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Section 2
SKILLS CENTRE
Bill No. 6
Carpentry and Joinery

Ga-Phasha Skills Centre

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1	15 x 225mm Barge board countersunk screwed to roof timbers (elsewhere) with two brass screws at maximum 1200mm centres and nailed with steel nails into mortar joints at maximum 750mm centres and jointed with and including standard aluminium halfround cover strips at all joints	m	57		
	Doors				
	NOTE All framed and ledged batten doors and combination doors, where battens are utilised, shall only be of construction acceptable to the Department, i.e. mortice and tenon where the tenon is exposed on the outside edges of styles and where the tenon is wedged to form a dovetailed shape				
	40mm Thick flush panel maple veneered door with lightweight core filling				
2	40mm x 0,820 x 2,032m Framed, ledged and braced batten door formed of 40 x 110mm styles and top rail, 20 x 225mm bottom ledge, 20 x 150mm middle ledge and 20 x 110mm diagonal braces, filled in flush one side with 20 x 75mm tongued, grooved and V-jointed both sides vertical boarding fixed in and including grooves in styles and top rail	No	5		
3	40mm x 0,92 x 2,032m Framed, ledged and braced batten door formed of 40 x 110mm styles and top rail, 20 x 225mm bottom ledge, 20 x 150mm middle ledge and 20 x 110mm diagonal braces, filled in flush one side with 20 x 75mm tongued, grooved and V-jointed both sides vertical boarding fixed in and including grooves in styles and top rail	No	5		
	Solid laminated flush panel doors with hardboard face suitable for paint both sides and two wrought Meranti concealed vertical edge strips				
4	40mm x 0,813 x 1,882m Door	No	2		
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SKILLS CENTRE
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Carpentry and Joinery

Ga-Phasha Skills Centre

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1	40mm x 1,613 x 2,032m Double door in two equal leaves hung folding with rebated meeting edges	No	1		

FITTINGS

General

The following cupboard fittings have been measured as complete units i.e. the components of the units have not been separately measured. The descriptions, therefore, of such units shall be deemed to include all components, assembling, housing, notching, glueing, blocking, planting on and screwing with countersunk screws, edge strips, decorative plastic finish, glass, ironmongery, metalwork, paint or varnish finishes, etc (refer Architect's drawings as attached to the back of these Bills of Quantities)

Fittings to Administration Building

	Cupboard: Length 8383mm, 900mm high with Rusternburg Granite worktop with bullnose edge, Windsor Cherry Melamine door fronts with 16mm x 2mm PVC edging strips, 8 Number 128Euro H-011 Alluminium cupboard door pull fitted horizontally with steel self tapper screw and 2 No. Sink 1140mm long stainless steel grade 304 (18/8) on baked enamel steel cupboard with 1 shelf and 3 swing doors as per Architect's drawing				
2	Kitchen cupboard **Length 8383mm, 900mm high** (Provisional)	No	1		

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	Store room shelving with back uprights screwed to wall with three masonry wall plugs, 24mm wrought laminated SA pine shelves in running lenghts, fixed with two selftaping screws per rail. Provide butt joints at center of rail where necessary. 18mm x 76mm SA pine filler piece flush with front of shelf. 18mm x 76mm SA pine filler piece flush with top of shelf, Finish as for shelf. Cut to fit between uprights. Finish as for shelf. Cut to fit between rails as per drawing No: DT 54				
1	Store room shelving, 9500mm length and 2000mm height (Provisional)	No	4		
	Bathroom floor cupboard: Length 2000 x 551 x 900mm high with Rustenburg Granite worktop with bull nose edge, Windsor Cherry Melamine door fronts with 16mm x 2mm PVC edging strips, 8 Number 128Euro H-011 Aluminium cupboard door pull fitted horizontally with steel self tapper screw and 2 No. Sink 1140mm long stainless steel grade 304 (18/8) on baked enamel steel cupboard with 1 shelf and 3 swing doors as per Architect's drawing				
2	Floor cupboard 2 000 x 551 x 900mm high overall comprising tops, bottoms, sides, divisions, shelves, backs, filler panels, doors, ironmongery, finishes, etc all as per architect drawing	No	2		
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SKILLS CENTRE
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Carpentry and Joinery

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Section 2

Bill No. 6

Carpentry and Joinery

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Carpentry and Joinery

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	SECTION 2				
	BILL No. 7				
	CEILINGS, PARTITIONS AND ACCESS FLOORING				
	PREAMBLES				
	For preambles see "Specification of Material and Method to be used PW371"				
	SUPPLEMENTARY PREAMBLES				
	Descriptions:				
	Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins or shot pinned to brickwork or concrete				
	Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres, and where described as "bolted" the bolts have been given elsewhere				
	CEILINGS ETC				
	SUSPENDED CEILINGS				
	1200 x 600 x 6mmThick Fibre cement vinyl clad ceiling boards on pre-painted exposed tee suspension system including main and cross tees, necessary hangers, grids, etc all as per manufacturer's instruction.				
1	Ceilings suspended not exceeding 1m below timber purlins at 2,00m centres.	m2	324		
2	"Shadowline" pre painted cornice, nailed	m	276		
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Section 2
SKILLS CENTRE
Bill No. 7
Ceilings, Partitions and Access Flooring

Ga-Phasha Skills Centre

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Item No			Quantity	Rate	Amount
	SECTION 2				
	BILL No. 8				
	FLOOR COVERINGS, PLASTIC LININGS ETC				
	PREAMBLES				
	For preambles see "Specification of Material and Method to be used PW371"				
	Note : All materials shall be in colours to be selected by the Representative / Agent and, where applicable, laid to approved patterns.				
	SUPPLEMENTARY PREAMBLES				
	Vinyl tiles, sheeting, wall linings, carpets, etc. are to be supplied and laid complete on a cement screed (screed elsewhere) under guarantee by an approved firm of Specialists.				
	Prices for vinyl products are to include for cleaning off tiles on completion and apply three coats waterproof floor dressing in accordance with the Manufacturer's specification.				
	ARTIFICIAL GRASS				
	Artificial grass				
1	Artificial grass	m2	29		
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Item No			Quantity	Rate	Amount
	SECTION 2				
	BILL No. 9				
	IRONMONGERY				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Where ironmongery is described as plugged, prices are to include for screwing to and including approved patent plugs in concrete or brickwork with plaster or tiled finish				
	_____				
	The following ironmongery fixed to doors, etc.				
	Bolts and latches				
1	Roller ball catch for toilet doors and keep fixed to steel	No	6		
2	150mm Satin chrome flush bolt with a short length of brass tubing let into concrete floor as keep	No	6		
	Locks				
	The following locks are to be suitable for master key operation.				
3	Bathroom/WC mortice indicator lock set with satin chrome furniture	No	6		
4	75mm Three lever upright mortice lockset with satin chrome furniture	No	2		
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1	75mm Four lever upright mortice lockset with satin chrome furniture	No	5		
2	Master Key	No	2		
	Door closers				
3	Overhead surface mounted type door closer with aluminium casing	No	7		
	Sundries				
4	38mm Rubber door stop plugged and screwed to wall or floor	No	29		
5	19mm Stainless steel chromium plated towel rail, 600mm long, with end brackets plugged to plastered or tiled wall	No	6		
6	Approved white built-in type medicine cabinet size 380 x 610 x 100mm deep with mirror front and glass shelves and building in in tiled or plastered wall including forming recess in brickwork and making good	No	3		
	Signage				
7	400mm high aluminium signage as per specialist detail		Item		25 000.00
8	Contractor's mark-up @ 3%		Item		750.00
	Artwork				
9	Artwork as per the Architect's specification		Item		15 000.00
10	Contractor's mark-up @ 3%		Item		450.00
	Push and kicking plates				
11	300mm high x 1.2mm thick x 750mm long grade 304 satin finished stainless steel kicking plate.	No	20		
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Section 2
SKILLS CENTRE
Bill No. 9
Ironmongery

Ga-Phasha Skills Centre

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	Indicator plates countersunk holed for and screwed to door or brickwork with chromium plated dome-headed screws				
1	190 x 190 x 3mm Thick white perspex international FB2 sign plate with red fire extinguisher symbol plugged to brickwork	No	2		
2	75 x 150mm Aluminium international toilet sign with MALE and/or FEMALE figure screwed to door	No	5		
3	75 x 150 x Aluminium international toilet sign with paraplegic figure screwed to door.	No	1		
	Kitchen Cupboard Units				
	NOTE The kitchen cupboard units shall be of steel construction with baked enamel finish of approved colour with 18mm interior particle board worktops finished on one side and on edges with 1,2mm standard grade high pressure plastic laminate of approved pattern and colour Adjacent worktops of different units shall be neatly butt-jointed and finished off with matching cover strips and prices are to include for same All doors are to be supplied with standard locks and duplicate keys and prices of units are to include for lockable doors where applicable Prices for sink units are to include for stainless steel sinks with draining boards with single or double sinks, each complete with chromium plated flanged waste fitting, plug and chain Prices for all units are to include for fixing in position to plastered walls and on floors with screed, protecting against injury and cleaning down on completion				
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Section 2
SKILLS CENTRE
Bill No. 9
Ironmongery

Ga-Phasha Skills Centre

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	Floor and sink units				
1	Sink unit 1350mm long with single bowl sink and drainer, one shelf and three doors	No	1		
	Writing boards, Projection screens, etc.				
2	Pull down PVC screen size 2450mm wide x 1420mm high (viewing area 2350 x 1320mm) with wall mounted code SC0400 keystone brackets adjustable set of 2, size 300mm supplied and installed with all necessary accessories	No	2		
	Pinboard size 1800mm W x 1000mm H comprising of laminated soft board core pinning material beaded all round with anodised aluminium channel surround mitred at the corners.To be fitted complete with fixing brackets, screws and wall plugs at 900mm above floor level. Sample to be provided to Architect for Approval				
3	1800 wide x 1000mm high pin board	No	4		
	"Parrot Products"				
4	"BDO452" 1200 x 1200mm Aluminium framed carpet bulletin board	No	4		
	"Clipstrip" or similar and approved				
5	50 x 50 x 3mm Thick anodised aluminium corner protector fixed to walls.	m	70		
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Bill No. 9
Ironmongery

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Section 2

Bill No. 9

Ironmongery

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	BILL No. 10				
	METALWORK				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Mild Steel				
	The following in twelve framed and welded mild steel security gates and fixing in position complete				
1	Single gate size 840mm x 2067mm high overall formed of 40 x 60 x 2mm rectangular hollow section framing all round mitred and welded at angles with two 40 x 6mm flat section horizontal intermediate rails with ends welded to framing and with five 19mm diameter rod vertical bars framed through intermediate rails with ends welded to framing including hinges, locking devices, etc	No	1		
	Hot-dipped galvanised mild steel				
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	Roll up see-thru galvanised and epoxy coated m/s perforated roller shutter for openings up to 2.5mm x 2.1mm. electrically operated with 220 volt hl 600 motor with manual override, with 75 x 1,0mm thick galvanised endlocked slats complete with nylon end locks, 120mm extra wide tamper proof m/s guides, powder coated ancillary components, including door curtain. 4.5mm thick end plates, guide ralls ,closed shaft, extruded aluminium t□bar with astragal rubber weather seal and single spam (no join) galv, cover box, operated with high security key switch. fixed to brick and structural beam over, electrically operated with 220 volt hl 600 motor with manual.				
1	Automated push-up slatted roller shutter for 2500 x 2100mm high opening	No	1		
	NOTE				
	The following are to be hot-dipped galvanised after fabrication of complete units				
	Hot-dipped double spelter galvanised mild steel grab rails formed of 32mm outside diameter x 1,6mm round section rails and 75mm diameter x 3mm flat section fixing flanges each three times holed and bolted to walls with M8 x 50mm expansion bolts				
2	32mm Grab rail 700mm long with two 80mm return ends bolted	No	1		
3	32mm Cranked grab rail 300 x 300 x 300mm with two 80mm return ends bolted	No	1		
	Door frames, Doors, Windows, etc.				
	Galvanised pressed steel door frames				
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	1,2mm Double rebated pressed steel door frames suitable for half brick walls				
1	Door frame for door size 0,761 x 2,134m with two 100mm steel butts without striking plate or opening in frame and prepared for roller catch or closet indicators	No	7		
	1,2mm Double rebated pressed steel door frames suitable for one brick walls				
2	Door frame for door size 0,914 x 2,134m with two 100mm steel butts without striking plate or opening in frame and prepared for roller catch or closet indicators	No	1		
3	Door frame for door size 0,914 x 2,134m with two 100mm steel butts and slotted for lock strike	No	5		
	Aluminium windows				
	Note: Tenderers are referred to architect's drawings numbered A102 annexed to these bills of quantities/accompanying these bills of quantities for tender purposes				
	The given sizes are overall, approximate and in the order of width and height. The detailed drawings and building must be carefully checked for exact sizes before placing orders. Any errors in this respect will be at the Contractor's expense and no claims for any extras in this regard will be entertained				
	Where so described windows shall be provided with burglar bars to opening and fixed sections, consisting of 20 x 5mm galvanised mild steel flat sections to standard NBP2 pattern welded at intersections and to window frame				
	Bars in front of fixed sections to be bent 75mm away from the glass surface				
	ALUMINIUM WINDOWS, DOORS, ETC				
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Section 2
SKILLS CENTRE
Bill No. 10
Metalwork

Ga-Phasha Skills Centre

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	Epoxy powder coated aluminium windows glazed with 6mm laminated safety glass and plugged to brickwork or concrete				
	Aluminium window low E glazing, mm Thick monolithic annealed safety glass to comply with part N of SANS 10400,aluminium frame to be powder coated COLOUR: Charcoal Grey				
1	Purpose made aluminium window size 1400mm x 450mm high overall. **Ref W1**	No	8		
2	Purpose made aluminium window size 3855mm x 2400mm high overall. **Ref W2**	No	1		
3	Purpose made aluminium window size 1285mm x 2400mm high overall. **Ref W3**	No	5		
4	Purpose made aluminium window size 900mm x 1400mm high overall. **Ref W4**	No	10		
5	Purpose made aluminium window size 800mm x 450mm high overall. **Ref W5**	No	6		
6	Purpose made aluminium window size 2485mm x 450mm high overall. **Ref W6**	No	6		
7	Purpose made aluminium window size 2485mm x 450mm high overall. **Ref W7**	No	6		
8	Purpose made aluminium window size 7570mm x 1850mm high overall. **Ref W8**	No	1		
9	Purpose made aluminium window size 2100mm x 2400mm high overall. **Ref W10**	No	1		
	STEEL STRONGROOM DOORS, VENTILATORS, ETC.				
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Section 2
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Metalwork

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	Strongroom doors etc suitable for 230mm walls fixed to brickwork or concrete				
1	Mild steel "AUSTIN" save frame with hinges and fitments and mild steel austin save door complete with fitments and ironmongery as supplied by manufacturer.	No	1		
	ALUMINIUM DOORS				
	Epoxy coated anodised aluminium doors, sidelights and fanlights glazed with 6mm laminated safety glass and plugged to brickwork or concrete				
	Aluminium door low E glazing, mm Thick monolithic annealed safety glass to comply with part N of SANS 10400,aluminium frame to be powder coated COLOUR: Charcoal Grey				
	Aluminium frame section measuring 75mm x 75mm, anodised weather bar strip on all external doors, Including locks as per ironmongery schedule.				
2	Purpose made aluminium door size 900mm x 2400mm high overall. **Ref W9**	No	1		
3	Purpose made aluminium door size 1800mm x 2400mm high overall. **Ref D-1**	No	2		
4	Purpose made aluminium door size 1800mm x 2400mm high overall. **Ref D-3**	No	3		
	Sheerline or equal aluminium door frame as per AAAMSA regulations				
5	Purpose made aluminium door size 900mm x 2100mm high overall. **Ref D-4**	No	4		
	ALUMINIUM SHOPFRONTS				
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SKILLS CENTRE
Bill No. 10
Metalwork

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	Epoxy coated anodised aluminium doors, sidelights and fanlights glazed with 6mm laminated safety glass and plugged to brickwork or concrete **Aluminium door low E glazing, mm Thick monolithic annealed safety glass to comply with part N of SANS 10400,aluminium frame to be powder coated COLOUR: Charcoal Grey** **Aluminium frame section measuring 75mm x 75mm, anodised weather bar strip on all external doors, Including locks as per ironmongery schedule.**				
1	Purpose made aluminium door size 2960mm x 1600mm high overall sliding door. **Ref W11**	No	1		
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Metalwork

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Metalwork

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SECTION 2

BILL No. 11

STRUCTURAL STEELWORK

SUPPLEMENTARY PREAMBLES

Descriptions

Descriptions of bolts shall be deemed to include nuts and washers

Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete

Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete

Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete. Where anchor bolts are described as embedded in sides or soffits of concrete it shall be deemed to include holes through formwork.

Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete.

STEEL COLUMNS AND BEAMS

STRUCTURAL STEEL MEMBERS (GALVANISED)

STANCHIONS / COLUMNS

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Section 2
SKILLS CENTRE
Bill No. 11
Structural steelwork

Ga-Phasha Skills Centre

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	Steel members to include welding, holes, black bolts, nuts, washers, rivets, bolting and riveting integral with structural steelwork.				
	Welded columns in single lengths with flat section base, top, bearer and connection plates bolted to ring beams.				
	219.1 x 6.0mm CHS Circular hollow section columns				
1	Column	t	3.648		
	254mm x 146mm x 31kg/m CH columns				
2	Column	t	0.125		
	203mm x 133mm x 25kg/m CH columns				
3	Column	t	0.145		
	RAFTER				
	203mm x 133mm x 25kg/m CH Rafter				
4	Rafter	t	0.100		
	254mm x 146mm x 31kg/m CH Rafter				
5	Rafter	t	1.010		
	160mm x 82mm x 16kg/m IPE Beam				
6	Beam	t	0.377		
	114 x 4.0mm CHS Circular hollow section beams				
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SKILLS CENTRE
Bill No. 11
Structural steelwork

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	114 X 4.0mm Thick CHS cross members				
1	Steel tube	t	0.216		
	60.3 X 3.5mm Thick CHS cross members				
2	Steel tube	t	0.118		
	PURLING				
	75 x 50 x 20 x 2.5mm Purling				
3	Purling	t	0.271		
	RAFTER BRACING				
	50 X 50 X 5m L Cross bracing				
4	Cross bracing	t	0.288		
	FLATS				
	250 X 16m Thick flat bar				
5	Flats	t	0.365		
	BASE PLATES				
	360mm Dia x 16mm base plate bolted to concrete base				
6	16mm Base plate	t	0.005		
	450 x 300 x 20mm base plate				
7	20mm Base plate	t	0.002		
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Structural steelwork

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	220 x 220 x 12mm base plate				
1	12mm Base plate	t	0.001		
	END PLATES				
	475 x 254 x 20mm end plate				
2	20mm End plate	t	0.010		
	280 x 180 x 10mm end plate				
3	10mm End plate	t	0.002		
	GUSSET PLATES				
	6mm Gusset plate welded				
4	6mm Gusset plate	t	0.040		
	BOLTS				
	4.8 HD bolts (Galvanised)				
5	M16 Hd bolts	No	240.000		
	16mm Diameter G.R. 4.8 bolts welded (Galvanised)				
6	16mm Diameter bolts	No	240.000		
7	Delivery of steel structure to site	t	6.723		
8	Erection of steel structure on ready made footings	t	6.723		
9	Painting of all steel structure components	m2	144		
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Structural steelwork

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Structural steelwork

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	BILL No.12				
	PLASTERING				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Screeds				
	Screeds on concrete				
1	30mm Thick on floors and landings	m2	477		
	Internal Plaster				
	One coat cement plaster on concrete or brickwork				
2	On walls	m2	1 520		
3	On narrow widths	m2	49		
	One coat (3:1) cement plaster finished to a smooth and even steel trowelled surface				
	On concrete				
4	On ceilings	m2	32		
	External Plaster				
	One coat cement plaster on concrete or brickwork				
5	On walls	m2	178		
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SKILLS CENTRE
Bill No. 12
Plastering

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1	On narrow widths	m2	13			

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Section 2
SKILLS CENTRE
Bill No. 12
Plastering

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Section 2

Bill No. 12

Plastering

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	BILL No. 13				
	TILING				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Wall Tiling				
	198 x 198 x 6mm White glazed ceramic wall tiles fixed with an approved adhesive to plaster (plaster elsewhere) and with jointing compound				
1	To walls	m2	349		
	Floor Tiling				
	300 x 300mm x 9mm Full body porcelain tiles in matt finish laid to approved pattern using approved adhesive and grout, colour and pattern to architect's approval. The tenderer to allow an amount of R160.00 per square meter (exclusive of VAT) for the supply of tiles only and include for all waste, labour and profit in the applicable "rate"				
2	On floors	m2	477		
3	Cut tile skirting 100mm high	m	349		
	ALUMINIUM TRIMS				
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Section 2
SKILLS CENTRE
Bill No. 13
Tiling

Ga-Phasha Skills Centre

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	"M-trim" or "Genesis"12mm silver anodised aluminium straight edge trim to suit tile thickness with grey grout.				
1	On walls	m	71		
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SKILLS CENTRE
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Tiling

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Tiling

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	SECTION 2				
	BILL No. 14				
	PLUMBING AND DRAINAGE (PROVISIONAL)				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Gutters, downpipes, etc.				
	0,6mm Galvanised sheet iron Class Z 275				
1	200 x 200mm Box rain water downpipe encased inside brick wall	m	6		
	Sanitary Fittings				
2	560 x 405mm White vitreous china wash hand basin complete with and including one chromium plated pillar tap, one tap hole plug, waste, plug and chain and concealed brackets	No	5		
3	560 x 405mm White vitreous china wash hand basin complete with and including one chromium plated elbow action pillar tap, one tap hole plug, waste, plug and chain and concealed brackets	No	1		
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Section 2
SKILLS CENTRE
Bill No. 14
Plumbing and Drainaige (Provisional)

Ga-Phasha Skills Centre

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1	610 x 385mm White vitreous china wall urinal with top flush entry complete with and including concealed wall hangers, chromium plated waste outlet and grating, and 4,5 litre white vitreous china cistern complete with valveless syphonic fitting, ball valve, bracket, surface mounted chromium plated push button user control valve with plastic conduit pipe and chromium plated flush pipe with spreader	No	2		
2	WC suite comprising white vitreous china pan with P trap, 9 litre low-level white vitreous china cistern complete with valveless syphonic fitting, ball valve and matching flush pipe and heavy duty white single flap seat	No	5		
3	WC suite comprising of white vitreous china paraplegic 90 degrees outlet pan with P trap, 9 litre low level matching vitreous china cistern complete with valveless syphonic fitting, ball valve and matching flush pipe and heavy duty white single flap seat.	No	1		
	Taps, valves,etc				
	Traps, etc. including joints to steel pipes and/or fittings unless otherwise described				
4	32-40mm Butyl rubber deep seal P or S trap	No	7		
5	40-40mm Chromium plated bottle trap	No	3		
	Valves, etc. including joints to steel pipes and/or fittings unless otherwise described				
6	15mm Copper service pipe 350mm girth	No	7		
7	15mm Chromium plated full way ballcock shut-off control valve with screw type control	No	7		
8	15mm Sink mixer with waste union	No	7		
	Sanitary Plumbing				
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Section 2
SKILLS CENTRE
Bill No. 14
Plumbing and Drainaige (Provisional)

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	uPVC pipes and fittings				
1	50mm Pipe laid in/under floors or fixed to walls, roof timbers, etc.	m	38		
2	100mm Pipe laid in/under floors or fixed to walls, roof timbers, etc.	m	52		
	Extra over uPVC pipes for fittings				
3	100 x 50mm Reducer	No	2		
4	100mm Bend	No	8		
5	100mm Junction	No	4		
6	100mm Pan connector	No	5		
7	100mm VP stub stack fitting with ABC cleaning eye lid and multiple connections for 50mm waste	No	2		
8	100mm Access bend	No	2		
9	100mm Access bend with anti-syphon horn	No	2		
10	100mm Access junction	No	2		
11	100mm Access reducing junction	No	2		
12	Two way PVC vent valve suitable for 50mm pipe	No	2		
	Galvanised mild steel screwed and socketed pipes and fittings				
13	50mm Pipe and excavation not exceeding 1m deep	m	30		
14	50mm Pipe laid in/under floors or fixed to walls, roof timbers, etc.	m	15		
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	Extra over galvanised mild steel pipes for galvanised mild steel fittings				
1	50mm Bend	No	6		
2	50mm Bush	No	4		
	Extra over galvanised mild steel pipes for brass fittings				
3	50mm Bend	No	4		
4	50mm Bend with cleaning eye	No	2		
5	50mm Junction with cleaning eye	No	2		
6	50mm Reducing junction with cleaning eye	No	1		
	Sundries				
7	Wire balloon grating in top of pipe not exceeding 100mm diameter	No	2		
	Water Supply				
	Class O thin wall hard drawn copper pipes and fittings with capillary soldered type connections				
8	15mm Pipe laid in/under floors or fixed to walls, roof timbers, etc.	m	22		
9	15mm Pipe fixed in and including chase in walls	m	28		
	Extra over class O copper pipes for soldered capillary fittings				
10	15mm Fittings	No	40		
	Electric water heaters				
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SKILLS CENTRE
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	"Kwikot" or similar approved				
1	150 Litre horizontal wall mounted electric water heater	No	1		
	Testing				
2	Provide all necessary apparatus, water, etc. for and test the whole of the Sanitary Plumbing and Water Supply installation to the satisfaction of the Representative/Agent and the Local Authority, rectify all defective work free of charge and leave in perfect order		Item		
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Bill No. 14

Plumbing and Drainaige (Provisional)

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	BILL No. 15				
	GLAZING				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Mirrors				
	NOTE				
	Mirrors shall be of 6mm thick silvered GG quality polished float glass with rounded and polished edges and splayed corners				
	Unless otherwise described, mirrors shall have four holes for and be screwed to and including approved patent plugs in plastered or tiled wall with countersunk steel screws tap-threaded for and including screw type chromium plated dome-headed caps and felt washers				
	_____				
1	Mirror size 450 x 600mm	No	6		
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	BILL No. 16				
	PAINTWORK				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Paint on plaster, etc.				
	Two coats Plascon professional superior low sheen (PEM 1000) or Dulux weather guard ultra smooth adhesion promoted (D62) acrylic paint.				
1	On internal plastered walls	m2	1 110		
2	On external plastered walls	m2	178		
3	On internal plastered ceilings	m2	32		
	Paint on metal				
	Prepare, touch up factory primer and apply one coat universal undercoat and two full coats high gloss enamel paint				
4	On pressed steel door frames	m2	33		
	Prepare and apply one coat zinc phosphate alkyd resin primer, one coat universal undercoat and two full coats high gloss enamel paint				
5	On grille gates and screens (both sides measured on flat)	m2	4		
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SKILLS CENTRE
Bill No. 16
Paintwork

Ga-Phasha Skills Centre

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	Paint on wood				
	Prepare, stop and apply three full coats polyurethane clear eggshell varnish, lightly sanded down between coats				
1	On general surfaces	m2	44		
	Prepare and apply one coat hardboard primer, one coat universal undercoat and two full coats high gloss enamel paint				
2	On general surfaces	m2	8		
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Paintwork

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Bill No. 16

Paintwork

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SKILLS CENTRE

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SECTION 3

BILL No. 1

FOUNDATIONS (PROVISIONAL)

GENERAL PREAMBLES

Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill

NOTE IN RESPECT OF REMEASUREMENT OF FOUNDATIONS

Foundation brickwork and concrete walls have been measured to top of unfinished floor level

_____

EARTHWORKS

NOTE

All excavations are measured as being in "earth" and/or filling compacted to 95% modified AASHTO density

Descriptions of excavations shall be deemed to include for setting aside surplus excavated material in spoil heaps for use as filling, or for depositing within 150m of the perimeter of the excavations and spreading and roughly levelling as directed, as well as for increase in bulk and multiple handling of excavated material caused by the Contractor's method of operation

Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site and for bulking

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Bill No. 1
Foundations (Provisional)

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	Working space for formwork to sides of all concrete, except columns, shall be measured only where the concrete face is less than 750mm from the face of the measured excavations Working space for formwork to sides of columns shall be measured for the width of the column face only where both: the top of the column base is more than 1,5m below the commencing level of the excavations and the column face is less than 500mm from the face of the measured excavations No claim shall be considered for any working space for formwork to concrete other than as above described or for working space beyond the sides of trench excavations for the building of brick or block walls Descriptions of excavations for working space shall be deemed to include for any additional risk of collapse so incurred and for the returning and compacting of the excavated material as described _____				
	Excavations				
	Excavate in earth not exceeding 2m deep below natural, elevated or reduced ground level for				
1	Trenches	m3	17		
2	Holes	m3	2		
	(End of excavations in earth)				
3	Extra over all excavations for carting away surplus material from excavations and/or from stockpiles on site to a dumping site to be located by the Contractor	m3	19		
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Foundations (Provisional)

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1	Risk of collapse of sides of reduced level excavations from natural, elevated or reduced ground level to not exceeding 1,5m deep	m2	72		
2	Allow for keeping excavations free of all water other than subterranean water		Item		
	Filling, etc.				
3	150mm Thick Rip & Re-compact insitu material to 98% MOD.AASHTO at OMC	m3	28		
4	150mm Thick G5 Layer compacted to 98% MOD.AASHTO at OMC	m3	56		
	Tests				
5	Tests to determine the degree of compaction, etc. of ground or filling	No	4		
	Protection against termites				
6	Poisoning surface of ground in bottoms of trenches, bases, etc.	m2	104		
7	Poisoning surface of ground or filling under floors, steps, etc. including raking out 75mm deep V-shaped channels against the walls, etc. treating with poison solution, backfilling and ramming	m2	113		
	CONCRETE				
	Concrete test cubes				
8	Prepare set of three 150 x 150 x 150mm concrete strength test cubes, label and send to an approved laboratory for testing, pay all charges and submit report to the Principal Agent. Only successful tests will be paid for (Provisional)	No	4		
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Bill No. 1
Foundations (Provisional)

Ga-Phasha Skills Centre

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	Reinforced concrete with a coarse aggregate of 19mm and a minimum compressive strength of 25MPa at 28 days				
1	Bases	m3	2		
2	Ground beams	m3	13		
3	In surface beds cast in panels on waterproofing (elsewhere)	m3	19		
	Sundries				
4	Finish top surface of concrete slabs, etc. to a smooth and even power floated surface	m2	113		
	FORMWORK				
	ROUGH FORMWORK (DEGREE OF ACCURACY III)				
	Rough formwork to sides				
5	Rectangular ground beams	m2	68		
	Movement Joints				
6	Movement joint not exceeding 300mm wide formed of 13mm bitumen impregnated soft board placed vertically in position in concrete floor	m	42		
	Saw cut joints				
7	6 x 20mm Saw cut joints in top of concrete	m	24		
	Construction joints				
8	Construction joints	m	42		
	Boxing in rough formwork to form				
9	100 x 100mm Chamfers along top or bottom edges of ground beams perpendicular to the sofit of surface bed.	m	219		
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Foundations (Provisional)

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	REINFORCEMENT				
	High tensile steel reinforcement to structural concrete work				
1	16mm Diameter bars	t	1.50		
2	12mm Diameter bars	t	1.50		
	Mesh reinforcement				
3	Mesh reinforcement with mesh reference number 193 laid in surface beds with 300mm wide side and end laps (measured net)	m2	113		
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Foundations (Provisional)

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Bill No. 1

Foundations (Provisional)

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	BILL No. 2				
	CONCRETE, FORMWORK AND REINFORCEMENT				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	CONCRETE				
	Concrete test cubes				
1	Prepare set of three 150 x 150 x 150mm concrete strength test cubes, label and send to an approved laboratory for testing, pay all charges and submit report to the Principal agent. Only successful tests will be paid for (Provisional)	No	4		
	Mass concrete				
	Mass concrete with a coarse aggregate of 19mm and a minimum compressive strength of 25MPa at 28 days				
2	In ramps	m3	1		
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	BILL No. 3				
	MASONRY				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Brickwork in burnt clay bricks in (5:1) cement mortar				
1	Piers	m3	15		
2	Half brick wall in beamfilling	m2	12		
3	One brick wall	m2	188		
	Brick reinforcement				
4	Brick reinforcement 150mm wide built into brick walls with sufficient laps at end joints, angles and intersections (measured net)	m	819		
	Joint forming material in movement joints				
5	38 x 1,6mm Galvanised hoop iron roof tie with one end built six courses deep into top of brickwork and other end wrapped around and nailed to trusses	No	130		
	Nutec Cement/Fibre-cement window cills				
6	Internal window sill 100mm wide	m	4		
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Section 3
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Bill No. 3
Masonry

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	Prestressed concrete lintels				
1	110 x 75mm Lintels in lengths not exceeding 3m	m	8		
2	110 x 75mm Lintels in lengths exceeding 3m not exceeding 4.5m	m	28		
	FACE BRICKWORK				
	Extra over for face brick: External face bricks pointed with flush horizontal and vertical joints. Firelight Travertine face brick.				
3	230mm brickwork face brickwork.	m2	48		
	WINDOW CILLS				
	Facebrick on edge window sills				
4	Window sill, facebrick on edge	m	4		
	PAVING				
	Paving of clay-brick pavers laid with butt joints to stretcher bond pattern on and including 25mm thick river-sand bed with sand & cement mixture swept into joints and hosed down, including weed killer and preparation of ground				
5	Paving to entrance walkway areas, aprons, etc to falls	m2	66		
6	220mm Wide brick-on-flat header course edging on 75mm thick mortar bed	m	44		
7	Fair raking cutting	m	44		
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Bill No. 3
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Masonry

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	BILL No. 4				
	WATERPROOFING				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	DAMP-PROOFING TO WALLS				
1	375 Micron embossed black polyethylene damp-proof course to walls, cills, etc. (measured net)	m2	113		
	DAMP-PROOFING UNDER FLOORS, ETC.				
	Colour coded polyethylene sheeting complying with SANS 952, Type C in widest practicable widths with all joints lapped and sealed in accordance with the manufacturer's instructions				
2	250 Micron green medium density damp-proof membrane laid loose on top of sand bed (elsewhere) under solid floors with pressure sensitive tape jointing	m2	113		
3	250 Micron green medium density damp-proof membrane laid loose on top of sand bed (elsewhere) to under sides and both sides of ground beams	m2	104		
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BILL No. 5

ROOF COVERINGS, ETC.

GENERAL PREAMBLES

Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill

PROFILED METAL SHEETING AND ACCESSORIES

0.58mm Thick concealed fixing roofing sheets manufactured from roll-formed from certified steel complying with ISQ 550 (3T). The profile shall have three trapezoidal ribs at 203mm centers giving a net cover of 406mm. The rib height shall be 41mm and provide capillary breaks. The male rib shall have spurs at 283mm centers to ensure a positive double interlocking action at side-laps. Each pan shall incorporate two stiffener ribs. Profiled roof sheets to be coated on both sides with "Global Coat" or "Chromadek Colour" and laid on structural timber/steel structure incorporating all necessary accessories such as flashings and eave closers in strict compliance to manufacturer's instructions

Note

The Contractor is to submit a certificate signed by the merchant, stating that the galvanised roof covering supplied complies with the required thickness specified

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Bill No. 5
Roof Coverings, etc

Ga-Phasha Skills Centre

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	Chromadek roof sheeting 50mm x 50mm purlins on appro. Underlay on prefabricated trusses to specialist details at max 1200mm centre to centre to Engineers details at 5° roof pitch				
1	0,58mm Roof sheeting with pitch not exceeding 25° fixed to timber purlins (elsewhere)	m2	142		
2	0.58mm Sheet iron side wall flashing 370mm girth	m	49		
	ROOF AND WALL INSULATION				
	50mm Thick Approved FBL foll backed aluminium blanket				
3	Insulation blanket laid taut over purlins (at approximately 1000mm centres) and fixed concurrent with roof covering with stapled longitudinal flap joints, including fixing at top and bottom edges to purlins with and including hoop iron straps	m2	142		
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Roof Coverings, etc

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Bill No. 5

Roof Coverings, etc

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Roof Coverings, etc

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SECTION 3

BILL No. 6

CARPENTRY AND JOINERY

GENERAL PREAMBLES

Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill

TIMBER

All softwood to be South African Pine

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Section 3
SIMULATION ROOM
Bill No. 6
Carpentry and Joinery

Ga-Phasha Skills Centre

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DESCRIPTIONS

The term "planted on" shall mean the nailing of one timber member to another

The term "screwed on" shall mean the countersunk screwing of one timber member to another

The term "screwed on and pelleted" shall mean the screwing of one timber member to another with the heads of screws sunk and pelleted

The term "plugged" shall mean the countersunk screwing of a timber member to and including plastic plugs in brickwork or concrete

The term "plugged and pelleted" shall mean the screwing of a timber member to and including plastic plugs in brickwork or concrete with heads of screws sunk and pelleted

Shelving, etc. described as screwed to steel must be fixed from underside and prices are to include for countersunk drilling through the steel for screw fixing

Descriptions of floors, ceilings, joinery, etc. shall be deemed to include for all square cutting

Descriptions of items given in lineal metre shall be deemed to include for mitres, stopped ends, fitted intersections, etc.

Descriptions of rounded angles, rebates, grooves, chamfers, moulded edges, etc. shall be deemed to include for angles, ends, etc.

_____

Prefabricated metal connector plate timber roof trusses

Roofs, etc

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Section 3
SIMULATION ROOM
Bill No. 6
Carpentry and Joinery

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Allow for the preparation and submission of the following documents (applicable to ALL roofs), inclusive of Detailed shop drawings indicating truss sizes, truss positions, bracings, etc to be submitted for approval prior to commencement of fabrication,Design certificate indicating the licensed programme used, SANS specifications adhered to, general procedures and loading adopted, sizes and grading of timber components, details, etc.

NOTE:

a. All the roof trusses to be at average 1177mm centres and constructed for a 15 degrees pitch unless otherwise stated

b. All the roof trusses to be designed and constructed with softwood structural timber to include for live loads, wind loads and to take corrugated roof covering, purlins and fibre cement or gypsum plasterboard ceilings with brandering. Each roof truss shall have all its members accurately cut and close butted together and rigidly fixed by CSIR approved patented galvanized metal spiked connectors, fixed on both sides of each intersection by an approved method, all in accordance with the manufacturer's instructions.

c. Unless otherwise described all rafter feet are to extend 770mm beyond the length of the tie beam, with ends twice splay cut

d. The design, manufacture and transportation of the roof trusses, bracing, etc. shall be under the control of a registered Engineer in accordance with SANS 0243 and it shall be required from the manufacturer of the trusses to lodge a written guarantee that his construction has been designed by a qualified Structural Engineer and that he is in possession of a capability certificate issued by the Institute for Timber Construction and approved by the Principal Agent

e. The tenderer's attention is drawn to the fact that the Architect's roof truss drawings only represent the overall size and bearing points of the trusses and not the required design.

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SIMULATION ROOM
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Carpentry and Joinery

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	f. Erection must be carried out as described in "The Erection and Bracing of Timber Roof Trusses" published by the Truss Plate Association of South Africa Ltd. and the National Timber Research Institute, CSIR. g. Descriptions of roof trusses shall be deemed to include for design, manufacture, supply, hoisting and fixing in position, trimming ends, notching, etc. and for any temporary bracing. ----------				
1	Mono pitch roof truss size 9.484m long x 2.4m high	No	5.00		
	Sundry roof timbers				
	Sawn Softwood (Grade 5)				
2	38 x 114mm Wall plate	m	44		
3	50 x 76mm Purlin including additional timber supports at spliced joints	m	32		
	Roof sundries				
4	Galvanised mild steel hurricane type fixing clips nailed between rafter and purlin connection (Provisional)	No	50		
	Wood preservative				
5	Two coats wood preservative applied hot on wrought exposed roof timbers	m2	228		
	Fascias and bargeboards				
	Tempered fibre-cement				
6	15 x 225mm Fascia board countersunk screwed to roof timbers (elsewhere) with two brass screws at maximum 1200mm centres and jointed with and including standard aluminium halfround cover strips at all joints	m	30		
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Section 3
SIMULATION ROOM
Bill No. 6
Carpentry and Joinery

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1	15 x 225mm Barge board countersunk screwed to roof timbers (elsewhere) with two brass screws at maximum 1200mm centres and nailed with steel nails into mortar joints at maximum 750mm centres and jointed with and including standard aluminium halfround cover strips at all joints	m	19		
	FITTINGS				
	General				
	The following cupboard fittings have been measured as complete units i.e. the components of the units have not been separately measured. The descriptions, therefore, of such units shall be deemed to include all components, assembling, housing, notching, glueing, blocking, planting on and screwing with countersunk screws, edge strips, decorative plastic finish, glass, ironmongery, metalwork, paint or varnish finishes, etc (refer Architect's drawings as attached to the back of these Bills of Quantities)				
	Fittings to Administration Building				
	Cupboard: Length 8383mm, 900mm high with Rusternburg Granite worktop with bullnose edge, Windsor Cherry Melamine door fronts with 16mm x 2mm PVC edging strips, 8 Number 128Euro H-011 Alluminium cupboard door pull fitted horizontally with steel self tapper screw and 2 No. Sink 1140mm long stainless steel grade 304 (18/8) on baked enamel steel cupboard with 1 shelf and 3 swing doors as per Architect's drawing				
2	Kitchen cupboard **Length 8383mm, 900mm high** (Provisional)	No	1		
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	Store room shelving with back uprights screwed to wall with three masonry wall plugs, 24mm wrought laminated SA pine shelves in running lenghts, fixed with two selftaping screws per rail. Provide butt joints at center of rail where necessary. 18mm x 76mm SA pine filler piece flush with front of shelf. 18mm x 76mm SA pine filler piece flush with top of shelf, Finish as for shelf. Cut to fit between uprights. Finish as for shelf. Cut to fit between rails as per drawing No: DT 54				
1	Store room shelving, 1400mm length and 2000mm height (Provisional)	No	4		
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SIMULATION ROOM
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Carpentry and Joinery

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Bill No. 6

Carpentry and Joinery

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SECTION 3

BILL No. 7

IRONMONGERY

GENERAL PREAMBLES

Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill

Where ironmongery is described as plugged, prices are to include for screwing to and including approved patent plugs in concrete or brickwork with plaster or tiled finish

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Section 3
SIMULATION ROOM
Bill No. 7
Ironmongery

Ga-Phasha Skills Centre

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	Kitchen Cupboard Units				
	NOTE				
	The kitchen cupboard units shall be of steel construction with baked enamel finish of approved colour with 18mm interior particle board worktops finished on one side and on edges with 1,2mm standard grade high pressure plastic laminate of approved pattern and colour				
	Adjacent worktops of different units shall be neatly butt-jointed and finished off with matching cover strips and prices are to include for same				
	All doors are to be supplied with standard locks and duplicate keys and prices of units are to include for lockable doors where applicable				
	Prices for sink units are to include for stainless steel sinks with draining boards with single or double sinks, each complete with chromium plated flanged waste fitting, plug and chain				
	Prices for all units are to include for fixing in position to plastered walls and on floors with screed, protecting against injury and cleaning down on completion				
	Floor and sink units				
1	Sink unit 1350mm long with single bowl sink and drainer, one shelf and three doors	No	1		
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Section 3
SIMULATION ROOM
Bill No. 7
Ironmongery

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Bill No. 7

Ironmongery

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Ironmongery

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	BILL No. 8				
	METALWORK				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	CLE-VU GATES				
1	Single gate size 1600mm x 2067mm high Cle-Vu	No	1		
	STEEL ROLLER SHUTTERS ETC				
2	Manual push-up slatted roller shutter for 2400 x 2500mm high opening	No	1		
	GALVANISED SCREENS				
3	Mild steel galvanised screen size 3500 x 300mm High	No	2		
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Section 3
SIMULATION ROOM
Bill No. 8
Metalwork

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Item No			Quantity	Rate	Amount
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	BILL No.9				
	PLASTERING				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Screeds				
	Grano on concrete				
1	30mm Thick grano on floors and landings	m2	113		
	Internal Plaster				
	One coat cement plaster on concrete or brickwork				
2	On walls	m2	388		
3	On narrow widths	m2	84		
	External Plaster				
	One coat cement plaster on concrete or brickwork				
4	On walls	m2	66		
5	On narrow widths	m2	4		
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Section 3
SIMULATION ROOM
Bill No. 9
Plastering

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Item No			Quantity	Rate	Amount
	SECTION 3				
	BILL No. 10				
	TILING				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Wall Tiling				
	198 x 198 x 6mm White glazed ceramic wall tiles fixed with an approved adhesive to plaster (plaster elsewhere) and with jointing compound				
1	To walls	m2	10		
	ALUMINIUM TRIMS				
	"M-trim" or "Genesis"12mm silver anodised aluminium straight edge trim to suit tile thickness with grey grout.				
2	On walls	m	4		
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Item No			Quantity	Rate	Amount
	SECTION 3				
	BILL No. 11				
	PLUMBING AND DRAINAGE (PROVISIONAL)				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Taps, valves,etc				
	Traps, etc. including joints to steel pipes and/or fittings unless otherwise described				
1	32-40mm Butyl rubber deep seal P or S trap	No	1		
2	40-40mm Chromium plated bottle trap	No	1		
	Valves, etc. including joints to steel pipes and/or fittings unless otherwise described				
3	15mm Copper service pipe 350mm girth	No	1		
4	15mm Chromium plated full way ballcock shut-off control valve with screw type control	No	1		
5	15mm Sink mixer with waste union	No	1		
	Sanitary Plumbing				
	uPVC pipes and fittings				
6	50mm Pipe laid in/under floors or fixed to walls, roof timbers, etc.	m	10		
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1	100mm Pipe laid in/under floors or fixed to walls, roof timbers, etc.	m	12		
	Extra over uPVC pipes for fittings				
2	100 x 50mm Reducer	No	2		
3	100mm Bend	No	2		
4	100mm Junction	No	2		
	Water Supply				
	Class O thin wall hard drawn copper pipes and fittings with capillary soldered type connections				
5	15mm Pipe laid in/under floors or fixed to walls, roof timbers, etc.	m	5		
6	15mm Pipe fixed in and including chase in walls	m	4		
	Extra over class O copper pipes for soldered capillary fittings				
7	15mm Fittings	No	8		
	Electric water heaters				
	"Kwikot" or similar approved				
8	150 Litre horizontal wall mounted electric water heater	No	1		
	Testing				
9	Provide all necessary apparatus, water, etc. for and test the whole of the Sanitary Plumbing and Water Supply installation to the satisfaction of the Representative/Agent and the Local Authority, rectify all defective work free of charge and leave in perfect order		Item		
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Bill No. 11
Plumbing and Drainaige (Provisional)

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Bill No. 11

Plumbing and Drainaige (Provisional)

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Plumbing and Drainaige (Provisional)

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	BILL No. 12				
	PAINTWORK				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Paint on plaster, etc.				
	Two coats Plascon professional superior low sheen (PEM 1000) or Dulux weather guard ultra smooth adhesion promoted (D62) acrylic paint.				
1	On internal plastered walls	m2	388		
2	On external plastered walls	m2	66		
	Paint on metal				
	Prepare and apply one coat zinc phosphate alkyd resin primer, one coat universal undercoat and two full coats high gloss enamel paint				
3	On grille gates and screens (both sides measured on flat)	m2	15		
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SECTION 4

BILL No. 1

FOUNDATIONS (PROVISIONAL)

GENERAL PREAMBLES

Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill

NOTE IN RESPECT OF REMEASUREMENT OF FOUNDATIONS

Foundation brickwork and concrete walls have been measured to top of unfinished floor level

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EARTHWORKS

NOTE

All excavations are measured as being in "earth" and/or filling compacted to 95% modified AASHTO density

Descriptions of excavations shall be deemed to include for setting aside surplus excavated material in spoil heaps for use as filling, or for depositing within 150m of the perimeter of the excavations and spreading and roughly levelling as directed, as well as for increase in bulk and multiple handling of excavated material caused by the Contractor's method of operation

Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site and for bulking

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Section 4
GATE HOUSE
Bill No. 1
Foundations (Provisional)

Ga-Phasha Skills Centre

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	Working space for formwork to sides of all concrete, except columns, shall be measured only where the concrete face is less than 750mm from the face of the measured excavations Working space for formwork to sides of columns shall be measured for the width of the column face only where both: the top of the column base is more than 1,5m below the commencing level of the excavations and the column face is less than 500mm from the face of the measured excavations No claim shall be considered for any working space for formwork to concrete other than as above described or for working space beyond the sides of trench excavations for the building of brick or block walls Descriptions of excavations for working space shall be deemed to include for any additional risk of collapse so incurred and for the returning and compacting of the excavated material as described _____				
	Excavations				
	Excavate in earth not exceeding 2m deep below natural, elevated or reduced ground level for				
1	Trenches	m3	8		
2	Holes	m3	2		
	(End of excavations in earth)				
3	Extra over all excavations for carting away surplus material from excavations and/or from stockpiles on site to a dumping site to be located by the Contractor	m3	10		
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Bill No. 1
Foundations (Provisional)

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1	Risk of collapse of sides of reduced level excavations from natural, elevated or reduced ground level to not exceeding 1,5m deep	m2	32		
2	Allow for keeping excavations free of all water other than subterranean water		Item		
	Filling, etc.				
3	150mm Thick Rip & Re-compact insitu material to 98% MOD.AASHTO at OMC	m3	12		
4	150mm Thick G5 Layer compacted to 98% MOD.AASHTO at OMC	m3	12		
	Tests				
5	Tests to determine the degree of compaction, etc. of ground or filling	No	4		
	Protection against termites				
6	Poisoning surface of ground in bottoms of trenches, bases, etc.	m2	49		
7	Poisoning surface of ground or filling under floors, steps, etc. including raking out 75mm deep V-shaped channels against the walls, etc. treating with poison solution, backfilling and ramming	m2	78		
	CONCRETE				
	Concrete test cubes				
8	Prepare set of three 150 x 150 x 150mm concrete strength test cubes, label and send to an approved laboratory for testing, pay all charges and submit report to the Principal Agent. Only successful tests will be paid for (Provisional)	No	4		
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GATE HOUSE
Bill No. 1
Foundations (Provisional)

Ga-Phasha Skills Centre

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	Reinforced concrete with a coarse aggregate of 19mm and a minimum compressive strength of 25MPa at 28 days				
1	Bases	m3	2		
2	Ground beams	m3	8		
3	In surface beds cast in panels on waterproofing (elsewhere)	m3	8		
	Sundries				
4	Finish top surface of concrete slabs, etc. to a smooth and even power floated surface	m2	78		
	FORMWORK				
	ROUGH FORMWORK (DEGREE OF ACCURACY III)				
	Rough formwork to sides				
5	Rectangular ground beams	m2	49		
	Movement Joints				
6	Movement joint not exceeding 300mm wide formed of 13mm bitumen impregnated soft board placed vertically in position in concrete floor	m	25		
	Saw cut joints				
7	6 x 20mm Saw cut joints in top of concrete	m	10		
	Construction joints				
8	Construction joints	m	25		
	Boxing in rough formwork to form				
9	100 x 100mm Chamfers along top or bottom edges of ground beams perpendicular to the sofit of surface bed.	m	64		
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GATE HOUSE
Bill No. 1
Foundations (Provisional)

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	REINFORCEMENT				
	High tensile steel reinforcement to structural concrete work				
1	16mm Diameter bars	t	0.10		
2	12mm Diameter bars	t	0.11		
	Mesh reinforcement				
3	Mesh reinforcement with mesh reference number 193 laid in surface beds with 300mm wide side and end laps (measured net)	m2	78		
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Foundations (Provisional)

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Bill No. 1

Foundations (Provisional)

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Foundations (Provisional)

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	BILL No. 2				
	CONCRETE, FORMWORK AND REINFORCEMENT				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	CONCRETE				
	Reinforced concrete				
	Reinforced concrete with a coarse aggregate of 19mm and a minimum compressive strength of 25MPa at 28 days in				
1	Rectangular columns	m3	0.5		
2	Rectangular beams	m3	1		
	FORMWORK				
	Formwork to				
3	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	7		
	Smooth formwork to sides and soffits of rectangular beams				
4	Beams propped up exceeding 1.5m and not exceeding 3.5m high	m2	2		
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	Smooth formwork to sides and soffits				
1	Column	m2	8		
	Boxing in rough formwork to form				
2	100 x 100mm Chamfers along top or bottom edges of ground beams perpendicular to the sofit of surface bed.	m	51		
	REINFORCEMENT				
	High tensile steel bar reinforcement to structural concrete work				
3	16mm Diameter bars	t	0.20		
4	12mm Diameter bars	t	0.20		
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GATE HOUSE
Bill No. 2
Concrete, Formwork and Reinforcement

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Bill No. 2

Concrete, Formwork and Reinforcement

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Bill No. 2
Concrete, Formwork and Reinforcement

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Item No			Quantity	Rate	Amount
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	BILL No. 3				
	MASONRY				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Brickwork in burnt clay bricks in (5:1) cement mortar				
1	Half brick wall	m2	6		
2	Half brick wall in beamfilling	m2	4		
3	One brick wall	m2	42		
	Brick reinforcement				
4	Brick reinforcement 75mm wide built into brick walls with sufficient laps at end joints, angles and intersections (measured net)	m	30		
5	Brick reinforcement 150mm wide built into brick walls with sufficient laps at end joints, angles and intersections (measured net)	m	126		
	Joint forming material in movement joints				
6	38 x 1,6mm Galvanised hoop iron roof tie with one end built six courses deep into top of brickwork and other end wrapped around and nailed to trusses	No	29		
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Section 4
GATE HOUSE
Bill No. 3
Masonry

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	Nutec Cement/Fibre-cement window cills				
1	Internal window sill 100mm wide	m	8		
2	External window sill 100mm wide set sloping	m	8		
	Prestressed concrete lintels				
3	110 x 75mm Lintels in lengths not exceeding 3m	m	12		
	FACE BRICKWORK				
	Extra over for face brick: External face bricks pointed with flush horizontal and vertical joints. Firelight Travertine face brick.				
4	230mm brickwork face brickwork.	m2	42		
	WINDOW CILLS				
	Facebrick on edge window sills				
5	Window sill, facebrick on edge	m	8		
	Galvanised hoop iron cramps, ties, etc				
6	50 x 1.5mm Wall tie 605mm long, five times bent along length, with one end shot-pinned to concrete and the other end built into brickwork	No	29		
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GATE HOUSE
Bill No. 3
Masonry

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Masonry

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	BILL No. 4				
	WATERPROOFING				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	DAMP-PROOFING TO WALLS				
1	375 Micron embossed black polyethylene damp-proof course to walls, cills, etc. (measured net)	m2	55		
	DAMP-PROOFING UNDER FLOORS, ETC.				
	Colour coded polyethylene sheeting complying with SANS 952, Type C in widest practicable widths with all joints lapped and sealed in accordance with the manufacturer's instructions				
2	250 Micron green medium density damp-proof membrane laid loose on top of sand bed (elsewhere) under solid floors with pressure sensitive tape jointing	m2	24		
3	250 Micron green medium density damp-proof membrane laid loose on top of sand bed (elsewhere) to under sides and both sides of ground beams	m2	10		
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SECTION 4

BILL No. 5

ROOF COVERINGS, ETC.

GENERAL PREAMBLES

Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill

PROFILED METAL SHEETING AND ACCESSORIES

0.58mm Thick concealed fixing roofing sheets manufactured from roll-formed from certified steel complying with ISQ 550 (3T). The profile shall have three trapezoidal ribs at 203mm centers giving a net cover of 406mm. The rib height shall be 41mm and provide capillary breaks. The male rib shall have spurs at 283mm centers to ensure a positive double interlocking action at side-laps. Each pan shall incorporate two stiffener ribs. Profiled roof sheets to be coated on both sides with "Global Coat" or "Chromadek Colour" and laid on structural timber/steel structure incorporating all necessary accessories such as flashings and eave closers in strict compliance to manufacturer's instructions

Note

The Contractor is to submit a certificate signed by the merchant, stating that the galvanised roof covering supplied complies with the required thickness specified

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GATE HOUSE
Bill No. 5
Roof Coverings, etc

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	Chromadek roof sheeting 50mm x 50mm purlins on appro. Underlay on prefabricated trusses to specialist details at max 1200mm centre to centre to Engineers details at 5° roof pitch				
1	0,58mm Roof sheeting with pitch not exceeding 25° fixed to timber purlins (elsewhere)	m2	52		
2	0.58mm Sheet iron side wall flashing 370mm girth	m	29		
	ROOF AND WALL INSULATION				
	50mm Thick Approved FBL foll backed aluminium blanket				
3	Insulation blanket laid taut over purlins (at approximately 1000mm centres) and fixed concurrent with roof covering with stapled longitudinal flap joints, including fixing at top and bottom edges to purlins with and including hoop iron straps	m2	52		
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GATE HOUSE
Bill No. 5
Roof Coverings, etc

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Bill No. 5

Roof Coverings, etc

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Bill No. 5
Roof Coverings, etc

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BILL No. 6

CARPENTRY AND JOINERY

GENERAL PREAMBLES

Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill

TIMBER

All softwood to be South African Pine

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Section 4
GATE HOUSE
Bill No. 6
Carpentry and Joinery

Ga-Phasha Skills Centre

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DESCRIPTIONS

The term "planted on" shall mean the nailing of one timber member to another

The term "screwed on" shall mean the countersunk screwing of one timber member to another

The term "screwed on and pelleted" shall mean the screwing of one timber member to another with the heads of screws sunk and pelleted

The term "plugged" shall mean the countersunk screwing of a timber member to and including plastic plugs in brickwork or concrete

The term "plugged and pelleted" shall mean the screwing of a timber member to and including plastic plugs in brickwork or concrete with heads of screws sunk and pelleted

Shelving, etc. described as screwed to steel must be fixed from underside and prices are to include for countersunk drilling through the steel for screw fixing

Descriptions of floors, ceilings, joinery, etc. shall be deemed to include for all square cutting

Descriptions of items given in lineal metre shall be deemed to include for mitres, stopped ends, fitted intersections, etc.

Descriptions of rounded angles, rebates, grooves, chamfers, moulded edges, etc. shall be deemed to include for angles, ends, etc.

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Prefabricated metal connector plate timber roof trusses

Roofs, etc

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Section 4
GATE HOUSE
Bill No. 6
Carpentry and Joinery

Ga-Phasha Skills Centre

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Allow for the preparation and submission of the following documents (applicable to ALL roofs), inclusive of Detailed shop drawings indicating truss sizes, truss positions, bracings, etc to be submitted for approval prior to commencement of fabrication,Design certificate indicating the licensed programme used, SANS specifications adhered to, general procedures and loading adopted, sizes and grading of timber components, details, etc.

NOTE:

a. All the roof trusses to be at average 1177mm centres and constructed for a 15 degrees pitch unless otherwise stated

b. All the roof trusses to be designed and constructed with softwood structural timber to include for live loads, wind loads and to take corrugated roof covering, purlins and fibre cement or gypsum plasterboard ceilings with brandering. Each roof truss shall have all its members accurately cut and close butted together and rigidly fixed by CSIR approved patented galvanized metal spiked connectors, fixed on both sides of each intersection by an approved method, all in accordance with the manufacturer's instructions.

c. Unless otherwise described all rafter feet are to extend 770mm beyond the length of the tie beam, with ends twice splay cut

d. The design, manufacture and transportation of the roof trusses, bracing, etc. shall be under the control of a registered Engineer in accordance with SANS 0243 and it shall be required from the manufacturer of the trusses to lodge a written guarantee that his construction has been designed by a qualified Structural Engineer and that he is in possession of a capability certificate issued by the Institute for Timber Construction and approved by the Principal Agent

e. The tenderer's attention is drawn to the fact that the Architect's roof truss drawings only represent the overall size and bearing points of the trusses and not the required design.

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GATE HOUSE
Bill No. 6
Carpentry and Joinery

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	f. Erection must be carried out as described in "The Erection and Bracing of Timber Roof Trusses" published by the Truss Plate Association of South Africa Ltd. and the National Timber Research Institute, CSIR. g. Descriptions of roof trusses shall be deemed to include for design, manufacture, supply, hoisting and fixing in position, trimming ends, notching, etc. and for any temporary bracing. ----------				
1	Mono pitch roof truss size 8.902m long x 2.4m high	No	3.00		
	Sundry roof timbers				
	Sawn Softwood (Grade 5)				
2	38 x 114mm Wall plate	m	16		
3	50 x 76mm Purlin including additional timber supports at spliced joints	m	160		
	Roof sundries				
4	Galvanised mild steel hurricane type fixing clips nailed between rafter and purlin connection (Provisional)	No	60		
	Wood preservative				
5	Two coats wood preservative applied hot on wrought exposed roof timbers	m2	128		
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Section 4
GATE HOUSE
Bill No. 6
Carpentry and Joinery

Ga-Phasha Skills Centre

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	Doors				
	NOTE				
	All framed and ledged batten doors and combination doors, where battens are utilised, shall only be of construction acceptable to the Department, i.e. mortice and tenon where the tenon is exposed on the outside edges of styles and where the tenon is wedged to form a dovetailed shape				
	40mm Thick flush panel maple veneered door with lightweight core filling				
1	40mm x 0,820 x 2,032m Framed, ledged and braced batten door formed of 40 x 110mm styles and top rail, 20 x 225mm bottom ledge, 20 x 150mm middle ledge and 20 x 110mm diagonal braces, filled in flush one side with 20 x 75mm tongued, grooved and V-jointed both sides vertical boarding fixed in and including grooves in styles and top rail	No	1		
	Solid laminated flush panel doors with hardboard face suitable for paint both sides and two wrought Meranti concealed vertical edge strips				
2	40mm x 0,813 x 1,882m Door	No	1		
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GATE HOUSE
Bill No. 6
Carpentry and Joinery

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Carpentry and Joinery

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Carpentry and Joinery

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Item No			Quantity	Rate	Amount
	SECTION 4				
	BILL No. 7				
	CEILINGS, PARTITIONS AND ACCESS FLOORING				
	PREAMBLES				
	For preambles see "Specification of Material and Method to be used PW371"				
	SUPPLEMENTARY PREAMBLES				
	Descriptions:				
	Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins or shot pinned to brickwork or concrete				
	Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres, and where described as "bolted" the bolts have been given elsewhere				
	CEILINGS ETC				
	SUSPENDED CEILINGS				
	1200 x 600 x 6mmThick Fibre cement vinyl clad ceiling boards on pre-painted exposed tee suspension system including main and cross tees, necessary hangers, grids, etc all as per manufacturer's instruction.				
1	Ceilings suspended not exceeding 1m below timber purlins at 2,00m centres.	m2	5		
2	"Shadowline" pre painted cornice, nailed	m	9		
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Item No			Quantity	Rate	Amount
	SECTION 4				
	BILL No. 8				
	IRONMONGERY				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Where ironmongery is described as plugged, prices are to include for screwing to and including approved patent plugs in concrete or brickwork with plaster or tiled finish				
	_____				
	The following ironmongery fixed to doors, etc.				
	Bolts and latches				
1	Roller ball catch for toilet doors and keep fixed to steel	No	1		
2	150mm Satin chrome flush bolt with a short length of brass tubing let into concrete floor as keep	No	1		
	Locks				
	The following locks are to be suitable for master key operation.				
3	Bathroom/WC mortice indicator lock set with satin chrome furniture	No	1		
4	75mm Three lever upright mortice lockset with satin chrome furniture	No	1		
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	Sundries				
1	38mm Rubber door stop plugged and screwed to wall or floor	No	2		
2	19mm Stainless steel chromium plated towel rail, 600mm long, with end brackets plugged to plastered or tiled wall	No	1		
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GATE HOUSE
Bill No. 8
Ironmongery

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Section 4

Bill No. 8

Ironmongery

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GATE HOUSE
Bill No. 8
Ironmongery

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Item No			Quantity	Rate	Amount
	SECTION 4				
	BILL No. 9				
	METALWORK				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Door frames, Doors, Windows, etc.				
	Galvanised pressed steel door frames				
	1,2mm Double rebated pressed steel door frames suitable for half brick walls				
1	Door frame for door size 0,761 x 2,134m with two 100mm steel butts without striking plate or opening in frame and prepared for roller catch or closet indicators	No	1		
	1,2mm Double rebated pressed steel door frames suitable for one brick walls				
2	Door frame for door size 0,914 x 2,134m with two 100mm steel butts without striking plate or opening in frame and prepared for roller catch or closet indicators	No	1		
	Aluminium windows				
	Note: Tenderers are referred to architect's drawings numbered A102 annexed to these bills of quantities/accompanying these bills of quantities for tender purposes				
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Section 4
GATE HOUSE
Bill No. 9
Metalwork

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	The given sizes are overall, approximate and in the order of width and height. The detailed drawings and building must be carefully checked for exact sizes before placing orders. Any errors in this respect will be at the Contractor's expense and no claims for any extras in this regard will be entertained Where so described windows shall be provided with burglar bars to opening and fixed sections, consisting of 20 x 5mm galvanised mild steel flat sections to standard NBP2 pattern welded at intersections and to window frame Bars in front of fixed sections to be bent 75mm away from the glass surface **ALUMINIUM WINDOWS, DOORS, ETC** **Epoxy powder coated aluminium windows glazed with 6mm laminated safety glass and plugged to brickwork or concrete** **Aluminium window low E glazing, mm Thick monolithic annealed safety glass to comply with part N of SANS 10400,aluminium frame to be powder coated COLOUR: Charcoal Grey**				
1	Purpose made aluminium window size 800mm x 450mm high overall. **Ref W5**	No	1		
2	Purpose made aluminium window size 1800mm x 1600mm high overall. **Ref W11**	No	2		
3	Purpose made aluminium window size 2960mm x 1600mm high overall. **Ref W11**	No	1		
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GATE HOUSE
Bill No. 9
Metalwork

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Bill No. 9

Metalwork

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GATE HOUSE
Bill No. 9
Metalwork

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SECTION 4

BILL No. 10

SUPPLEMENTARY PREAMBLES

Descriptions

Descriptions of bolts shall be deemed to include nuts and washers

Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete

Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete

Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete. Where anchor bolts are described as embedded in sides or soffits of concrete it shall be deemed to include holes through formwork.

Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete.

STEEL COLUMNS AND BEAMS

STRUCTURAL STEEL MEMBERS (GALVANISED)

STANCHIONS / COLUMNS

Steel members to include welding, holes, black bolts, nuts, washers, rivets, bolting and riveting integral with structural steelwork.

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Section 4
GATE HOUSE
Bill No. 10
Structural steelwork

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	Welded columns in single lengths with flat section base, top, bearer and connection plates bolted to ring beams.				
	219.1 x 6.0mm CHS Circular hollow section columns				
1	Column	t	0.730		
	BASE PLATES				
	360mm Dia x 16mm base plate bolted to concrete base				
2	16mm Base plate	t	0.002		
	CAP PLATES				
	360mm Dia x 16mm cap plate bolted to concrete base				
3	16mm Base plate	t	0.002		
	BOLTS				
	4.8 HD bolts (Galvanised)				
4	M16 Hd bolts	No	16.00		
5	Painting of all steel structure components	m2	21		
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GATE HOUSE
Bill No. 10
Structural steelwork

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Structural steelwork

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Bill No. 10
Structural steelwork

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Item No			Quantity	Rate	Amount
	SECTION 4				
	BILL No.11				
	PLASTERING				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Screeds				
	Screeds on concrete				
1	30mm Thick on floors and landings	m2	24		
	Internal Plaster				
	One coat cement plaster on concrete or brickwork				
2	On walls	m2	54		
3	On narrow widths	m2	5		
	External Plaster				
	One coat cement plaster on concrete or brickwork				
4	On narrow widths	m2	16		
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Section 4
GATE HOUSE
Bill No. 11
Plastering

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Item No			Quantity	Rate	Amount
	SECTION 4				
	BILL No. 12				
	TILING				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Wall Tiling				
	198 x 198 x 6mm White glazed ceramic wall tiles fixed with an approved adhesive to plaster (plaster elsewhere) and with jointing compound				
1	To walls	m2	54		
	Floor Tiling				
	300 x 300mm x 9mm Full body porcelain tiles in matt finish laid to approved pattern using approved adhesive and grout, colour and pattern to architect's approval. The tenderer to allow an amount of R160.00 per square meter (exclusive of VAT) for the supply of tiles only and include for all waste, labour and profit in the applicable "rate"				
2	On floors	m2	24		
	ALUMINIUM TRIMS				
	"M-trim" or "Genesis"12mm silver anodised aluminium straight edge trim to suit tile thickness with grey grout.				
3	On walls	m	44		
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Section 4
GATE HOUSE
Bill No. 12
Tiling

Ga-Phasha Skills Centre

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Item No			Quantity	Rate	Amount
	SECTION 4				
	BILL No. 13				
	PLUMBING AND DRAINAGE (PROVISIONAL)				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Sanitary Fittings				
1	560 x 405mm White vitreous china wash hand basin complete with and including one chromium plated pillar tap, one tap hole plug, waste, plug and chain and concealed brackets	No	1		
2	WC suite comprising of white vitreous china paraplegic 90 degrees outlet pan with P trap, 9 litre low level matching vitreous china cistern complete with valveless syphonic fitting, ball valve and matching flush pipe and heavy duty white single flap seat.	No	1		
	Taps, valves,etc				
	Traps, etc. including joints to steel pipes and/or fittings unless otherwise described				
3	32-40mm Butyl rubber deep seal P or S trap	No	1		
	Valves, etc. including joints to steel pipes and/or fittings unless otherwise described				
4	15mm Copper service pipe 350mm girth	No	1		
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Section 4
GATE HOUSE
Bill No. 13
Plumbing and Drainaige (Provisional)

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1	15mm Chromium plated full way ballcock shut-off control valve with screw type control	No	1		
2	15mm Sink mixer with waste union	No	1		
	Sanitary Plumbing				
	uPVC pipes and fittings				
3	50mm Pipe laid in/under floors or fixed to walls, roof timbers, etc.	m	8		
4	100mm Pipe laid in/under floors or fixed to walls, roof timbers, etc.	m	12		
	Extra over uPVC pipes for fittings				
5	100 x 50mm Reducer	No	2		
6	100mm Bend	No	8		
7	100mm Junction	No	4		
8	100mm Pan connector	No	5		
9	100mm VP stub stack fitting with ABC cleaning eye lid and multiple connections for 50mm waste	No	2		
10	100mm Access bend	No	2		
11	100mm Access bend with anti-syphon horn	No	2		
12	100mm Access junction	No	2		
13	100mm Access reducing junction	No	2		
14	Two way PVC vent valve suitable for 50mm pipe	No	2		
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Section 4
GATE HOUSE
Bill No. 13
Plumbing and Drainaige (Provisional)

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	Galvanised mild steel screwed and socketed pipes and fittings				
1	50mm Pipe and excavation not exceeding 1m deep	m	8		
2	50mm Pipe laid in/under floors or fixed to walls, roof timbers, etc.	m	5		
	Extra over galvanised mild steel pipes for galvanised mild steel fittings				
3	50mm Bend	No	2		
4	50mm Bush	No	2		
	Extra over galvanised mild steel pipes for brass fittings				
5	50mm Bend	No	4		
6	50mm Bend with cleaning eye	No	2		
7	50mm Junction with cleaning eye	No	2		
8	50mm Reducing junction with cleaning eye	No	1		
	Sundries				
9	Wire balloon grating in top of pipe not exceeding 100mm diameter	No	2		
	Water Supply				
	Class O thin wall hard drawn copper pipes and fittings with capillary soldered type connections				
10	15mm Pipe laid in/under floors or fixed to walls, roof timbers, etc.	m	10		
11	15mm Pipe fixed in and including chase in walls	m	8		
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Section 4
GATE HOUSE
Bill No. 13
Plumbing and Drainaige (Provisional)

Ga-Phasha Skills Centre

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	Extra over class O copper pipes for soldered capillary fittings				
1	15mm Fittings	No	4		
	Testing				
2	Provide all necessary apparatus, water, etc. for and test the whole of the Sanitary Plumbing and Water Supply installation to the satisfaction of the Representative/Agent and the Local Authority, rectify all defective work free of charge and leave in perfect order		Item		
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GATE HOUSE
Bill No. 13
Plumbing and Drainaige (Provisional)

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Plumbing and Drainaige (Provisional)

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Bill No. 13
Plumbing and Drainaige (Provisional)

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Item No			Quantity	Rate	Amount
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	BILL No. 14				
	GLAZING				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Mirrors				
	NOTE				
	Mirrors shall be of 6mm thick silvered GG quality polished float glass with rounded and polished edges and splayed corners				
	Unless otherwise described, mirrors shall have four holes for and be screwed to and including approved patent plugs in plastered or tiled wall with countersunk steel screws tap-threaded for and including screw type chromium plated dome-headed caps and felt washers				
	_____				
1	Mirror size 450 x 600mm	No	1		
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Section 4
GATE HOUSE
Bill No. 14
Glazing

Ga-Phasha Skills Centre

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Item No			Quantity	Rate	Amount
	SECTION 4				
	BILL No. 15				
	PAINTWORK				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Paint on plaster, etc.				
	Two coats Plascon professional superior low sheen (PEM 1000) or Dulux weather guard ultra smooth adhesion promoted (D62) acrylic paint.				
1	On internal plastered walls	m2	7		
2	On external plastered walls	m2	16		
	Paint on metal				
	Prepare, touch up factory primer and apply one coat universal undercoat and two full coats high gloss enamel paint				
3	On pressed steel door frames	m2	3		
	Paint on wood				
	Prepare, stop and apply three full coats polyurethane clear eggshell varnish, lightly sanded down between coats				
4	On general surfaces	m2	4		
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	Prepare and apply one coat hardboard primer, one coat universal undercoat and two full coats high gloss enamel paint				
1	On general surfaces	m2	4		
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Section 4
GATE HOUSE
Bill No. 15
Paintwork

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Bill No. 15

Paintwork

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GATE HOUSE
Bill No. 15
Paintwork

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	SECTION 4				
	BILL No. 16				
	GENERAL SITEWORKS (PROVISIONAL)				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Site clearance				
1	Clear and grub area of the site to be built upon including digging up and removing rubbish, debris, vegetation, hedges, boulders, shrubs and trees with trunk not exceeding 200mm girth	m2	78		
2	Preparation and stripping of topsoil to a maximum of 150mm	m3	23		
	Earthworks				
	Excavation in earth for open face excavations				
3	Exceeding not exceeding 2m deep	m3	141		
	Extra over all excavations for carting away				
4	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	47		
5	Extra over open face excavations in earth for excavations in hard rock	m3	27		
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Section 4
GATE HOUSE
Bill No. 16
General Siteworks

Ga-Phasha Skills Centre

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	Earthworks Platform				
1	Imported G5 material from commercial sources to make up platform levels over site compacted to 95% Mod AASHTO density in layers not exceeding 150mm	m3	78		
2	Scarify top 150mm layer of ground and re-compact to 93% Mod AASHTO density	m2	78		
3	Grade and trim sides of platform	m2	78		
4	Allow for keeping excavations free of all water other than subterranean water		Item		
	Tests				
5	Tests to determine the degree of compaction, etc. of ground or filling	No	6		
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Section 4
GATE HOUSE
Bill No. 16
General Siteworks

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Bill No. 16

General Siteworks

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Bill No. 16
General Siteworks

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SECTION 5

BILL No. 1

FOUNDATIONS (PROVISIONAL)

GENERAL PREAMBLES

Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill

NOTE IN RESPECT OF REMEASUREMENT OF FOUNDATIONS

Foundation brickwork and concrete walls have been measured to top of unfinished floor level

_____

EARTHWORKS

NOTE

All excavations are measured as being in "earth" and/or filling compacted to 95% modified AASHTO density

Descriptions of excavations shall be deemed to include for setting aside surplus excavated material in spoil heaps for use as filling, or for depositing within 150m of the perimeter of the excavations and spreading and roughly levelling as directed, as well as for increase in bulk and multiple handling of excavated material caused by the Contractor's method of operation

Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site and for bulking

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Section 5
ENTRANCE WALL
Bill No. 1
Foundations (Provisional)

Ga-Phasha Skills Centre

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	Working space for formwork to sides of all concrete, except columns, shall be measured only where the concrete face is less than 750mm from the face of the measured excavations Working space for formwork to sides of columns shall be measured for the width of the column face only where both: the top of the column base is more than 1,5m below the commencing level of the excavations and the column face is less than 500mm from the face of the measured excavations No claim shall be considered for any working space for formwork to concrete other than as above described or for working space beyond the sides of trench excavations for the building of brick or block walls Descriptions of excavations for working space shall be deemed to include for any additional risk of collapse so incurred and for the returning and compacting of the excavated material as described _____				
	Excavations				
	Excavate in earth not exceeding 2m deep below natural, elevated or reduced ground level for				
1	Trenches	m3	10		
2	Holes	m3	0.3		
	(End of excavations in earth)				
3	Extra over all excavations for carting away surplus material from excavations and/or from stockpiles on site to a dumping site to be located by the Contractor	m3	6		
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Section 5
ENTRANCE WALL
Bill No. 1
Foundations (Provisional)

Ga-Phasha Skills Centre

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1	Risk of collapse of sides of reduced level excavations from natural, elevated or reduced ground level to not exceeding 1,5m deep	m2	40		
2	Allow for keeping excavations free of all water other than subterranean water	Item			
	Filling, etc.				
	Earth filling obtained from the excavations and/or prescribed stock piles on site (not compacted)				
3	Backfilling behind retaining walls	m3	4		
	Protection against termites				
4	Poisoning surface of ground in bottoms of trenches, bases, etc.	m2	50		
	CONCRETE				
	Concrete test cubes				
5	Prepare set of three 150 x 150 x 150mm concrete strength test cubes, label and send to an approved laboratory for testing, pay all charges and submit report to the Principal Agent. Only successful tests will be paid for (Provisional)	No	6		
	Reinforced concrete with a coarse aggregate of 19mm and a minimum compressive strength of 25MPa at 28 days				
6	Strip footings	m3	4		
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Section 5
ENTRANCE WALL
Bill No. 1
Foundations (Provisional)

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Section 5

Bill No. 1

Foundations (Provisional)

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Foundations (Provisional)

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	BILL No. 2				
	MASONRY				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	SUPERSTRUCTURE				
	Brickwork in burnt clay bricks in (5:1) cement mortar				
1	Piers	m3	5		
2	285mm Hollow walls of two half brick skins including wire ties	m2	50		
	Brick reinforcement				
3	Brick reinforcement 150mm wide built into brick walls with sufficient laps at end joints, angles and intersections (measured net)	m	300		
	FACE BRICKWORK				
	Extra over for face brick: External face bricks pointed with flush horizontal and vertical joints. Firelight Travertine face brick.				
4	230mm brickwork face brickwork.	m2	100		
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Section 5
ENTRANCE WALL
Bill No. 2
Masonry

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	Brick-on-edge header course copings, sills, etc of "Corobrik" or equally approved face bricks, pointed with recessed joints on all exposed faces				
1	220mm Brick-on-edge roller course	m	20		
	Signage				
2	Signage as per Architect's specification		Item		8 500.00
3	Contractor's mark-up @ 3%		Item		255.00
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Section 5
ENTRANCE WALL
Bill No. 2
Masonry

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Bill No. 2

Masonry

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ENTRANCE WALL
Bill No. 2
Masonry

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	BILL No. 3				
	WATERPROOFING				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	DAMP-PROOFING TO WALLS				
1	375 Micron embossed black polyethylene damp-proof course to walls, cills, etc. (measured net)	m2	6		
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ENTRANCE WALL

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	SECTION 6				
	BILL No. 1				
	GENERAL SITE WORKS (PROVISIONAL)				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Site clearance				
1	Clear and grub area of the site to be built upon including digging up and removing rubbish, debris, vegetation, hedges, boulders, shrubs and trees with trunk not exceeding 200mm girth	m2	1 982		
2	Remove and grub trees and tree stumps of girth over 200mm but not exceeding 1m (Provisional)	No	1		
3	Preparation and stripping of topsoil to a maximum of 150mm	m3	297		
	Earthworks Platform				
4	Imported G5 material from commercial sources to make up platform levels over site compacted to 95% Mod AASHTO density in layers not exceeding 150mm	m3	95		
5	Earth filling from the excavations to make up levels around buildings compacted to 93% modified AASHTO density	m3	43		
6	Scarify top 150mm layer of ground and re-compact to 93% Mod AASHTO density	m2	1 982		
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EXTERNAL WORKS
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General Siteworks

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1	Grade and trim sides of platform	m2	380		
2	Allow for keeping excavations free of all water other than subterranean water	Item			
3	Tests to determine the degree of compaction, etc. of ground or filling	No	25		
4	Galvanised gabion mattresses, 0.3m deep with 80mm x 100mm mesh and diaphragms at 1.0 centres and 7.3mm diameter mesh wire (Refer to Civil Engineer's Drawing: SSETA/BWLM/SDC/W002)	m3	1		

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Bill No. 1

General Siteworks

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	BILL No. 2				
	ROADS AND PARKING (PROVISIONAL)				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Earthworks				
1	Extra over open face excavations in earth for excavations in soft rock	m3	25		
2	Extra over open face excavations in earth for excavations in hard rock	m3	25		
3	Allow for keeping excavations free of all water other than subterranean water		Item		
4	Selected layer imported natural gravel material (minimum G5 material to TRH14) supplied by the Contractor and brought onto site from commercial sources in filling under the paving, etc, compacted in layers not exceeding 150mm thick to 95% modified AASHTO density	m3	105		
5	Sub-base layer of imported natural gravel material (minimum C4 material to TRH14) supplied by the Contractor and brought onto site from commercial sources and compacted to 95%modified AASHTO density and process sub-base material with 3% cement	m3	105		
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EXTERNAL WORKS
Bill No. 2
Roads and Parking

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1	25mm Thick dry, clean, river sand layer evenly spread over filling (elsewhere) and levelled to receive paving blocks (elsewhere)	m2	700		
	Tests				
2	Tests to determine the degree of compaction, etc. of ground or filling	No	16		
	Precast Concrete				
3	60mm Thick 35MPa pre cast concrete interlocking block paving of 220 x 97mm grey paving blocks in accordance with SANS Specification 1058 and laid to falls on sand layer (elsewhere) with joints filled in with sand and vibrated, including all straight cutting	m2	700		
4	Pre cast concrete municipal barrier kerbing to SANS 927 Fig. 3 in 1m lengths with 10mm wide butt joints filled in with (2:1) cement mortar and pointed with grooved half round joints and 10mm wide open butt joints at 5m centres including 15MPa/19mm mass concrete bedding size 50mm thick x 300mm wide, 20MPa/19mm mass concrete haunching size 225mm long x 225mm high x 150mm thick at joints, any necessary excavation, formwork, etc. and backfilling at back of kerbs, top soiled and levelled to adjacent surfaces	m	136		
5	Pre cast concrete walkway edge restraint to SABS 927 Fig. 12	m	90		
	Metalwork				
	Road Signs				
6	Standard "STOP" sign (R1) with standard 50mm diameter galvanised mild steel fixing post bedded into and including bases, including any necessary excavation, mass concrete, etc.	No	1		
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Roads and Parking

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1	Standard "Yield" sign with standard 50mm diameter galvanised mild steel fixing post bedded into and including bases, including any necessary excavation, mass concrete, etc.	No	1		
	Paintwork				
	Prepare and apply one coat white reflective road marking paint on pre cast concrete paving blocks				
2	"Stop" marking on road	No	1		
3	Directional marking on road	No	2		
4	Yellow and white chevron marking on speed humps	No	3		
5	"Disabled" marking on parking bay	No	1		
6	100mm Wide white or yellow parking lines	m	100		
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Roads and Parking

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	BILL No. 3				
	STORM WATER, SEWER AND WATER SUPPLY (PROVISIONAL)				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	Water Supply				
	Pipe Trenches				
	Galvanised mild steel screwed and socketed pipes and fittings				
1	80mm Pipe laid in trenches (elsewhere)	m	80		
2	80mm Fire hydrant stand pipe (no fixing)	No	2		
	HDPE polyethylene Class 10 (SABS 533 Type 4 Part 11) pipes with O-ring screw type pressure fittings				
3	32mm Diameter pipe laid in trenches (elsewhere)	m	100		
	O-ring screw type pressure fittings for polyethylene pipes				
4	32mm Bend	No	7		
5	63 x 32mm Reducer	No	2		
6	32mm Tee	No	4		
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Stormwater, Sewer and Water Supply

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1	63mm Tee	No	2		
	Testing				
2	Provide all necessary apparatus, water, etc for testing the whole of the water supply and fire reticulation installation to the satisfaction of the Principal Agent and Local Authority, rectify all defective work free of charge and leave in perfect working order		Item		
	Sewage Disposal				
	Pipe Trenches				
3	Excavate in earth not exceeding 2m deep for pipe trenches	m3	76		
4	Risk of collapse of sides of reduced level excavations from natural, elevated or reduced ground level to not exceeding 1,5m deep	m2	150		
5	Selected backfill (material with a PI less than 10 and maximum aggregate size 30mm) obtained from the excavations and compacted to 90% Mod AASHTO density	m3	38		
6	Selected fill bedding (granular material regarded as clean river sand or any non-cohesive material with a PI less than 6 and maximum aggregate size 20mm) obtained from the excavations under and around pipes and compacted to 90% Mod AASHTO density	m3	11		
	uPVC Class 34 (SABS 533 Type 4 Part 11) drain pipes with electro fusion or butt welded joints				
7	110mm Diameter pipes laid in trenches (elsewhere)	m	15		
8	160mm Diameter pipes laid in trenches (elsewhere)	m	50		
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EXTERNAL WORKS
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Stormwater, Sewer and Water Supply

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	Sundries				
1	15MPa/19mm Mass concrete in pre cast IE marker block set flush with ground or paving	No	4		
2	Gulley not exceeding 1000mm deep to invert level comprising 100mm diameter vitrified clay gulley trap and head, fitted with 190mm diameter cast iron grating, including excavating for, bedding on and encasing in 15MPa/19mm mass concrete and fitted with and including pre cast gulley top bedded in (3:1) cement mortar	No	3		
3	ABC cast iron straight or bent cleaning eye with removable cover jointed to vitrified clay pipe and set in and including 15MPa/19mm aggregate mass concrete surround with exposed surfaces trowelled smooth	No	3		
	Precast Concrete Manholes				
4	Deep type pre cast prefabricated concrete manhole rings, exceeding 500mm but not exceeding 1000mm deep, the bottom ring set on and including 100mm thick 20MPa/19mm aggregate mass concrete base projecting 75mm beyond external face of chamber ring and sealed to ring with 75mm wide x 125mm high 20MPa/19mm agg mass concrete triangular fillet complete with pre cast concrete medium duty cover and frame comprising 125mm thick x 67kg frame and 125mm thick x 66kg cover including step irons, 20MPa/19mm agg mass concrete benching in bottom with top surfaces to falls, finished smooth with 1:1 cement plaster, 150mm vitrified clay channels, bends, junctions, etc with additional excavation and backfilling compacted to 93% Mod AASHTO density	No	5		
5	Ditto exceeding 1000mm but not exceeding 1500mm deep	No	5		
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Stormwater, Sewer and Water Supply

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1	Provide all necessary apparatus, water, etc for testing the whole of the sewer installation to the satisfaction of the Principal Agent and Local Authority, rectify all defective work free of charge and leave in perfect working order		Item		
	Stormwater Drainage				
	All excavations are measured as being in "earth" and/or filling compacted to 98% Mod AASHTO density				
	30MPa/19mm aggregate mass concrete in				
2	V-shaped channel 1500mm wide x 150mm thick concrete lining with rounded salient edges and wood float finish on exposed surfaces, laid to falls in panels not exceeding 1800mm long with 12mm bitumen impregnated softboard movement joints, including all necessary excavation and formwork, all as per drawing number	m	190		
3	Precast concrete taper chute channel	m	4		
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Stormwater, Sewer and Water Supply

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	SECTION 6				
	BILL No. 4				
	SECURITY FENCING (PROVISIONAL)				
	GENERAL PREAMBLES				
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill				
	METALWORK				
	"ClearVu" or equal and approved Category 3 Security Fencing System				
1	Supply and install fencing comprising of steel mesh panels size 3297 x 2400mm high at 3382mm centres, 4mm diameter hot dipped galvanised wire with aperture size 76,2mm x 12.7mm, panels to be reinforced with 4 x 50mm "V" recessed bands including 2 x 75mm 70 degree flanges along sides, posts cast into 600mm deep x 400mm wide 15Mpa concrete base on one side, posts 85 x 45mm tapered; posts and panels hot dipped galvanised and polymetic 6000 coated, including all single and double bolt comb clamps galvanised then polymetic 6000 coated and antivandal galvanised bolts, the fence to be fitted with anti-climb comprising 100mm high galvanised "shark tooth" type spike rails, bolted to 50mm wide ClearVu mesh flange bent along fence on top, fitted with anti-burrow comprising 500mm ripper flatwrap at the bottom, all installed according to manufacturer's instructions and specifications.	m	370		
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	"ClearVu" Gate and Posts, etc.				
1	Double gate size 5900 x 2400mm high overall in two equal leaves, each leaf fitted with similar and equal anti-climb spiked rail on top, including all accessories and installed in accordance with manufacturer's instructions	No	1		
2	Pedestrian gate size 1200 x 2455mm high ditto	No	1		
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Security Fencing

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Security Fencing

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Security Fencing

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	SECTION 6			
	BILL No. 6			
	BOREHOLE			
	GENERAL PREAMBLES			
	Tenderers are advised to study the Model Preambles for Trades (September 2008 Edition) published by the Association of south African Quantity Surveyors before pricing this bill			
	NOTE IN RESPECT OF REMEASUREMENT OF FOUNDATIONS			
	Foundation brickwork and concrete walls have been measured to top of unfinished floor level			
	_____			
	BUDGETARY ALLOWANCE			
1	Provide the sum of R209 708.74 (Two Hundred and Nine Thousand,Seven Hundred and Eight Rands and Seventy Four Cents) for the installation, testing and commissioning of a bore hole complete as per the Engineer's specification	Item		209 708.74
2	Contractor's mark-up @ 3%	Item		6 291.26
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Bill No. 5
Borehole

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SECTION 6

BILL No. 7

SEPTIC TANK AND FRENCH DRAIN(PROVISIONAL)

SUPPLEMENTARY PREAMBLES

"Polycop" polypropylene pipes:

Polypropylene pipes 54mm diameter and under shall be seamless copper coloured class 16 pipes jointed with "Fast-fuse" heat welded thermoplastic or brass compression fittings as designed for use with copper pipes as stated

Pipes shall be firmly fixed to walls etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions

All pipe diameters are nominal external

Concrete pipes:

Pipes shall be jointed with ogee joints with rubber collars or socket and spigot joints with rubber rings

uPVC pipes and fittings:

Soil, waste and vent pipes and fittings shall be solvent weld jointed

Excavations

No claim for rock excavation will be entertained unless the contractor has timeously notified the quantity surveyor thereof prior to backfilling

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Septic tank

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	"Soft rock" and "hard rock" shall be as defined in "Earthworks"				
	Laying, backfilling, bedding, etc. of pipes				
	Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' instructions				
	Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SABS 1200 L : Medium-pressure pipelines LD : Sewers LE : Storm water drainage Pipe trenches etc shall be backfilled in accordance with clauses 3, 5.5, 5.6, 5.7 and 7 of SABS 1200 DB : Earthworks (Pipe trenches) Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SABS 1200 LB : Bedding (Pipes). Unless otherwise described bedding of rigid pipes shall be class B bedding				
	EXCAVATION, FILLING, ETC OTHER THAN BULK				
	EARTHWORKS				
	SITE CLEARANCE ETC				
	Site clearance				
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc	m2	9		
2	Rip and scarify ground level to a depth of 150mm and consolidate to 90% mod. AASHTO density (minimum CBR 3)	m2	9		
	EARTHWORKS				
	Excavate in earth not exceeding 2m deep				
3	Septic tank	m3	17		
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	Extra over trench and hole excavations in earth for excavations in				
1	Soft rock	m3	1		
2	Hard rock	m3	2		
	Extra over all excavations for carting away				
3	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	20		
	Risk of collapse of excavations				
4	Risk of collapse of sides of excavations for septic tank from natural, elevated or reduced ground level exceeding 1,5m deep	m2	28		
	Keeping excavations free of water				
5	Allow for keeping all excavations entirely free from water and mud		Item		
	FILLING ETC				
	Filling of natural gravel material (G5) supplied by the contractor, compacted to 95% Mod AASHTO density				
6	Under floors, steps, pavings, etc	m3	5		
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES, ETC				
	25Mpa/20mm concrete				
7	Surface bed of septic tank	m3	2		
8	Slab of septic tank	m3	2		
	SMOOTH FORMWORK (DEGREE OF ACCURACY II)				
	Smooth formwork to sides				
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	Smooth formwork to soffits				
1	Slabs propped up exceeding 1.5m and not exceeding 3.5m high	m2	9		
	Smooth formwork to sides and soffits				
	REINFORCED CONCRETE				
	30Mpa/20mm concrete				
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	REINFORCED CONCRETE				
	30Mpa/20mm concrete				
1	Slabs	m3	2		
	UNREINFORCED CONCRETE				
	19Mpa/20mm concrete behind sockets at 2mm centres maximum				
2	Anchor blocks	m3	5		
	CONCRETE SUNDRIES				
	Finishing top surfaces of concrete smooth with a power float				
3	Surface beds, slabs, etc	m2	17		
	ROUGH FORMWORK (DEGREE OF ACCURACY II)				
	Rough formwork to soffits				
4	Slabs propped up exceeding 1.5m and not exceeding 3m high	m2	9		
	Formwork to sides				
5	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	12		
	REINFORCEMENT				
	Mild steel reinforcement to structural concrete work				
6	8mm Diameter bars	t	0.36		
7	10mm Diameter bars	t	0.36		
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	High tensile steel reinforcement to structural concrete work				
1	10mm Diameter bars	t	0.36		
2	12mm Diameter bars	t	0.36		
	Fabric reinforcement				
3	Type 617 fabric reinforcement in concrete surface beds	m2	9		
4	Type 617 fabric reinforcement in concrete slabs etc	m2	9		
	MASONRY				
	Brickwork in burnt clay bricks in (5:1) cement mortar				
5	One brick wall	m2	28		
6	Brick reinforcement 150mm wide built into brick walls with sufficient laps at end joints, angles and intersections (measured net)	m	84		
	WATERPROOFING				
	DAMP PROOFING OF WALLS AND FLOORS				
	One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape				
7	Under surface beds	m2	30		
8	Vertically behind walls	m2	73		
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	Primer and two coats heavy duty bitumen emulsion waterproof coating, ABE membrane or similar approved				
1	On concrete floors	m2	8		
2	On walls in foundations (Provisional)	m2	57		
	WATERPROOFING TO ROOFS, BASEMENTS, ETC				
	Prime with one coat bitumen primer and one layer 4mm fully bonded waterproof membrane comprising two bitumen layers reinforced with woven spun bonded polyester fabric and coated with polyethylene film for heat bonding, laid with 75mm side and 100mm end laps				
3	On soffits of slab	m2	9		
4	On flat roofs	m2	9		
5	On walls	m2	57		
6	On bottoms and sides of floor ducts, channels, etc	m2	2		
	PROTECTIVE STONE DRESSING				
	Clean crushed stone dressing free of pyrite or other contaminants, of 20 - 25mm stone evenly spread with larger stones around outlets				
7	Stone dressing behind walls	m3	73		
	PLUMBING AND DRAINAGE				
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	UPVC pipes				
1	110mm Pipes in trenches	m	50		
	Extra over 110mm uPvc pipes for fittings				
2	Standard invert junction	No	4		
	Manhole ring, cover adapter and lid				
3	750mm Diameter , 250mm Long manhole ring and 750mm Round cover adaptor slab with 560mm Diameter Hole, 150mm Thick Slab and 560mm Diameter heavy duty concrete lid	No	1		
	Sundries				
4	Hole through one brick wall for 110mm pipe	No	1		
	FRENCH DRAIN				
	EARTHWORKS				
	Excavate in earth not exceeding 2m deep				
5	Trench	m3	7		
	Extra over trench and hole excavations in earth for excavations in				
6	Soft rock	m3	0.4		
7	Hard rock	m3	1		
	Risk of collapse to sides				
8	Sides of trench excavations not exceeding 1,5m deep	m2	20		
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	Carting away excavated material				
1	Surplus excavated material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	7		
	Back filling with material supplied by the contractor				
2	40-50mm washed stone filling to french drain	m3	7		
	REINFORCEMENT				
	Fabric reinforcement				
3	Type 617 fabric reinforcement in concrete slabs etc	m2	5		
	Bidium U14 geotextile blanket				
4	Laid with 150mm overlaps to top of stone fill in french drain	m2	22		
	uPVC pipes				
5	110mm Perforated drain pipes laid between stones in french drain	m	12		
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	KIOSK AND DISTRIBUTION BOARD				
	Kiosk and distribution board				
	Supply rate				
1	Main Kiosk complete with breakers & doors	No	1		
	Install rate				
2	Main Kiosk complete with breakers & doors	No	1		
	Main - Distribution Board (DB/ABTT) - Flush Architrive complete with breakers & doors				
	Supply rate				
3	Main - Distribution Board (DB/ABTT) - Flush Architrive complete with breakers & doors	No	1		
	Install rate				
4	Main - Distribution Board (DB/ABTT) - Flush Architrive complete with breakers & doors	No	1		
	Sub - Distribution Board - Flush Architrive complete with breakers & doors				
	Supply rate				
5	Sub - Distribution Board - Flush Architrive complete with breakers & doors	No	2		
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Section 7
ELECTRICAL INSTALLATION
Bill No. 1
Kiosk and distribution board

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	Install rate				
1	Sub - Distribution Board - Flush Architrive complete with breakers & doors	No	2		
	Allowance for breakers installed on site				
	Earth Leakage QA17C 63A 1P + N 6kA				
	Supply rate				
2	Earth Leakage QA17C 63A 1P + N 6kA	No	2		
	Install rate				
3	Earth Leakage QA17C 63A 1P + N 6kA	No	2		
	Surge Arrester with Indication 1 Pole + N 6kA				
	Supply rate				
4	Surge Arrester with Indication 1 Pole + N 6kA	No	3		
	Install rate				
5	Surge Arrester with Indication 1 Pole + N 6kA	No	3		
	Surge Protection and Voltage Limiting Devices (FLP-B+C MAXI V SPD)				
	Supply rate				
6	Surge Protection and Voltage Limiting Devices (FLP-B+C MAXI V SPD)	No	3		
	Install rate				
7	Surge Protection and Voltage Limiting Devices (FLP-B+C MAXI V SPD)	No	3		
	MCCB 80A 3P				
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ELECTRICAL INSTALLATION
Bill No. 1
Kiosk and distribution board

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	Supply rate				
1	MCCB 80A 3P	No	1		
	Install rate				
2	MCCB 80A 3P	No	1		
	MCB QA1 5A 1P				
	Supply rate				
3	MCB QA1 5A 1P	No	2		
	Install rate				
4	MCB QA1 5A 1P	No	2		
	MCB QA1 10A 1P				
	Supply rate				
5	MCB QA1 10A 1P	No	10		
	Install rate				
6	MCB QA1 10A 1P	No	10		
	MCB QA1 20A 1P				
	Supply rate				
7	MCB QA1 20A 1P	No	11		
	Install rate				
8	MCB QA1 20A 1P	No	11		
	MCB QA1 20A 2P				
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ELECTRICAL INSTALLATION
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Kiosk and distribution board

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	Supply rate				
1	MCB QA1 20A 1P	No	8		
	Install rate				
2	MCB QA1 20A 1P	No	8		
	MCB QA1 40A 2P				
	Supply rate				
3	MCB QA1 40A 2P	No	5		
	Install rate				
4	MCB QA1 40A 2P	No	5		
	MCB QA1 40A 3P				
	Supply rate				
5	MCB QA1 40A 2P	No	4		
	Install rate				
6	MCB QA1 40A 2P	No	4		
	MCB QA1 63A 3P				
	Supply rate				
7	MCB QA1 63A 3P	No	1		
	Install rate				
8	MCB QA1 63A 3P	No	1		
	MCB QA1 80A 3P				
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Kiosk and distribution board

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	Supply rate				
1	MCB QA1 80A 3P	No	2		
	Install rate				
2	MCB QA1 80A 3P	No	2		
	MCB QA1 100A 3P				
	Supply rate				
3	MCB QA1 100A 3P	No	1		
	Install rate				
4	MCB QA1 100A 3P	No	1		
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Bill No. 1

Kiosk and distribution board

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	BILL No. 2				
	LIGHT FITTINGS AND ALL ACCESSORIES SUCH AS POLES, HOLES E.T.C				
	Light, fittings and all accessories such as poles, holes etc.				
	Type F- Outdoor Wall mount bulkhead, 20W, 1800 lm, IP65, 220 - 240V AC				
	Supply rate				
1	Type F- Outdoor Wall mount bulkhead, 20W, 1800 lm, IP65, 220 - 240V AC	No	28		
	Install rate				
2	Type F- Outdoor Wall mount bulkhead, 20W, 1800 lm, IP65, 220 - 240V AC	No	28		
	Type B - Indoor ceiling mounted 18W Bulkhead/LED/1200 Lumen				
	Supply rate				
3	Type B - Indoor ceiling mounted 18W Bulkhead/LED/1200 Lumen	No	11		
	Install rate				
4	Type B - Indoor ceiling mounted 18W Bulkhead/LED/1200 Lumen	No	11		
	Type C - Enclosed dust and waterproof and corrosion resistant fluorescent Luminaire with LED Tubes				
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	Supply rate				
1	Type C - Enclosed dust and waterproof and corrosion resistant fluorescent Luminaire with LED Tubes	No	2		
	Install rate				
2	Type C - Enclosed dust and waterproof and corrosion resistant fluorescent Luminaire with LED Tubes	No	2		
	Type 3L - 3 X 22W,4FT, T5, 600 X 600 Long Recessed Flourescent Fitting With Low Brightness Reflector With Cord				
	Supply rate				
3	Type 3L - 3 X 22W,4FT, T5, 600 X 600 Long Recessed Flourescent Fitting With Low Brightness Reflector With Cord	No	33		
	Install rate				
4	Type 3L - 3 X 22W,4FT, T5, 600 X 600 Long Recessed Flourescent Fitting With Low Brightness Reflector With Cord	No	33		
	Type DL- Downlight 18W LED				
	Supply rate				
5	Type DL- Downlight 18W LED	No	21		
	Install rate				
6	Type DL- Downlight 18W LED	No	21		
	Type SL/HL - Mutto Unfold Red Pendant, Size: 325mm, Mounting: Suspended.Wattage:80W				
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	Supply rate				
1	Type SL/HL - Mutto Unfold Red Pendant, Size: 325mm, Mounting: Suspended.Wattage:80W	No	9		
	Install rate				
2	Type SL/HL - Mutto Unfold Red Pendant, Size: 325mm, Mounting: Suspended.Wattage:80W	No	9		
	Strong Room Emergency Red Light				
	Supply rate				
3	Strong Room Emergency Red Light	No	1		
	Install rate				
4	Strong Room Emergency Red Light	No	1		
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Light, fittings and all accessories such as poles, holes etc.

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Light, fittings and all accessories such as poles, holes etc.

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Item No			Quantity	Rate	Amount
	SECTION 7				
	BILL No. 3				
	SWITCHES, SOCKETS AND POWER SKIRTING				
	Switches, sockets and power skirting				
	Ceiling mount high frequency motion sensor with toggle switches (360°, 3-8m sensing range)				
	Supply rate				
1	Ceiling mount high frequency motion sensor with toggle switches (360°, 3-8m sensing range)	No	18		
	Install rate				
2	Ceiling mount high frequency motion sensor with toggle switches (360°, 3-8m sensing range)	No	18		
	16 Amp, 1 lever, 1 way, flush mounted switch complete with cover and galvanised box				
	Supply rate				
3	16 Amp, 1 lever, 1 way, flush mounted switch complete with cover and galvanised box	No	8		
	Install rate				
4	16 Amp, 1 lever, 1 way, flush mounted switch complete with cover and galvanised box	No	8		
	16 Amp, 2 lever, 1 way, flush mounted switch complete with cover and galvanised box				
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	Supply rate				
1	16 Amp, 2 lever, 1 way, flush mounted switch complete with cover and galvanised box	No	4		
	Install rate				
2	16 Amp, 2 lever, 1 way, flush mounted switch complete with cover and galvanised box	No	4		
	16 Amp, 3 lever, 1 way, flush mounted switch complete with cover and galvanised box				
	Supply rate				
3	16 Amp, 3 lever, 1 way, flush mounted switch complete with cover and galvanised box	No	2		
	Install rate				
4	16 Amp, 3 lever, 1 way, flush mounted switch complete with cover and galvanised box	No	2		
	16 Amp, 1 lever, 2 way flush mounted switch complete with cover and galvanised box				
	Supply rate				
5	16 Amp, 1 lever, 2 way flush mounted switch complete with cover and galvanised box	No	2		
	Install rate				
6	16 Amp, 1 lever, 2 way flush mounted switch complete with cover and galvanised box	No	2		
	16 Amp, 1 lever, 3 way flush mounted switch complete with cover and galvanised box				
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	Supply rate				
1	16 Amp, 1 lever, 3 way flush mounted switch complete with cover and galvanised box	No	3		
	Install rate				
2	16 Amp, 1 lever, 3 way flush mounted switch complete with cover and galvanised box	No	3		
	16 Amp, 2 lever, 2 way flush mounted switch complete with cover and galvanised box				
	Supply rate				
3	16 Amp, 2 lever, 2 way flush mounted switch complete with cover and galvanised box	No	1		
	Install rate				
4	16 Amp, 2 lever, 2 way flush mounted switch complete with cover and galvanised box	No	1		
	Type ZS 20A "National" type "or similar approved mounted in a weatherproof "York Box" enclosure.				
	Supply rate				
5	Type ZS 20A "National" type "or similar approved mounted in a weatherproof "York Box" enclosure.	No	2		
	Install rate				
6	Type ZS 20A "National" type "or similar approved mounted in a weatherproof "York Box" enclosure.	No	2		
	Switch for 5W Dimmable down lights (Silicon controlled) with 2 lever				
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	Supply rate				
1	Switch for 5W Dimmable down lights (Silicon controlled) with 2 lever	No	1		
	Install rate				
2	Switch for 5W Dimmable down lights (Silicon controlled) with 2 lever	No	1		
	16 Amp flush mounted single pole switched socket (3 pin triangular) with 3 pin euro (SANS 164-2) complete with galvanised box				
	Supply rate				
3	16 Amp flush mounted single pole switched socket (3 pin triangular) with 3 pin euro (SANS 164-2) complete with galvanised box	No	2		
	Install rate				
4	16 Amp flush mounted single pole switched socket (3 pin triangular) with 3 pin euro (SANS 164-2) complete with galvanised box	No	2		
	16 Amp flush mounted double pole socket (3 pin triangular) with double 3 pin euro (SANS 164-2) complete with galvanised box				
	Supply rate				
5	16 Amp flush mounted double pole socket (3 pin triangular) with double 3 pin euro (SANS 164-2) complete with galvanised box	No	30		
	Install rate				
6	16 Amp flush mounted double pole socket (3 pin triangular) with double 3 pin euro (SANS 164-2) complete with galvanised box	No	30		
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	2 Channel PVC power skirting complete with covers, bends, splices and all accessories				
	Supply rate				
1	2 Channel PVC power skirting complete with covers, bends, splices and all accessories	m	15		
	Install rate				
2	2 Channel PVC power skirting complete with covers, bends, splices and all accessories	m	15		
	16 Amp normal single pole switched socket outlets in power skirting including covers and fixing material				
	Supply rate				
3	16 Amp normal single pole switched socket outlets in power skirting including covers and fixing material	No	7		
	Install rate				
4	16 Amp normal single pole switched socket outlets in power skirting including covers and fixing material	No	7		
	16 Amp, 3pin normal euro switched socket outlets in power skirting including covers and fixing material				
	Supply rate				
5	16 Amp, 3pin normal euro switched socket outlets in power skirting including covers and fixing material	No	7		
	Install rate				
6	16 Amp, 3pin normal euro switched socket outlets in power skirting including covers and fixing material	No	7		
	Weather Proof Box 2X4 S1				
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	Supply rate				
1	Weather Proof Box 2X4 S1	No	2		
	Install rate				
2	Weather Proof Box 2X4 S1	No	2		
	FD4 Pedestal, floor mounting complete with 1x normal plugs 16A, 1x dedicated plugs 16A				
	Supply rate				
3	FD4 Pedestal, floor mounting complete with 1x normal plugs 16A, 1x dedicated plugs 16A	No	1		
	Install rate				
4	FD4 Pedestal, floor mounting complete with 1x normal plugs 16A, 1x dedicated plugs 16A	No	1		
	9 Way cluster unit complete with normal plug, dedicated plug, 2 pin plug, data point and telephone point				
	Supply rate				
5	9 Way cluster unit complete with normal plug, dedicated plug, 2 pin plug, data point and telephone point	No	3		
	Install rate				
6	9 Way cluster unit complete with normal plug, dedicated plug, 2 pin plug, data point and telephone point	No	3		
	Flush mounted 40 Amp 2P isolator complete for Air Conditioning				
	Supply rate				
7	Flush mounted 40 Amp 2P isolator complete for Air Conditioning	No	8		
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	Install rate				
1	Flush mounted 40 Amp 2P isolator complete for Air Conditioning	No	8		
	Outdoor, Surface mounted 30 Amp 2P isolator complete for Air Conditioning				
	Supply rate				
2	Outdoor, Surface mounted 30 Amp 2P isolator complete for Air Conditioning	No	8		
	Install rate				
3	Outdoor, Surface mounted 30 Amp 2P isolator complete for Air Conditioning	No	8		
	Flush mounted 30 Amp 2P isolator complete for Hand dryer units				
	Supply rate				
4	Flush mounted 30 Amp 2P isolator complete for Hand dryer units	No	3		
	Install rate				
5	Flush mounted 30 Amp 2P isolator complete for Hand dryer units	No	3		
	Flush mounted 20 Amp 2P isolator complete for toilets extractor				
	Supply rate				
6	Flush mounted 20 Amp 2P isolator complete for toilets extractor	No	3		
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	Install rate				
1	Flush mounted 20 Amp 2P isolator complete for toilets extractor	No	3		
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	BILL No. 4				
	CABLE TRENCHING, CABLE, TERMINATION, CABLE LABELLING AND CABLE WARNING TABLE				
	Cable trenching, cable, termination, cable labelling and cable warning table				
	35 mm² 4C PVC SWA Cable with earth wire				
	Supply rate				
1	35 mm² 4C PVC SWA Cable with earth wire	m	150		
	Install rate				
2	35 mm² 4C PVC SWA Cable with earth wire	m	150		
	Cable teminations				
	Supply rate				
3	Cable teminations	No	15		
	Install rate				
4	Cable teminations	No	15		
	10 mm² 4c PVC SWA Cable with earth wir				
	Supply rate				
5	10 mm² 4c PVC SWA Cable with earth wir	m	80		
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Cable trenching, Cable, Termination, cable labelling and cab

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	Install rate				
1	10 mm² 4c PVC SWA Cable with earth wir	m	80		
	Cable teminations				
	Supply rate				
2	Cable teminations	No	8		
	Install rate				
3	Cable teminations	No	8		
	6 mm² 4c PVC SWA Cable with earth wire				
	Supply rate				
4	6 mm² 4c PVC SWA Cable with earth wire	m	150		
	Install rate				
5	6 mm² 4c PVC SWA Cable with earth wire	m	150		
	Cable teminations				
	Supply rate				
6	Cable teminations	No	15		
	Install rate				
7	Cable teminations	No	15		
	4 mm² 4c PVC SWA Cable with earth wire				
	Supply rate				
8	4 mm² 4c PVC SWA Cable with earth wire	m	130		
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Cable trenching, Cable, Termination, cable labelling and cab

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	Install rate				
1	4 mm² 4c PVC SWA Cable with earth wire	m	130		
	Cable teminations				
	Supply rate				
2	Cable teminations	No	13		
	Install rate				
3	Cable teminations	No	13		
	3 x 1,5 mm² PVC insulated				
	Supply rate				
4	3 x 1,5 mm² PVC insulated	m	3 500		
	Install rate				
5	3 x 1,5 mm² PVC insulated	m	3 500		
	1.5 mm² copper earth wire				
	Supply rate				
6	1.5 mm² copper earth wire	m	3 500		
	Install rate				
7	1.5 mm² copper earth wire	m	3 500		
	3 x 2,5 mm² PVC insulated				
	Supply rate				
8	3 x 2,5 mm² PVC insulated	m	2 500		
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	Install rate				
1	3 x 2,5 mm² PVC insulated	m	2 500		
	2.5 mm² copper earth wire				
	Supply rate				
2	2.5 mm² copper earth wire	m	2 500		
	Install rate				
3	2.5 mm² copper earth wire	m	2 500		
	3 x 4 mm² PVC insulated				
	Supply rate				
4	3 x 4 mm² PVC insulated	m	100		
	Install rate				
5	3 x 4 mm² PVC insulated	m	100		
	4 mm² copper earth wire				
	Supply rate				
6	4 mm² copper earth wire	m	100		
	Install rate				
7	4 mm² copper earth wire	m	100		
	3 x 6 mm² PVC insulated				
	Supply rate				
8	3 x 6 mm² PVC insulated	m	50		
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Cable trenching, Cable, Termination, cable labelling and cab

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	Install rate				
1	3 x 6 mm² PVC insulated	m	50		
	6 mm² copper earth wire				
	Supply rate				
2	6 mm² copper earth wire	m	50		
	Install rate				
3	6 mm² copper earth wire	m	50		
	Cable warning Tape (320mm Wide)				
	Supply rate				
4	Cable warning Tape (320mm Wide)	m	255		
	Install rate				
5	Cable warning Tape (320mm Wide)	m	255		
	Cable labelling				
	Supply rate				
6	Cable labelling		Item		
	Install rate				
7	Cable labelling		Item		
	Trenching (300mm wide X 600mm deep) and backfilling in compacted layers (300mm), including bedding and installation of warning tape above cable.				
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Cable trenching, Cable, Termination, cable labelling and cab

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	Supply rate				
1	Trenching (300mm wide X 600mm deep) and backfilling in compacted layers (300mm), including bedding and installation of warning tape above cable.	m	255		
	Install rate				
2	Trenching (300mm wide X 600mm deep) and backfilling in compacted layers (300mm), including bedding and installation of warning tape above cable.	m	255		
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Bill No. 4

Cable trenching, Cable, Termination, cable labelling and cable warning table

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	BILL No. 5				
	CONDUIT , SLEEVES, BOSAL, INCLUDING ALL ACCESSORIES SUCH AS BENDS ELBOWS AND SADDLES				
	Conduit , sleeves, bosal, including all accessories such as bends elbows and saddles				
	20 mm Ø PVC (Power & Data) conduit				
	Supply rate				
1	20 mm Ø PVC (Power & Data) conduit	m	1 845		
	Install rate				
2	20 mm Ø PVC (Power & Data) conduit	m	1 845		
	25 mm Ø PVC (Power & Data) conduit				
	Supply rate				
3	25 mm Ø PVC (Power & Data) conduit	m	615		
	Install rate				
4	25 mm Ø PVC (Power & Data) conduit	m	615		
	25 mm Ø galvanised conduit				
	Supply rate				
5	25 mm Ø galvanised conduit	m	100		
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Bill No. 5
Conduit , Sleeves, Bosal, including all accessories such as

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	Install rate				
1	25 mm Ø galvanised conduit	m	100		
	30 mm Ø galvanised conduit				
	Supply rate				
2	30 mm Ø galvanised conduit	m	50		
	Install rate				
3	30 mm Ø galvanised conduit	m	50		
	50 mm Ø PVC conduit/Kabelflex Sleeve				
	Supply rate				
4	50 mm Ø PVC conduit/Kabelflex Sleeve	m	128		
	Install rate				
5	50 mm Ø PVC conduit/Kabelflex Sleeve	m	128		
	1 & 2 way round conduit box.				
	Supply rate				
6	1 & 2 way round conduit box.	No	74		
	Install rate				
7	1 & 2 way round conduit box.	No	74		
	3 & 4 way round conduit box.				
	Supply rate				
8	3 & 4 way round conduit box.	No	74		
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Bill No. 5
Conduit , Sleeves, Bosal, including all accessories such as

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	Install rate				
1	3 & 4 way round conduit box.	No	74		
	Cable Trays: P8000, Wire Mesh and Hangers including (Trunking, Elbows, DB entry, Cabined entry, Tee Joints, other accessories)				
	Supply rate				
2	Cable Trays: P8000, Wire Mesh and Hangers including (Trunking, Elbows, DB entry, Cabined entry, Tee Joints, other accessories)	m	20		
	Install rate				
3	Cable Trays: P8000, Wire Mesh and Hangers including (Trunking, Elbows, DB entry, Cabined entry, Tee Joints, other accessories)	m	20		
	Cable Trays: P9000, Wire Mesh and Hangers including (Trunking, Elbows, DB entry, Cabined entry, Tee Joints, other accessories)				
	Supply rate				
4	Cable Trays: P9000, Wire Mesh and Hangers including (Trunking, Elbows, DB entry, Cabined entry, Tee Joints, other accessories)	m	20		
	Install rate				
5	Cable Trays: P9000, Wire Mesh and Hangers including (Trunking, Elbows, DB entry, Cabined entry, Tee Joints, other accessories)	m	20		
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Bill No. 5

Conduit , Sleeves, Bosal, including all accessories such as bends elbows and sad

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	BILL No. 6				
	EARTHING SYSTEM AND LIGHTNING PROTECTION				
	Earthing system and Lightning protection				
	Earthrods should ideally be spaced approximately 10m intervals and connected to the earth wire to achieve equal potential bonding.1500mm Copper Earthrods/spikes for Equipotential Bonding Links				
	Supply rate				
1	Earthrods should ideally be spaced approximately 10m intervals and connected to the earth wire to achieve equal potential bonding.1500mm Copper Earthrods/spikes for Equipotential Bonding Links	No	19		
	Install rate				
2	Earthrods should ideally be spaced approximately 10m intervals and connected to the earth wire to achieve equal potential bonding.1500mm Copper Earthrods/spikes for Equipotential Bonding Links	No	19		
	Supply and Install Down Alluminium rod strictly in accordance with the relevant SANS & IEC Specifications. 50mm2 Aluminium Rods				
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Earthing system and Lightning protection

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	Supply rate				
1	Supply and Install Down Alluminium rod strictly in accordance with the relevant SANS & IEC Specifications. 50mm2 Aluminium Rods	No	57		
	Install rate				
2	Supply and Install Down Alluminium rod strictly in accordance with the relevant SANS & IEC Specifications. 50mm2 Aluminium Rods	No	57		
	Supply and install Bare Stranded Copper wires in trenches including termination for Equipotential Bonding strictly in accordance with the relevant SANS & IEC Specifications. 50mm2 copper cable				
	Supply rate				
3	Supply and install Bare Stranded Copper wires in trenches including termination for Equipotential Bonding strictly in accordance with the relevant SANS & IEC Specifications. 50mm2 copper cable	m	57		
	Install rate				
4	Supply and install Bare Stranded Copper wires in trenches including termination for Equipotential Bonding strictly in accordance with the relevant SANS & IEC Specifications. 50mm2 copper cable	m	57		
	Bonding of water mains-bond the proposed water main to the adjacent down conductor. All water pipes, hand basins, sinks, baths, gutters and rain water pipes shall be bonded.				
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Earthing system and Lightning protection

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	Supply rate				
1	Bonding of water mains-bond the proposed water main to the adjacent down conductor. All water pipes, hand basins, sinks, baths, gutters and rain water pipes shall be bonded.		Item		
	Install rate				
2	Bonding of water mains-bond the proposed water main to the adjacent down conductor. All water pipes, hand basins, sinks, baths, gutters and rain water pipes shall be bonded.		Item		
	UT1 Boxes (Lighting protection inspection Box)				
	Supply rate				
3	UT1 Boxes (Lighting protection inspection Box)	No	19		
	Install rate				
4	UT1 Boxes (Lighting protection inspection Box)	No	19		
	Cable bonding-all external earth wires and cable armouring from the incoming and outgoing cables will be properly crimped into cable lugs and bolted to their respective earth bars.				
	Supply rate				
5	Cable bonding-all external earth wires and cable armouring from the incoming and outgoing cables will be properly crimped into cable lugs and bolted to their respective earth bars.		Item		
	Install rate				
6	Cable bonding-all external earth wires and cable armouring from the incoming and outgoing cables will be properly crimped into cable lugs and bolted to their respective earth bars.		Item		
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Bill No. 6
Earthing system and Lightning protection

Ga-Phasha Skills Centre

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	Supply and install 1.2m copper coated earth spike at every Distribution Board				
	Supply rate				
1	Supply and install 1.2m copper coated earth spike at every Distribution Board	No	4		
	Install rate				
2	Supply and install 1.2m copper coated earth spike at every Distribution Board	No	4		
	Trenching (300mm wide X 500mm deep) and backfilling in compacted layers (300mm), including bedding and installation of warning tape above cable.				
	Supply rate				
3	Trenching (300mm wide X 500mm deep) and backfilling in compacted layers (300mm), including bedding and installation of warning tape above cable.	m	57		
	Install rate				
4	Trenching (300mm wide X 500mm deep) and backfilling in compacted layers (300mm), including bedding and installation of warning tape above cable.	m	57		
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Section 7
ELECTRICAL INSTALLATION
Bill No. 6
Earthing system and Lightning protection

Ga-Phasha Skills Centre

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Section 7

Bill No. 6

Earthing system and Lightning protection

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Item No			Quantity	Rate	Amount
	SECTION 7				
	BILL No. 7				
	ETHERNET NETWORK RETICULATION				
	Ethernet network Reticulation				
	9U Wall Box - Glass Front; Lockable; 2 Posts with L Profiles; 1x Fan; 1x Fixed Shelf				
	Supply rate				
1	9U Wall Box - Glass Front; Lockable; 2 Posts with L Profiles; 1x Fan; 1x Fixed Shelf	No	1		
	Install rate				
2	9U Wall Box - Glass Front; Lockable; 2 Posts with L Profiles; 1x Fan; 1x Fixed Shelf	No	1		
	24 Port Patch Panel				
	Supply rate				
3	24 Port Patch Panel	No	1		
	Install rate				
4	24 Port Patch Panel	No	1		
	24 Port 5500 HP POE Switch				
	Supply rate				
5	24 Port 5500 HP POE Switch	No	1		
	Carried to Summary			R	

Section 7
ELECTRICAL INSTALLATION
Bill No. 7
Ethernet network Reticulation

Ga-Phasha Skills Centre

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	Install rate				
1	24 Port 5500 HP POE Switch	No	1		
	D-Link 24 Port				
	Supply rate				
2	D-Link 24 Port	No	1		
	Install rate				
3	D-Link 24 Port	No	1		
	RJ45 CAT6 Wall Boxes				
	Supply rate				
4	RJ45 CAT6 Wall Boxes	No	2		
	Install rate				
5	RJ45 CAT6 Wall Boxes	No	2		
	RJ45 Connector - Cat6				
	Supply rate				
6	RJ45 Connector - Cat6	No	4		
	Install rate				
7	RJ45 Connector - Cat6	No	4		
	CAT6 UTP Cable Grey				
	Supply rate				
8	CAT6 UTP Cable Grey	m	250		
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Section 7
ELECTRICAL INSTALLATION
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Ethernet network Reticulation

Ga-Phasha Skills Centre

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	Install rate				
1	CAT6 UTP Cable Grey	m	250		
	Fibre Optic Cable				
	Supply rate				
2	Fibre Optic Cable	m	100		
	Install rate				
3	Fibre Optic Cable6	m	100		
	RJ45 outlets for data points in power skirting, floor pedestal, 9way cluster unit with cover plates				
	Supply rate				
4	RJ45 outlets for data points in power skirting, floor pedestal, 9way cluster unit with cover plates	No	9		
	Install rate				
5	RJ45 outlets for data points in power skirting, floor pedestal, 9way cluster unit with cover plates	No	9		
	Unifi UAP-AC-Pro dual band 2.4/5GHz n/ac access points				
	Supply rate				
6	Unifi UAP-AC-Pro dual band 2.4/5GHz n/ac access points	No	1		
	Install rate				
7	Unifi UAP-AC-Pro dual band 2.4/5GHz n/ac access points	No	1		
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Section 7
ELECTRICAL INSTALLATION
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Section 7

Bill No. 7

Ethernet network Reticulation

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ELECTRICAL INSTALLATION
Bill No. 7
Ethernet network Reticulation

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Item No		Quantity	Rate	Amount
	SECTION 7			
	BILL No. 8			
	ALLOW THE FOLLOWING PROVISIONAL AMOUNTS			
	Allowance for the electrical connection fee for a 100kVA transformer, 3-phase, 400V supply			
	Allowance for the electrical connection fee for a 100kVA transformer, 3-phase, 400V supply			
	Supply and install			
1	Allowance for the electrical connection fee for a 100kVA transformer, 3-phase, 400V supply	Item		100 000.00
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Bill No. 8
Provisional amounts

Ga-Phasha Skills Centre

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5	Conduit , Sleeves, Bosal, including all accessories such as bends elbows and sad	231	
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7	ELECTRICAL INSTALLATION	242		
	Sub-total		R	
	SKILLS DEVELOPMENT			
	Provide the sum of R140 000.00 (One Hundred and Forty Thousand Rand only) for Skills Development.		SUM	
	Sub-total		R	
	CONTINGENCY			
	Allow a contingency amount of R300 000-00 (Three Hundred Thousand Rand only) to be used as directed by the Principal Agent.		SUM	
	Sub-total		R	
	Add : Value added Tax @ 15%		R	
	Total Carried to Form of Offer and Acceptance		R	

Ga-Phasha Skills Centre

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PART C3 SCOPE OF WORKS

1. SCOPE OF WORK/ DELIVERABLES

The company bid proposal must cover, but not limited to the following:

The successful service provider will be expected to ensure the following specific deliverables, an understanding of which must be reflected in the project proposal:
The Contractor will be required to provide site preparation works, superstructure (the project consists of a main skills centre, the simulation area, the guard house, and the feature wall), roof, finishings (Plastering, Painting,

Tiling, and Carpentry & Joinery) as well as electrical & mechanical fittings and fixtures. Install electrical infrastructure on the completion of work and submit an approved Electrical Certificate of Compliance.

Bidders might be invited to make a presentation as part of the selection process.

b. TEMPORARY WORKS

The contractor will be responsible for the erection of work sheds and all necessary preliminary site preparations to enable him to commence work on the erection of the buildings. This will include ablution facilities and water connections.

The site will be used as a work placement for skills development.

NB: Successful service providers may be subject to the vetting and due diligence process before appointment by the Services SETA.

2. THE DURATION OF ASSIGNMENT

It is envisaged that the project will be for a period of 12 months.

PART C3.1: SPECIAL NOTES TO BIDDERS

The following special conditions are for compliance and attention to bidders:

1.1. Services SETA reserve the right to call interviews with short-listed bidders before final selection.

1.2. Services SETA reserve the right to conduct supplier due diligence prior to final award or at any time during the contract period. This may include surprise site visits.

1.3. Services SETA reserve the right to appoint the bidder that proves to be fully capable and qualified to handle and execute the job.

1.4. The proposals submitted must be in line with the detailed specification.

1.5. Services SETA reserve the right to cancel or withdraw this bid if:

i. Due to changed circumstances, there is no longer a need for this services; or
ii. Funds are no longer available to cover the total envisaged expenditure; or
iii. No acceptable bids are received; or
iv. There is a material irregularity in the Bid process.

1.6. In the case of sub-contracting or joint venture agreement, Services SETA will enter into a single contract with the principal bidder.

1.7. Bidders who are not registered on Central Supplier Database (CSD) must register before submission of bids.

1.8. Any completion of the bid document in pencil or erasable ink will not be acceptable and will automatically disqualify the submitted bid.

1.9. Successful bidder will be required to sign and enter into a formal contract upon the award.

1.10. Notwithstanding shortcomings and/or inconsistencies, if any, in this specification, which is only a minimum specification, a bidder shall make provision for a complete solution that will deliver the required service efficiently and cost-effectively.

1.11. Bid documents must be submitted physically to the closing address as reflected on the Request for Quotations.

1.12. Quotations received after the closing date and time will not be accepted for consideration.

1.13. This request for bid document contains confidential information about Services SETA, which has been provided to supply potential bidders with the data necessary to provide a holistic response.

1.14. No part of the contents may be used, copied, disclosed or conveyed in whole or in part to any party, in any manner whatsoever without the prior written permission of Services SETA.

1.15. Any reproduction or transmission of information contained in this document except for the sole purpose of responding to this bid is strictly prohibited.

References to Services SETA must not be made in any literature, promotional material, and brochures

or sales presentations without the express written consent of Services SETA.

PART C3.2: OHS SPECIFICATIONS

HEALTH AND SAFETY SPECIFICATIONS

for

for the Construction

of

GA-PHASHA SKILLS CENTRE

Prepared By: Praxos 373

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PROJECT SPECIFIC OCCUPATIONAL HEALTH AND SAFETY SPECIFICATIONS LIST OF ABBREVIATIONS

AIA	**Approved Inspection Authority**
BRA	**Baseline Risk Assessment**
BoQ	**Bill of Quantities**
CoW	**Clerk of Works**
CC	**Compensation Commissioner**
CHSO	**Construction Health & Safety Officer**
COIDA	**Compensation for Occupational Injury and Diseases Act**
CR	**Construction Regulations 2014**
CWP	**Construction Work Permit**
DMR	**Driven Machinery Regulations**
DoE&L	**Department of Employment & Labour**
DSTI	**Daily Safety Task Instruction**
FEMA	**Federated Employers Mutual Association**
JBCC	**Joint Building Conditions of Contract**
GAR	**General Administrative Regulations**
GSR	**General Safety Regulations**
HCSR	**Hazardous Chemical Substances Regulations**
HIRA	**Hazard Identification Risk Assessment**
H&S	**Health & Safety**
ER	**Engineer's Representatives**
OHSA	**Occupational Health and Safety Act No. 85 of 1993 (as amended)**
(PC)	**Principal Contractor**
PPE	**Personal Protective Equipment**
RTA	**Road Traffic Safety Act No. 93 of 1996 (as amended)**
SABS	**South African Bureau of Standards (Authority)**
SACPCMP	**South African Council for the Project and Construction Management Professions**
SARTSM	**South African Roads Traffic Safety Manual, Chapter 2, Volume 13 of 1999**

SANS	**South African National Standards (Authority)**
SDS	**Safety Data Sheet**
SSHSP	**Site-Specific Health and Safety Plan**
SSHSS	**Site-Specific Health and Safety Specification**
SMME	**Small, Micro, Medium Enterprise**
SWP	**Safe Work Procedure**

DEFINITIONS

The definitions used will be those set out in the Regulation Gazette No GNR.85 of February 2014 with the following additions:

Client: SERVICES SETA.

Designer: Means a competent person appointed by the Client as Agent to design**.**

Principal contractor (PC): Means a competent person appointed by the Client to perform construction work.

Hazard: Source of exposure to danger.

Hazard Identification and Risk Assessment (HIRA) and Risk Control:

Means a documented plan which identifies hazards, assesses the risks, and details the control measures and safe working procedures which are to be used to mitigate and control the occurrence of hazards and risks during construction or operation phases.

Health and Safety Practitioner: Means any person who acts as a representative for the Client in managing the overall health and safety work as their responsible person.

Health and Safety Plan: Means a documented plan which answers to the Project Specific Health and Safety Specification; including all the supporting documentation that indicate how the Principal Contractor or Contractor plans to manage H & S for the duration of the Contract.

Induction Training: Means an introductory training on general health and safety issues given to all employees and visitors to the site before the commencement of work on site.

Risk: Means the probability or likelihood that a hazard can result in injury or damage.

Regulation/s: Shall mean the relevant regulation/s promulgated in terms of the Occupational Health and Safety Act, No. 85 of 1993.

Site: Means the area in the possession of the Principal Contractor for the construction of the works. Where there is no demarcated boundary it will include all adjacent areas, which are reasonably required for the activities of the Principal Contractor and approved for such use by the Designer.

The Act: Means, unless the context indicates otherwise, the Occupational Health and Safety Act, No.85 of 1993 and Regulations promulgated thereunder, as amended.

KEY REFERENCES

- Occupational Health and Safety Act No.85 of 1993 and Regulations (as amended)
- Compensation for Injury and Occupational Diseases Act No. 100 of 1993 (as amended)
- Joint Building Conditions of Contract (JBCC)
- South African Bureau of Standards (SABS) 1200
- South African Roads Traffic Safety Manual (SARTSM) Chapter 2, Volume 13 of
- 1999 Road Traffic Safety Act No.93 of 1996 (as amended)
- SANS Code 10400
- Construction Regulations 2014
- Disaster Management Act

1. PREAMBLE

SERVICES SETA has a responsibility to limit its risk by ensuring a zero tolerance and best practice approach to Contractors and those affiliated with their projects. Thus, a high premium is placed on the health and safety (H&S) of **SERVICES SETA** stakeholders, which include its employees, professional service providers, public and its physical assets. The responsibilities of relevant stakeholders have toward its employees are captured in but not limited to this document. Primarily, the compliance will be with the Occupational Health and Safety Act (OHSA) No.85 of 1993, and thus this document amplifies the areas of concern or risk that could negatively affect the contract, and all parties concerned. The responsibilities stem from both moral, civil and a variety of legal obligations. The Principal Contractor (PC) (which include nominated, selected Principal Contractors (PC)s are to take due cognisance of the aforementioned.

SERVICES SETA, as the Client and their appointed Implementing Agent, on its behalf, have through this document provided a site-specific Health & Safety Specification (SSHSS) for the project, this document will be updated as changes occur.

1.1 Purpose of the Site-Specific Health and Safety Specification (SSHSS)

The SSHSS is a performance specification to ensure that the Client and any bodies that enter into formal agreements with the Client viz. Agents, Professional Service Consultants, Principal Contractor (PC), and Contractors achieve an acceptable level of Health and Safety performance. No advice, approval of any document required by the SSHSS, such as hazard identification and risk assessments (HIRA), or any other form of communication from the Client shall be construed as acceptance by the Client of any obligation that absolves the Principal Contractor (PC) from achieving the required level of performance and compliance with legal requirements. Furthermore, there is no acceptance of liability by the Client, which may result from the Principal Contractor (PC) failing to comply with the SSHSS, i.e. the Principal Contractor (PC) remains responsible for achieving the required performance levels. A Mandatory Agreement in terms of Section 37.2 of the OHSA will be signed between parties prior to any works commencing. Such agreements will be signed between all parties on site. The SSHSS highlights the aspects to be implemented over and above the minimum

requirements of current legislation. Regulations may be changed should new risks or issues be identified that could not have been foreseen during the design phase of the project, or during the construction phase. Any new legislation or standards **(legislated or determined) by SERVICES SETA** that is promulgated or accepted during the contract will automatically be applied.

1.2 Implementation of the Site-Specific Occupational Health and Safety Specifications

The SSHSS is an integral part of the Contract, and Principal Contractor (PC)s are required to make it an integral part of their Contracts with Contractors and Suppliers. A SSHSS will be available for each level of Contract and Contractor and must be complied with. This specification must be read in conjunction with the OHS Act, Regulations (as amended) and any other standards relating to work being done and ensure compliance thereto. The information relative to the scope of the project, the works etc. are detailed in the tender, are to be considered when developing the H&S plan and associated documentation. The summary of risks is included in Section 2 of the SSHSS.

The Occupational Health & Safety Act section 37.2 Mandatory Agreement must be fully completed by the Principal Contractor (PC)s, supplied by the Client. These documents shall be deemed to form part of the returnable Contract Documents. No work may commence without the written approval of the H&S plan by the H&S responsible person acting on behalf of the Client. Should there be design changes or change in the scope of works, an amended SSHSS may be issued. Where amended SSHSSs are issued, the Principal Contractor (PC) will be required to ensure a resubmission of an amended H&S plan for approval. Further to this, the Principal Contractor (PC) must ensure that similar information must be provided as it applies to the works to all their Contractors, within 5 working days following notification thereof. The OHS Representative will visit the project as deemed necessary by the Client and will ensure compliance and limit risk. All activities on the site and all appropriate documentation will be monitored and reported on to the Client and the Contractor. The site will be visited as agreed upon with the Client / Contractor, dependent upon the risk, activities, or issues identified requiring follow up. Non-conformances will be addressed and dealt with by the Contractor in the form of a corrective action report. Communication between the Client and the Principal Contractor (PC) will be through the OHS Representative (or Client's responsible person), as determined at the commencement of the project.

1.3 Requirements to be submitted with the Site-Specific H&S plan (SSHSP)

The Principal Contractor (PC) shall ensure adequate information is submitted as supporting documentation with his completed H&S Plan. A site-specific H&S Plan in response to this SSHSS will be subject to approval by the Client's responsible person and Principal Contractor (PC)s relative to their Contractors. This must include all supporting documentation as required to verify the H&S system.

- A declaration to the effect that he has the competence and necessary resources to carry out the work safely in compliance with the Occupational Health and Safety Act and its Regulations.
- A valid letter of Good Standing.

- Detailed technical method statements against the construction programme by the Construction Manager.
- The Construction Health and Safety Officer-CHSO is a registered individual to provide input for appropriate HIRA and safe work procedures (SWPs):
- Site establishment including:
- Power, and other services.
- An emergency plan indicating how and where emergencies will be handled.
- Working at heights (fall protection plan, competence and training, weather).
- Employee occupational medical fitness, and
- Electrical, mechanical and pressure equipment competencies and certification of personnel
- Further method statements are to be submitted prior to, and during the project where changes or new work is required, and the approval of the Designer/Client/Agent is required before work on that aspect or activity can commence.

The CHSO is to be included in production planning sessions/meetings to ensure that the appropriate risk assessments, safe work procedures (SWPs) and communication required are available and completed timeously.

2. General Requirements

2.1 Summary of Risks identified during Design

The summary of risks provided is to point the contractor towards some risks he may not be aware of during tendering stage and while developing his formal risk assessments for the project. The summary of design risks and the management thereof should be included in the Principal Contractors (PC) risk assessments. Where there are other Contractors appointed to do work, the Principal Contractor (PC) is to ensure that Contractors include such information in their risk assessments.

The summary is to be developed following the completion of the Baseline Risk Assessment (BRA), and to include the residual risks as they apply to the project.

ASPECTS OF THE PROJECT RESIDUAL RISKS IDENTIFIED TO BE MANAGED

Establishment/ de-establishment	Erecting of building or placement of containers, working with lifting equipment, the possibility of crushing, damage to property.
Services: temporary electrical, water use of temporary and permanent power supply to the site	Use of and sewage supplies. An electrical contractor to do the permanent supply. Serious injury, electrocution, shock, fatalities.
Excavations	Excavations to be restricted to the maximum required depth as required for services, sewer tie-ins and water, strip foundations and conservancy tanks. Geotechnical survey report to be referred to for the correct shoring and dust management required.

Working at heights	Extensive working at heights for all building and finishing of the structure, internally and externally. Accessing and fitting structures according to designs and finishes. Maximum working heights expected to be roof height.
Building Work	Multiple brick structures to be erected and other structures as per the drawings. Use of temporary works, housekeeping, and repetitive work are major risks.
Landscaping	Use of herbicides, grassing and moving of plants, trees, and irrigation systems mostly at the end of the project.
Electrical work	Electrical work to be undertaken by competent and registered Electrician. COC (Certificate of Compliance) to be issued by competent Electrician.
Traffic accommodation, movement of staff	No staff transportation on open vehicles on or off-site. Mobile plant and general equipment to be managed to limit the risk of persons being knocked over. Relevant warning signage to be erected on-site.
Civil works	Management of dust, movement of staff and equipment on-site to be managed by implementing an effective dust suppression system. Water to be brought in as and when there is no supply to the site.
Communication	Effective communication to be maintained between the Client, Clients Representative, and the Contractor. Reporting requirements will be determined at the commencement of the project.
General	Working among other contractors and interfacing, exposure to risks created by other contractors. Lack of supervision, competencies of SMMEs and labour. New designs and changes to designs to be managed and include updates in the SSHSP and SSRA. Rework may be necessary, requiring the use of grinders, breakers exposure to dust, noise and working in awkward positions for extended periods. Weather, discomfort index to be considered and addressed in emergency planning and working hours. Medical surveillance should include lung functions and audiometry screening unless evidence to indicate no dust or noise exposure.

2.2 Specified Hazardous Chemical Substances (HCSs)

The following lists of products or substances are those which have been identified as likely to be used on the project. This list is not exclusive, and other products may be considered. Where the Principal Contractor (PC) is likely to supply the product as the product has not been specified, safety data sheets (SDSs) need to be considered prior to all selections. Adequate training, Toolbox talks are to include HCSs to be used on the project, and proof thereof available.

PRODUCTS / SUBSTANCES / RISKS	**POTENTIAL HEALTH OR OTHER RISKS** **A full list of SDSs is to be maintained according to products risk and specified by Designers on site staff, contractors**
LPG (Gas bottles)	LPG for waterproofing, heating of bitumen, Fire, explosions, burns,
Cement/Silica dust	Caused by cutting, grinding, sanding of any concrete/tiled surface/masonry. Other activities create noise and vibration.
Grouts or sealants, epoxies	May be used in terms of patching or works to repair or fix components into position. Activating agents can be carcinogenic and have other health issues.
Sewage, effluent	Raw sewage with health risks such as hepatitis and other issues due to cleaning and using portable chemical toilets and clearing conservancy tanks. Care to be taken using non-formaldehyde enzyme or bacterial products. Limit ratio of toilet uses to ensure no spillage and daily cleaning.
Primers and paints: acrylic PVA, zinc phosphate primers, polyurethane enamels, water proofing products	Drying of the skin, dermatitis, volatile inhalation.
Herbicides, weed poisons	Inhalation can be carcinogenic, liver, central nervous system. Herbicides, weed poisons damage.

3. OCCUPATIONAL HEALTH & SAFETY MANAGEMENT

3.1 Structure and Organization of H&S Responsibilities

A project format Organogram must be included in the H&S plan, signed, and dated, and be kept updated for the duration of the project. A project directory will be updated by the Project Manager, and a copy should be kept by the Health and Safety Representative for reference purposes.

3.1.1 Notification of Commencement of Construction Work

The Provincial Director of the Department of Labour will be notified by the Principal Contractor (PC) upon receipt of the Letter of Acceptance of project commencement in accordance with the Construction Regulations. Copy to be emailed to Client and Client representative.

4. HEALTH AND SAFETY PLAN FRAMEWORK

The Health and Safety (H&S) aspects related to the project outlined in the previous sections are to be considered when drawing up the H&S Plan. The Principal Contractor (PC) is required to demonstrate competence by providing a H&S system that will address the requirements of the project. The current legislative requirements, SANS 10400, SANS 10085, and any other standards that may guide practice, are to be taken into consideration and may be provided by the building Principal Contractor (PC). The following aspects must be addressed in the H&S Plan, as they have been identified in section 2, as playing a role in reducing the overall risk of a particular activity, or section of the project. The Client responsible person may from time-to-time request additions or systems as they relate to the works or legislative requirements at the time. The Principal Contractor (PC) is to prepare a site layout drawing to indicate at least the following:

- Indicate the positions of emergency personnel and equipment (fire, first aiders, and first aid posts);
- Contractor site, services, and access.
- Traffic routes.
- Site access and control.
- Storage areas (materials and equipment, waste etc. relating to housekeeping, stacking and storage);
- Emergency assembly points, and such layouts are to be updated regularly throughout the project.

4.1 Appointment of Competent Site Personnel

The Chief executive officer (CEO) (OHSA S16.1) of the Principal Contractor (PC) will take overall responsibility for the appointment of a competent Construction Manager CR8(1) and site staff for the duration of the project. The H&S responsibilities are to be delegated to the Assistant CEO (OHSA 16.2). Knowledge and training in H&S are required, and certificates indicating H&S training as well as experience to be included in CVs. All other legal appointments are to be made with relevance to the type of work required and kept current with the project programme. The construction team is to ensure the Pr CHSO is kept up to date with all planned activities, to ensure all H&S requirement are met. All construction/technical method statements are to be generated by senior site personnel, and the appropriate risk assessment development therefrom in conjunction with the Pr CHSO. The Site-specific specifications-SSHSP shall include the following, but is not limited to the following key appointments:

4.1.1 Construction Supervision

Competent supervisors will be appointed to manage part or all the works and have training and/or experience in their area of responsibility. All site supervisors must show evidence of appropriate training in H&S, and an understanding or training in areas of responsibility (i.e. risk assessments, method statements etc.) The Supervisors will be held responsible for the safety of working teams and subordinates, housekeeping and stacking and storage of materials. The various competencies for working with electricity and equipment and other specialised work areas are to be included and clearly identified on the project Organogram. Toolbox talks are to be facilitated by each of the supervisors.

4.1.2 Construction Health and Safety Officer (CHSO)

The Principal Contractor (PC) must employ and appoint a competent CHSO for the duration of the contract or area of work. The appointed CHSO must be registered and in good standing with SACPCMP. The Principal Contractor (PC) and CHSO are to always ensure effective communication between all contractors and the Client, and ensure all Contractors have similar standards as appropriate for the level and risk of the work.

A monthly report of all H&S activities and incidents is required by the date agreed on the contract by CHSO for project longer than 1 month. The format of the monthly report will be agreed on between the Client and Client Representative. The CHSO will be responsible for collating the H&S documentation at the close out of the project in electronic format. A list of the typical aspects that should be provided is available as Annexure A to this document. The Principal Contractor (PC) is to ensure that all Contractors documentation follows the same requirements, and close out H & S documentation must be completed and be available with the close out of the main contract.

4.1.3 Traffic Safety

The Contractor will be responsible for ensuring that daily traffic management is adequately managed. No worker may be transported in, or on the rear of construction vehicles (bakkies include), or with plant and materials to, on, from site. The number of passengers in any vehicle is limited to what is stated on the license disc. Ensure adequate and relevant warning signage is erected and maintained.

4.2 Health and Safety Representatives

The HS Representative is to ensure that all site staff, supervision, and Contractors comply with the Principal Contractor (PC)'s H&S Plan. No new workers or Contractors may commence work without approval or following the H&S plan as submitted, or submission of their OHS File for approval to Principal Contractor (PC) CHSO prior to commencing work on site. The Health and Safety Representative is to conduct site inductions for all employees and visitors on site. The Health and Safety Representative may not be removed or replaced without the PR CHSO being informed, nor may the site be left unattended for more than 1 day without adequate, competent supervision. Health and Safety Representative to be appointed and trained.

4.3 Appointment of Competent Contractors

Principal Contractor (PC)s is to ensure compliance with the Clients minimum standards and all legislative requirements. The same H&S standards required of the Principal Contractor (PC) are to be applied to all Contractors. An index of all Contractors and Suppliers is to be on file and always kept updated and approved by the Contracts Manager. The Principal Contractor (PC) is to ensure there is sufficient funding for H&S compliance by each Contractor. The following minimum aspects are applicable to any Contractor appointed:

- The CHSO is to ensure a contractor's appointment and approval of H & S documentation at least seven (7) working days prior to commencing work. No contractor may work under the Principal Contractor (PC)s Compensation registration number. If required, the Principal Contractor (PC) may assist SMMEs with their registration with the Compensation Commissioner. However, such Contractors will not be able to commence work until proof of registration, or Letter of Good Standing has been received.
- No work may commence without Mandatory agreements between parties in place. The following aspects are applicable to Suppliers or short-term works (surveying, repairs, servicing, deliveries etc.). Cognisance is to be taken of the level of risk involved and the H&S Officer is to ensure the level of H&S documentation is appropriate:
- Mandatory agreements in place.
- Letter of Good Standing.
- Method statements and risk assessments.
- Medical certificates of fitness
- Safety data sheets (SDSs)

5. GENERAL RISK MANAGEMENT

5.1 Health Risks and Medical Surveillance

The appropriate SDSs (Safety Data Sheets) are to be obtained for all products and used to develop the H&S documentation as they relate to the work. All workers (including Contractors) are to be included in the medical surveillance programme. Ergonomic risks are to be included in the site and task specific risk assessments, and all workers (including those of Contractors) are to be included in the medical surveillance programme.

Workers will be exposed to some noise, dust due to the type of plant, materials specified and the general nature of the works. Environmental monitoring for the general construction will be done by the Principal Contractor (PC) for the entire site unless a particular risk is evident and thus be done by that Contractor. Environmental monitoring results and risk assessments are to be made available to the occupational health professionals doing the medical surveillance. All workers (including Sub-Contractors and site staff of Contractor, where the definition ‘construction work’ is met) are required to be in possession of a valid medical certificate of fitness prior to commencing work issued by an Occupational Health Practitioner. Medical records to be kept on file. Full medical records are not to be placed in the H&S file. Specific testing for existing conditions and limitations relative to exposure could include, but are not limited to:

- Audiometry (hearing tests);
- Lung function tests, and
- Any other tests identified as relevant from chemical or specifically identified risks of exposure.
- Working at heights

5.1.1 General Environmental Conditions

Copies of the relevant reports and actions taken in respect of these are to be placed in the H&S file. The Principal Contractor (PC) may wish to keep record of the site reports completed by an external professional.

5.1.2 Noise Risks

All plant from plant hire companies (suppliers) or that are owned by the Principal Contractor (PC) is to be compliant with the Noise Induced Hearing Loss Regulations. Plant identified that has not been tested and marked for noise emissions will result in having to be tested at the Contractors or Principal Contractor (PC)s expense. Failure to do so within a reasonable period will result in such plant being removed from site. Suitable SANS hearing protective equipment shall be issued and worn where noise levels are identified as equal to or greater than 85dB.

5.2 Emergency Procedures

A simple emergency plan and procedure that is appropriate to the risks is required prior to commencement on site. It is advised that the system should be simple and easy for any worker to follow. The plan may be adapted should new information or risks be identified. Liaison between all Contractors is to be dealt with in the documentation and a joint emergency procedure will be required. The emergency plan is to be adapted according to the overall site H&S requirements. The Emergency Management Plan is to ensure the inclusion of local service providers where possible. Such arrangements with these persons should be made prior to the commencement of the project. The general principals of emergency management are to be applied as it applies to the hierarchy of control and management. The plan shall detail the response in relation to the works, and include at least (but not limited) the following key elements:

- Appointment of a competent emergency response co-ordinator
- Fire
- Public injury
- Motor vehicle accidents
- Fall from heights
- Serious injury to workers (medical or work-related) and
- Any other major risks identified during risks assessments
- Structural collapse
- Snake bite
- Civil unrest

5.2.1 First Aiders and First Aid Equipment

A competent First aider to be appointed in writing with valid proof of competency to assist with first aid response and the increased chance of survival. The First aider shall always be available and accessible on site and these requirements include Contractors. Contractor's emergency staff are to be able to work as a team with the Principal Contractor (PC) when responding to any emergency on the project. Contractors are expected to ensure compliance and provide/manage their own first aiders and equipment. The Principal Contractor (PC) may determine further requirements to limit risk. Appropriately stocked, controlled first aid kits are to always be available and to assure continual availability and accessibility on site. First aid kits to be inspected monthly to ensure the minimum contents as per the General Safety Regulations.

5.2.2 Fires and Emergency Management

It is advisable that the emergency response system should be simple and easy for any worker to follow. The plan may be adapted should new information or risks be identified. Labour unrest is to be included in the emergency plan. First aiders shall be available in each emergency team and be able to work as a team when responding to any emergency on the project. Liaison with the other Contractors on site will be required. Fire extinguishers will be appropriate for the risk and in sufficient numbers to deal with the type of fires that could occur. The fire extinguishers to be inspected monthly and strategically placed on-site with the relevant signage erected. All mobile plant and equipment are to be fitted with or have fire extinguishers available.

5.2.3 Incident Management and Compensation Claims

All incidents and accidents are to be investigated. All serious incidents involving any form of disabling injury or fatality are to be reported to the Principal Contractor (PC)/Client/Clients Representative/Pr. CHSO and the Department of Employment & Labour immediately. This shall be confirmed in writing following the incident. Full details of incidents are to be included in each site meeting or when the Client responsible person visits site. A summary of incidents is to be included in the monthly report. This includes all minor incidents, and labour unrest. Failure to comply with emergency provisions will be considered a serious offence, and the project may be stopped if deemed inadequate for the work at the time of assessment or site inspection.

5.3 Personal Protective Equipment (PPE) and Clothing

The Principal Contractor (PC) shall identify the hazards in the workplace and provide mitigation measures. He must either remove them or, where impracticable, take steps to protect workers and make it possible for them to work safely and without risk to health under the hazardous conditions. Personal protective equipment (PPE) should, however, be the last resort and there should always first be an attempt to apply engineering and other solutions to mitigating hazardous situations before the issuing of PPE is considered. The hierarchy of hazard elimination must be followed before the option of personal protective equipment is considered. The following hierarchy of controls must be followed:

- Elimination

- Substitution – Using a cherry picker or man-lift instead of a ladder.
- Engineering Controls – Installing barrier railings; installing stairs instead of using vertical ladders.
- Administrative policies and procedures
- Personal protective equipment

Where it is not possible to create a safe and healthy workplace, the Principal Contractor (PC) shall inform employees regarding this and issue, free of charge, suitable equipment to protect them from any hazards being present and that allows them to work safely and without risk to their health and safety in the hazardous environment. It is a further requirement that the Principal Contractor (PC) maintain the said equipment that he instructs and trains the employees in the use of the equipment and ensures that the prescribed equipment is used by the employees. Employees do not have the right to refuse to use/wear the equipment prescribed by the Employer and, if it is impossible for an employee to use or wear prescribed protective equipment through health or any other reason, the employee cannot be allowed to continue working under the hazardous condition/s for which the equipment was prescribed but an alternate solution has to be found that may include relocating the employee. The Principal Contractor (PC) shall include in his OH&S plan the PPE he intends issuing to his employees for use during construction and the sanctions he intends to apply in cases of non-conformance by his employees. Conformance to the wearing PPE shall be discussed at the weekly inspection meetings. The Principal Contractor (PC) is to indicate how PPE is to be managed. All PPE provided to comply with the relevant SANS standards. The Principal Contractor (PC) shall ensure that all workers (including Contractors) are issued with and shall wear:

- Hard hats.
- Protective footwear.
- Overalls that ensure visibility.
- Any other necessary PPE identified from SDSs and/or risk assessments.

Adequate quantities of PPE shall be available. This shall include necessary PPE for visitors. Any person found on site without the necessary PPE will be removed from site until the PPE is supplied and worn.

5.4 Occupational Health and Safety Signage

Mandatory warning signage to be displayed at the site camp/office and work zones. These signs shall be in accordance with the requirements of the General Safety Regulations (GSRs) or SANS requirements, as amended. Signage is to be noted on the site drawings indicating where fixed/temporary signage is required. Temporary electrical signage is to be included for the temporary electrical supplies. All rules or signage provided by the Principal Contractor (PC) is to be adhered to.

5.5 Induction of Employees and Visitors, General H&S Training

Inductions must be carried out for all workers and visitors (including Client, Designers) to the site or area of work, over and above those done by the Principal Contractor (PC). Pre-task training in the form of toolbox talks or similar is required to ensure workers are familiar with

risks, and their mitigation for tasks to be done. Toolbox talks to be conducted on a weekly basis. DSTI Records, inductions and toolbox talks are to be kept in the H&S file. Any person found on site without evidence of induction will be removed from site until the proof of induction is supplied.

5.6 Management of Plant and Equipment

Close control of plant and equipment is required, including those belonging to or used by Subcontractors. Daily inspections of all plant and equipment is required prior to use. Full lists of hired and own plant are to be available at each audit. All daily inspection records are to be kept in the H&S file, or Subcontractors files where plant and equipment is brought onto site. Registers are to be current and up to date. All plant operators to be appointed, have valid proof of competency and in possession of a valid medical fitness certificate.

5.7 Excavations

A permit system is required for any excavations work deeper than 500mm and must be controlled by the CHSO of the Principal Contractor (PC). All equipment to be used on-site must be inspected prior to use, and ground conditions to be checked daily and prior to work commencement. Daily excavation registers to be up to date and available in the safety file. Excavation method statements and associated risk assessments are required. Ladders are to be available to ensure safe access and egress from excavations where necessary. Registers are to be kept current and placed in the H&S file. No homemade ladders are allowed on-site. All open excavations to be effectively barricaded (No Danger tape allowed) with the relevant warning signage erected. No excavations to be left open for an extended period. Noncompliance with working in open excavations will be stopped, and penalties applied.

5.8 Working at Heights

An appropriate, project-specific fall protection plan, developed by a competent person is to be developed and supplied as an addendum to the H&S plan. Method statements, appropriate HIRA, SWPs and training are to be available prior to work commencing. The CHSO needs to ensure the Contractors comply where appropriate or assist if needed. The focus for working at height shall include fall restraint systems where possible except during assembling or dismantling top components. The minimum, relevant SANS codes are to be applied as they apply to the works and the project, such as:

- SANS 10085, and
- SANS 10333 (parts 1-3).
- The plan is to be developed, and work managed by a competent person for the duration of the project. The following aspects must be included:
- Prevention of falling tools or equipment, and
- Link to emergency plan regarding rescue.

All workers are to be in possession of valid certificates of fitness that extend for the duration of the works. Note the requirements in the section relating to medical surveillance. Registers and all relevant documentation are to be placed in the H&S file. Work will be stopped if any work at heights is not compliant. For all working at heights, the contractor shall appoint a Fall Protection Planner. The Fall Protection Plan must be drafted in accordance with the

requirements of the Fall Protection Planner course (SAQA Unit Standard: 229994), considering any changes in the industry best practices, and will be assessed by the Client responsible person.

5.9 Electrical work and installations

All electrical installations are to be carried out in conformance with the Regulations as amended. Method statements and risk analyses must be compiled for each type of installation. Competencies and CVs, approvals of method statements must be in place. All temporary electrical supplies require to be properly identified, with appropriate signage. A competent person must be designated to supervise the work. Daily and other appropriate registers are required. CoC to be issued by a registered and competent person.

5.10 Auditing

The frequency of external auditing will be as agreed upon. The site will be inspected, and the documentation audited relative to verify past or completed activities, verify compliance of current activities and the H&S plan. The Health and Safety Representative must accompany the Client, Client's Representative, and/or the Pr. CHSO, on all audits and inspections. The CHSO is to apply a similar approach to managing their Contractors. The frequency of the audits may be increased if the Contractors are not performing adequately. Audit results will be acted upon, and non-conformances and penalties issued where deemed appropriate. The Client, may act, or require further outcomes if non-compliances are noted or unsafe acts are noted on site. Internal audits are to be completed and include site conditions as well as ensuring H&S files are appropriate and compliant. Comprehensive audit reports are to be made available, and the format of the audit reports is to be agreed upon between the Client and the Principal Contractors (PC) Pr. CHSO.

5.11 Communication on Site

All H&S communication during the project between the parties will be in writing, including the issuing and responses to non-conformances and H&S audit results. All H&S audit results must be communicated with all the relevant stakeholders.

5.12 Care of Workers on Site (Welfare)

Toilets must be provided by the Principal Contractor (PC) according to Section 30 of the CR2014. Separate toilets to be provided for Male and Female. Only bacterial or enzyme-based products may be used in portable toilets, such as those used in septic tanks. Toilets to be serviced weekly by the service provider. Proof of service and safe disposal of waste will be required. Sufficient potable water to be provided for employees on-site.

5.13 General housekeeping, stacking and storage

All supervisors are expected to be appointed and be responsible for their areas of work as it applies to general stacking, storage, and general housekeeping. Daily inspection sheets are required and must include the site camp and all working areas. Toolbox talks will address such issues and compliance noted in specific and general inductions. A 'clean as you go' approach is to be adopted. Each person is required to clear up after themselves, as well as further cleaning done if needed.

5.14 Discipline, Alcohol and Substance Abuse

All employees (management included) are to follow instructions given, in the interest of H&S. Disciplinary action is to be imposed on those who do not follow such instructions or company rules or policies. Evidence of disciplinary action where required is to be included in the closeout reports following incident investigations. The actions highlighted in the disciplinary reports are also to be followed through and closed out. No person is allowed to work or access site under the influence of alcohol or other substances that could impact on their own or others safety. The Principal Contractor (PC) is to have a drug and alcohol policy available to manage such instances. These requirements are applicable to any employee of any organization providing services on site.

5.15 Inclement Weather

All decisions regarding work stoppage due to inclement weather will be decided by the Construction Manager. The emergency plan to be followed.

5.16 Risk Assessment

RA Team to consist of the Contractor's Construction Manager, Specific Task Supervisor, and Specialists executing the job and Safety Officer.

- To be completed **one week** before the execution of a job,
- Each Contractor must submit a RA plan that will also include a monitoring and review plan
- **Align Safe Work Procedures** and **Safety Method statements to Risk Assessments**
- Each Supervisor to communicate Job Specific Risk Assessments to every person involved on the job and workers must sign acknowledgement the communication of and understanding the risks related to the job, and preventative measures and controls.

5.17 Safety Management Information Notice Boards

The Contractor must provide Safety Management Information notice boards (SMI boards) at the entrance of the site establishment area, with the following posted:

- Valid Letter of Good Standing (Workman's Compensation)
- Policies (SHE Policy, Alcohol Policy, HIV/Aids Policy, etc.)
- Emergency Contact Details
- First Aider Details (Photo & Contact Number)
- Construction manager/Supervisor Details (Photo & Contact Number)
- List of Subcontractors (Details and Contact Numbers)

6. HEALTH AND SAFETY FILE

The documentation submitted and approved following the award of the contract will be used to form the H&S file. The H&S file is required to be laid out in a logical manner, and documentation filed within the file is to be easily accessible, preferably according to the SSHHSS. The Principal Contractor (PC) is to refer to where the supporting evidence is in the accompanying or supporting documentation. For example, the PPE policy is not to be included

in the SSHSP but referenced in terms of where it can be found in the supporting documentation. The following completed information shall be included (but not be limited to) as part of the index:

- The SSHSS (and amendments);
- The SSHSP (and amendments), including approvals.
- Appointment by Client.
- Mandatory agreement with Client 37(2).
- Notification of construction work (copy).
- Legal Liability Insurance Cover
- Environmental Management Plan
- Organogram & Legal appointments
- A record of all working drawings, calculations, and design where applicable.
- Detailed list of Contractors with contact details, appointments, Mandatories etc., H&S specifications issued.
- Record of Competencies (CVs) and appointments.
- Training Records.
- Permits.
- Method Statements.
- Site Specific HIRA. (Hazard Identification Risk Assessment)
- Safe work procedures.
- Emergency and injury management.
- Safety data sheets
- Medical surveillance records (Certificates of Fitness, and job descriptions).
- Registers & Checklists
- Records of audits, minutes etc.
- Plant lists.
- Temporary electrical installations (CoCs).
- Employee records (who are on site).
- OHS Act and relevant regulations
- Updated letter of Good Standing with FEM / COIDA

The Principal Contractor (PC) shall ensure a similar system is applied to each Sub-Contractor.

ANNEXURE A

CLOSE-OUT REQUIREMENTS

The H&S files for all Contractors require closure and handover to the Principal Contractor at the completion of the project. The following list is an example of what should be included but is not exhaustive. The Client may require further information at the time of completion and the Principal Contractor (PC) will ensure that all instructions are met. Documentation would include all records from the start of the project. Daily or monthly plant inspection records are not required unless they are related to an accident. All records to be in electronic format and submitted to the OHS agent for approval in adequately formatted lists and folders. The layout should be logical and in the same order as in the site files.

Health and Safety close out file requirements include:

a) Client H&S Specification.
b) Principal Contractor's OHS Plan(s).
c) Organograms.
d) Legal Appointments.
e) Notification to Department of Labour of commencement of work.
f) Letters of Good Standing for the Project.
g) Incident Records.
h) Non-Conformance records.
i) Method Statements.
j) Risk assessments.
k) Safe work procedures.
l) Medical surveillance certificates of fitness. Medical records are to be kept according to the OH&S Act as amended.
m) List of Contractors
- Mandatory Agreements.
- Letters of Good Standing, and
- Appointments.

n) Copies of test results, policies, and procedures for environmental monitoring (silica, noise, dust etc.);
o) Audits.

Defect and Liability Period

The H&S files are to be kept 'live' for the defect and liability period by the Principal Contractor (PC), including those of their Contractors. Any work required during the defect and liability period will require an assessment of the H&S file by the Client prior to any work commencement.

ANNEXURE B: Hazard identification and risk register:

The following construction health and safety hazards are identified by the Client.

A. Hazard identification and risk register

Hazard	Task-machinery-installation exposure	Safety risk	Health risk
Noise	Roller-grinder-compactors-concrete cutters-all work within 3 meters of mobile plant	Acoustic trauma Communication error and accidents	Noise-induced hearing loss
Whole body Vibration	Mobile plant operators		Whole body vibration back and muscular strain
Hand arm Vibration	Grinders, jackhammers		Work-related upper limb disorder
Air Pressure	Compressed air	Explosion-fast moving air (skin & eye injury or solid particles (eye)	
Heat	Summer heat exposure	Heat exhaustion Heat stroke Dehydration	
Heat-hot parts	Cutting, welding, grinding	Burns	
Cold	Winter cold	Hypothermia Frost bite	
UV	Sun exposure, Welding	Skin burns Arc eyes	Skin cancer
Electricity	Electrical reticulation & portable machinery	Electrocution Fire	
Illumination	Glare		Stroboscopic Glare eye strain
Concrete chemicals	When additives are required	Skin, eye irritation	Respiratory irritation, Dermatitis
Engineering Chemicals		Bronchospasm – skin eye irritation	Asthma- dermatitis-Conjunctivitis
Organic Solvents	Turpentine, thinners, acetone, benzene, tars	Acute intoxication (inhaled, ingested, trans cutaneous)	Liver, brain, renal disease, skin
Crystalline silica	Hauling, mixing		Asthma, emphysema, lung cancer, tuberculosis
Fuels	Diesel, petrol, LPG	Fire, explosion	
Lifting/bending	All manual work	Acute muscular strain	Chronic muscular strain
Repetitive Actions	Most Labourer's manual work		Chronic muscular-synovial- skeletal damage

Prolonged standing	Most Labourer's manual work		Venous stasis, oedema, backache
Impact strain	Work with hammer, pick, spade		Headaches, muscular pain neck and shoulders
Tuberculosis	Current local epidemic + crystalline silica exposure		TB
Macro biological agents	Dogs, snakes, spiders, scorpions	Bites and poisons	Infections, diseases.
Fitness for duty	Alcohol - drugs	Accidents, fatality, damage to machinery and property	Alcohol and drug addiction
Employee wellness	Personal- social – financial- professional- health	Endanger other employees, visitors or public. Accidents, fatality	
Fatigue	Long hours of work Monotonous work (e.g. Flagging traffic)	Lacerations, fractures, caught in machine or traffic – death	
Dangerous work	Work with and amongst construction machinery Work with dangerous materials (flammables products) Working inside excavations. Dealing with public during traffic controls. Working at heights Concrete and rigging work - machinery	Lacerations, fractures, caught in machines, Local effects (skin, eye, respiratory), falls, death, assault, car accident	Skin, eye, respiratory disease
Dangerous equipment	Mobile Construction plant Moving vehicles Compressors and compressed air jets	Crushing, severe cuts, bruises, fractured/broken bones, fatality,	Airborne pollutants
Dangerous activities	Work in close vicinity of mobile plant Work close to moving parts of machinery Work inside excavation Work in drop zone	Crushing, severe cuts, bruises, fractured/broken bones, fatality.	Skin, eye, respiratory disease

Acknowledgement & Acceptance of the Health & Safety Specification

These specifications issued by the client shall provide the contractor with comprehensive guidelines, outlining the requirements, standards, and expectations for the project. These specifications will include detailed instructions on the scope of work, quality standards, timelines, and any relevant technical, safety, or regulatory guidelines. The contractor is expected to review the specifications carefully and ensure that all work performed adheres to these parameters. Any deviations from the issued specifications must be approved by the client in writing, and the contractor is responsible for ensuring that all work is completed in compliance with these instructions, Acts/ Regulations, bylaws throughout the duration of the project.

_____ _____

Client Responsible Person **Date**

I, _____ (print name in full), the undersigned responsible person (Contractors16.1 Appointee) for: _____ (company name) declare that I have read, understood and accept the responsibilities and requirements of this Site-Specific Health & Safety Specification for the project: _____.
I will ensure that this Site-Specific Health & Safety Specification is communicated to the relevant parties so that the requirements hereto can be complied with.

_____ _____

Contractor's Responsible Person **Date**

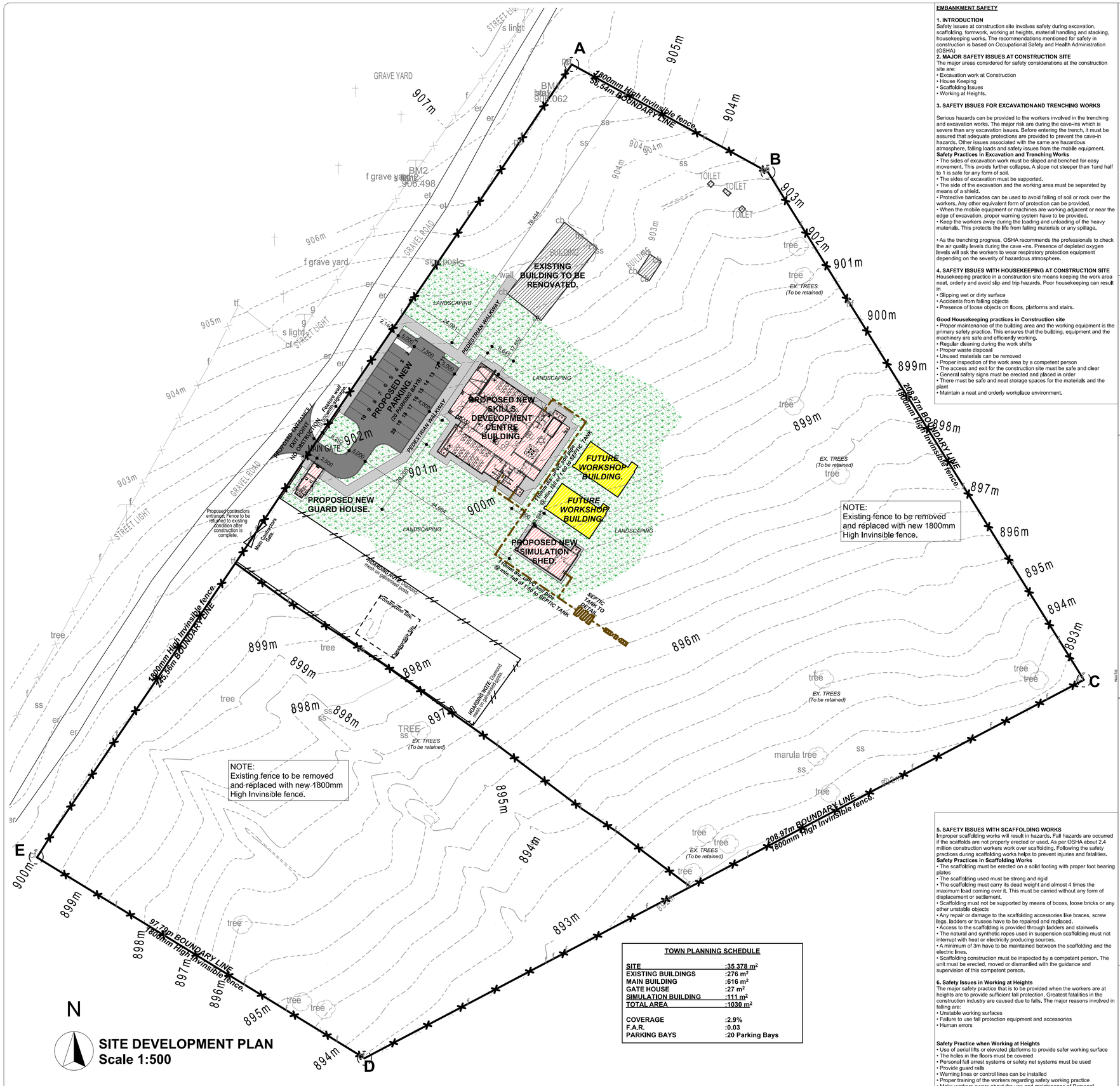
(16.1 Appointee)

PART C4 SITE INFORMATION

The project site is located at:

- 24°19'09"S 30°00'36"E

C4.1 DRAWINGS



EMBANKMENT SAFETY

1. INTRODUCTION
Safety issues at construction site involves safety during excavation, scaffolding, formwork, working at heights, material handling and stacking, housekeeping works. The recommendations mentioned for safety in construction is based on Occupational Safety and Health Administration (OSHA)

2. MAJOR SAFETY ISSUES AT CONSTRUCTION SITE
The major areas considered for safety considerations at the construction site are:
- Excavation work at Construction
- House Keeping
- Scaffolding Issues
- Working at Heights.

3. SAFETY ISSUES FOR EXCAVATIONAND TRENCHING WORKS

Serious hazards can be provided to the workers involved in the trenching and excavation works. The major risk are during the cave-ins which is severe than any excavation issues. Before entering the trench, it must be assured that adequate protections are provided to prevent the cave-in hazards. Other issues associated with the same are hazardous atmosphere, falling loads and safety issues from the mobile equipment.

Safety Practices in Excavation and Trenching Works
- The sides of excavation work must be sloped and benched for easy movement. This avoids further collapse. A slope not steeper than 1and half to 1 is safe for any form of soil.
- The sides of excavation must be supported.
- The side of the excavation and the working area must be separated by means of a shield.
- Protective barricades can be used to avoid falling of soil or rock over the workers. Any other equivalent form of protection can be provided.
- When the mobile equipment or machines are working adjacent or near the edge of excavation, proper warning system have to be provided.
- Keep the workers away during the loading and unloading of the heavy materials. This protects the life from falling materials or any spillage.

- As the trenching progress. OSHA recommends the professionals to check the air quality levels during the cave -ins. Presence of depleted oxygen levels will ask the workers to wear respiratory protection equipment depending on the severity of hazardous atmosphere.

4. SAFETY ISSUES WITH HOUSEKEEPING AT CONSTRUCTION SITE
Housekeeping practice in a construction site means keeping the work area neat, orderly and avoid slip and trip hazards. Poor housekeeping can result in
- Slipping wet or dirty surface
- Accidents from falling objects
- Presence of loose objects on floors, platforms and stairs.

Good Housekeeping practices in Construction site
- Proper maintenance of the building area and the working equipment is the primary safety practice. This ensures that the building, equipment and the machinery are safe and efficiently working.
- Regular cleaning during the work shifts
- Proper waste disposal
- Unused materials can be removed
- Proper inspection of the work area by a competent person
- The access and exit for the construction site must be safe and clear
- General safety signs must be erected and placed in order
- There must be safe and neat storage spaces for the materials and the plant
- Maintain a neat and orderly workplace environment.

5. SAFETY ISSUES WITH SCAFFOLDING WORKS
Improper scaffolding works will result in hazards. Fall hazards are occurred if the scaffolds are not properly erected or used. As per OSHA about 2.4 million construction workers work over scaffolding. Following the safety practices during scaffolding works helps to prevent injuries and fatalities.

Safety Practices in Scaffolding Works
- The scaffolding must be erected on a solid footing with proper foot bearing plates
- The scaffolding used must be strong and rigid
- The scaffolding must carry its dead weight and almost 4 times the maximum load coming over it. This must be carried without any form of displacement or settlement.
- Scaffolding must not be supported by means of boxes, loose bricks or any other unstable objects
- Any repair or damage to the scaffolding accessories like braces, screw legs, ladders or trusses have to be repaired and replaced.
- Access to the scaffolding is provided through ladders and stairwells
- The natural and synthetic ropes used in suspension scaffolding must not interrupt with heat or electricity producing sources.
- A minimum of 3m have to be maintained between the scaffolding and the electric lines.
- Scaffolding construction must be inspected by a competent person. The unit must be erected, moved or dismantled with the guidance and supervision of this competent person.

6. Safety Issues in Working at Heights
The major safety practice that is to be provided when the workers are at heights are to provide sufficient fall protection. Greatest fatalities in the construction industry are caused due to falls. The major reasons involved in falling are:
- Unstable working surfaces
- Failure to use fall protection equipment and accessories
- Human errors

Safety Practice when Working at Heights
- Use of aerial lifts or elevated platforms to provide safer working surface
- The holes in the floors must be covered
- Personal fall arrest systems or safety net systems must be used
- Provide guard rails
- Warning lines or control lines can be installed
- Proper training of the workers regarding safety working practice
- Make workers aware about the use and maintenance of Personal protective equipment (PPE)
- Check the working condition of the equipment working at heights.

TOWN PLANNING SCHEDULE

SITE	:35 378 m²
EXISTING BUILDINGS	:276 m²
MAIN BUILDING	:616 m²
GATE HOUSE	:27 m²
SIMULATION BUILDING	:111 m²
TOTAL AREA	:1030 m²
COVERAGE	:2.9%
F.A.R.	:0.03
PARKING BAYS	:20 Parking Bays

LOCALITY PLAN & WIND DIRECTION

REQUIREMENTS FOR PART XA OF THE NATIONAL BUILDING REGULATIONS

SANS 10400-XA:2011 4.2

The functional regulations cointaned in part XA of the National Building Regulations shall be deemed to be satisfied where in any building of occupancy classified in terms of Regulations A20 as A1, A2, A3, A4, C1, C2, E1, E2, E3, E4, F1, F2, F3, G1, H1, H2, H3, H4 and H5 :

1. The orientation and shading are in accordance with the requirements of SANS 204

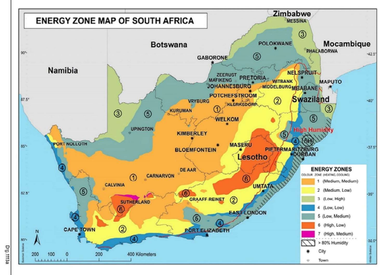
2. External walls are in accordance with the requirements of 4.4.3 of SANS 10400-XA:2011

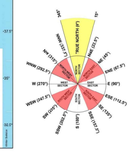
3. Fenestration is in accordance with the requirements of 4.4.4 of SANAS 10400-XA:2011

4. Roof assembly construction is in accordance with the requirements of 4.4.5 of SANS 10400-XA:2011

5. If in-slab heating is installed,it is in accordance with the requirements of 4.4.2 of SANS 10400-XA:2011

BUILDING DETAILS





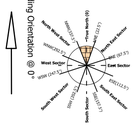
1 ORIENTATION AND SHADING

(a) ORIENTATION

In accordance with the requirements of SANS 204:2011-4.2

SANS 204:2011 4.1
Site layouts shall enable buildings to be for optional orientation given in figures

SANS 204:2011 4.2
Buildings shoud be orientated in accordance with figures B1 to B6 approximately true north. If buildings cannot be thus orientated, they shall be orientated to achieve the lowest net energy use.



(b) SHADING

In accordance with the requirements of SANS 204:2011-4.3.5

SANS 204:2011 4.5.1
Where shading is used,the building shall

(a) have a permanent feature such as veranda,balcony,fixed canopy,eaves or shading hood,which
(1) extends horizontally on both sides of the glazing for the same projection distance P
(2) provides the equivalent shading with a reveal or other shading element.

(b) have external shading device,such as a shutter,blind,vertical or horizontal building screen with blades,battens or slats,which
(1) is capable of restricting at least 80% of summer solar radiation,and
(2) if adjustable,is readily operated either manually,mechanically or electronically by the building occupants.

NOTE: Window on east & west facade to be shaded according to SANS 204:2011-4.3.5
For shading details,see fenestration schedule,plans,sections & elevations.

KEY LEGEND

- EXISTING BUILDING
- NEW PROPOSED
- DEMOLISH
- FUTURE DEVELOPMENT

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DESIGN APPROVAL:
Approved by: _____
Signature: _____
Date: _____

NO	REVISION	DATE

DEVELOPER

IMPLEMENTING AGENT:
SERVICES SETA

ARCHITECT
studioe-DESIGN
architecture + design
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Tel: 012 664 0168 Cell: 078 402 9298
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email: donald@studioe-design.co.za
www.studioe-design.co.za

PROJECT
PROPOSED NEW SKILLS DEVELOPMENT CENTRE AT GA-PHASHA VILLAGE

DRAWING
SITE PLAN

FILE NO.
53.2023_ SETA SKILLS CENTRE

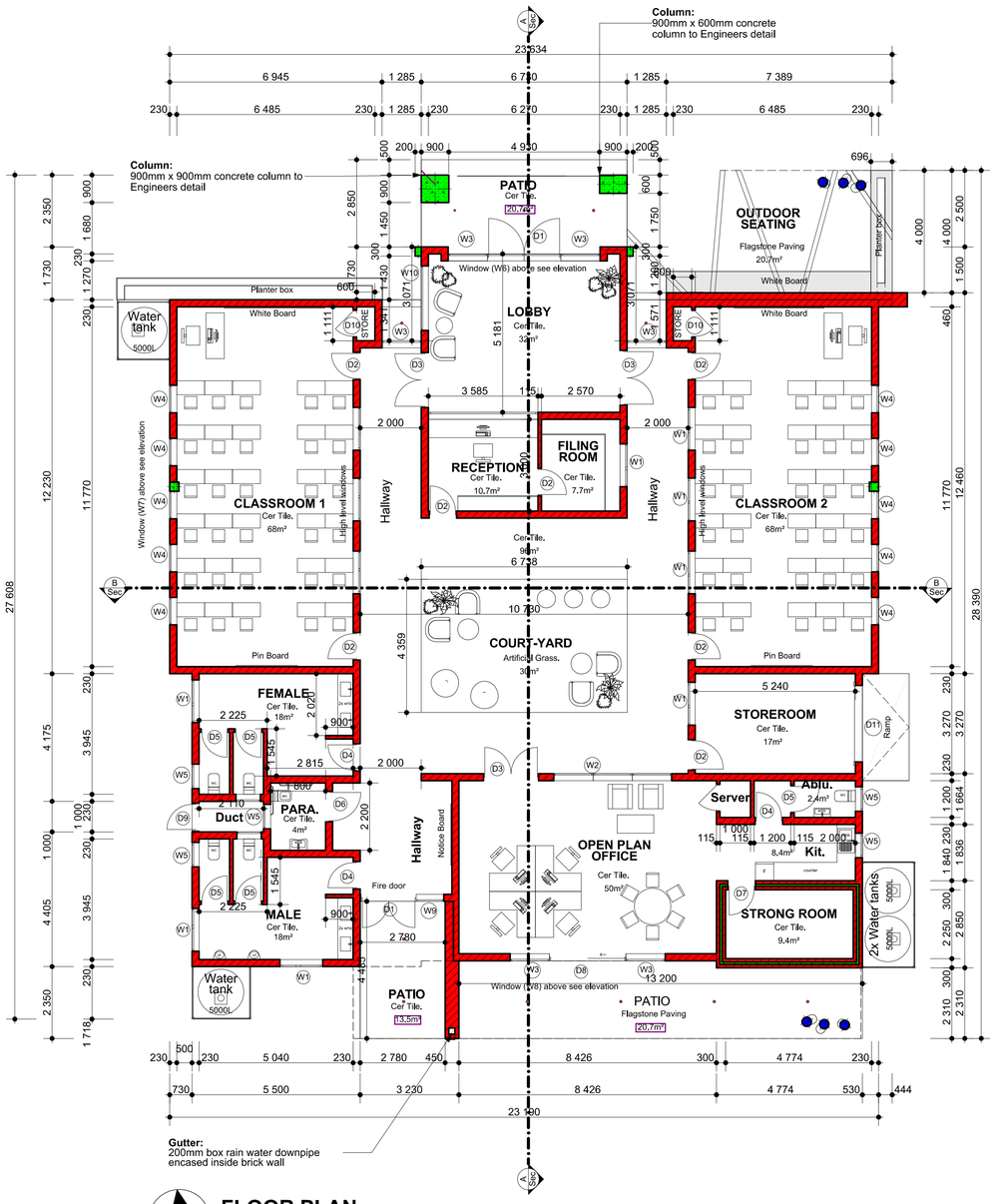
PROJECT NO.
53.2023_ SETA SKILLS CENTRE

SCALE
AS SHOWN

DRAWN BY	S.C.N	DATE 20 FEB 2024
ARCHITECT	D.M.M	DATE 20 FEB 2024
CLIENT DEPARTMENT		DATE 20 FEB 2024

DRAWING NO.

COUNCIL DRAWINGS



FLOOR PLAN
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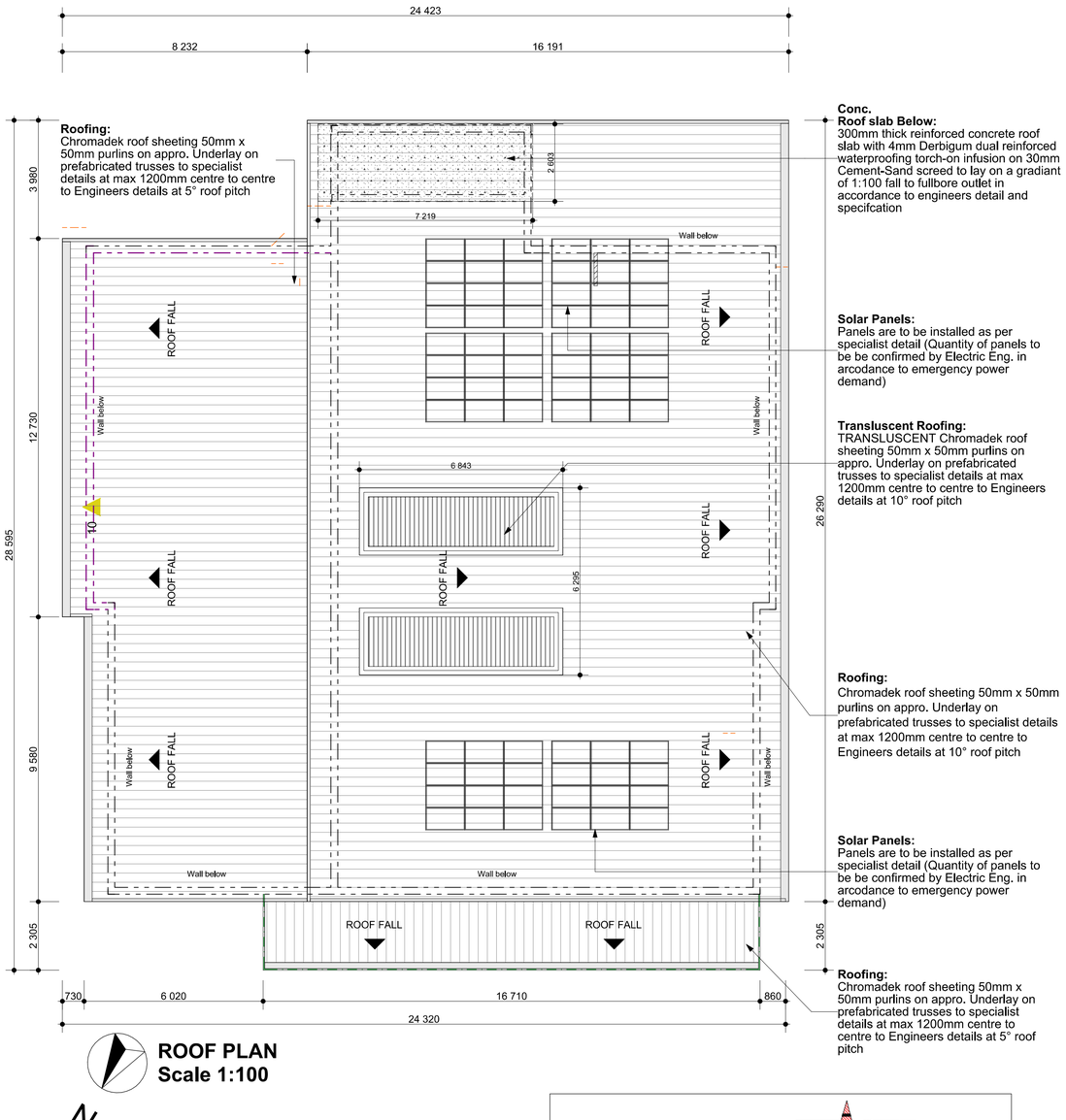
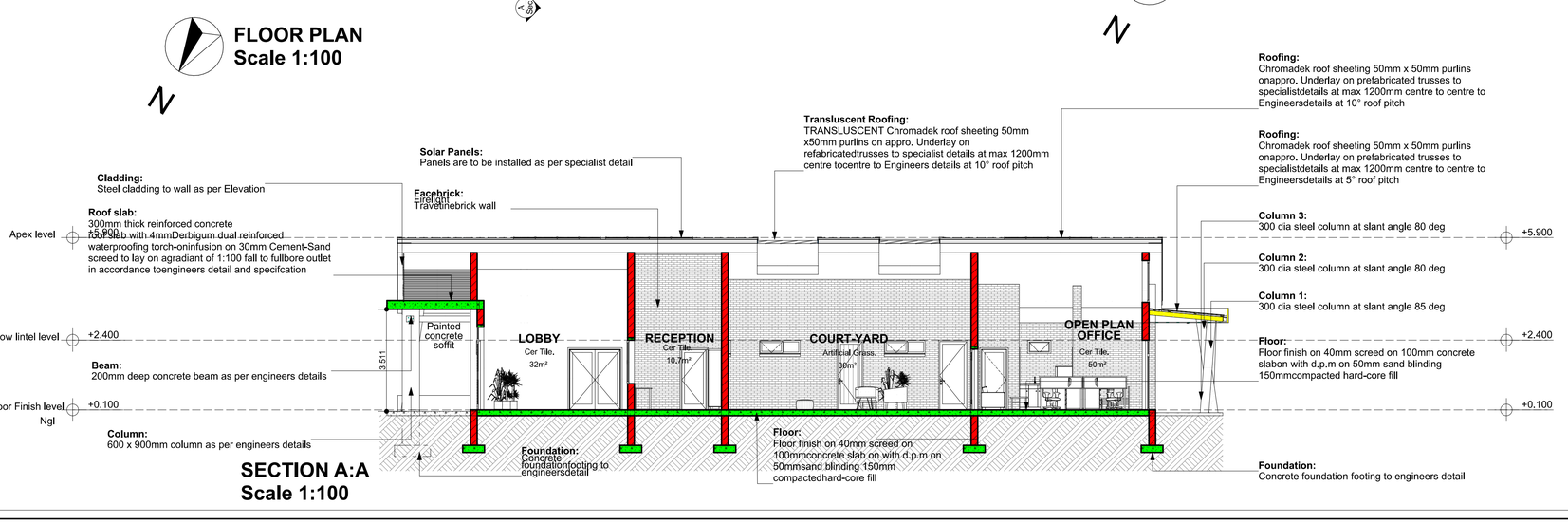


ROOF PLAN
Scale 1:100



SECTION A:A
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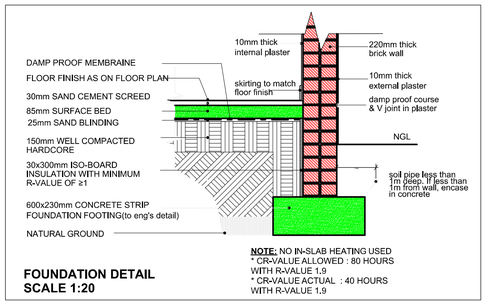
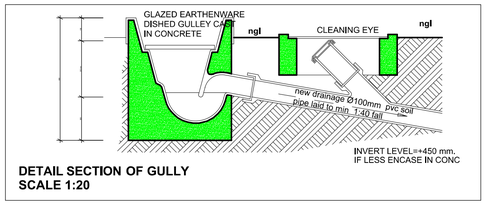


FOUNDATION DETAIL
SCALE 1:20



DETAIL SECTION OF GULLY
SCALE 1:20

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Approved by: _____

Signature: _____
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DEVELOPER

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PROJECT
PROPOSED NEW SKILLS DEVELOPMENT CENTRE AT GA-PHASHA VILLAGE

DRAWING
FLOOR PLAN; ROOF PLAN; SECTION & DETAILS

FILE NO.
53.2023_ SETA SKILLS CENTRE

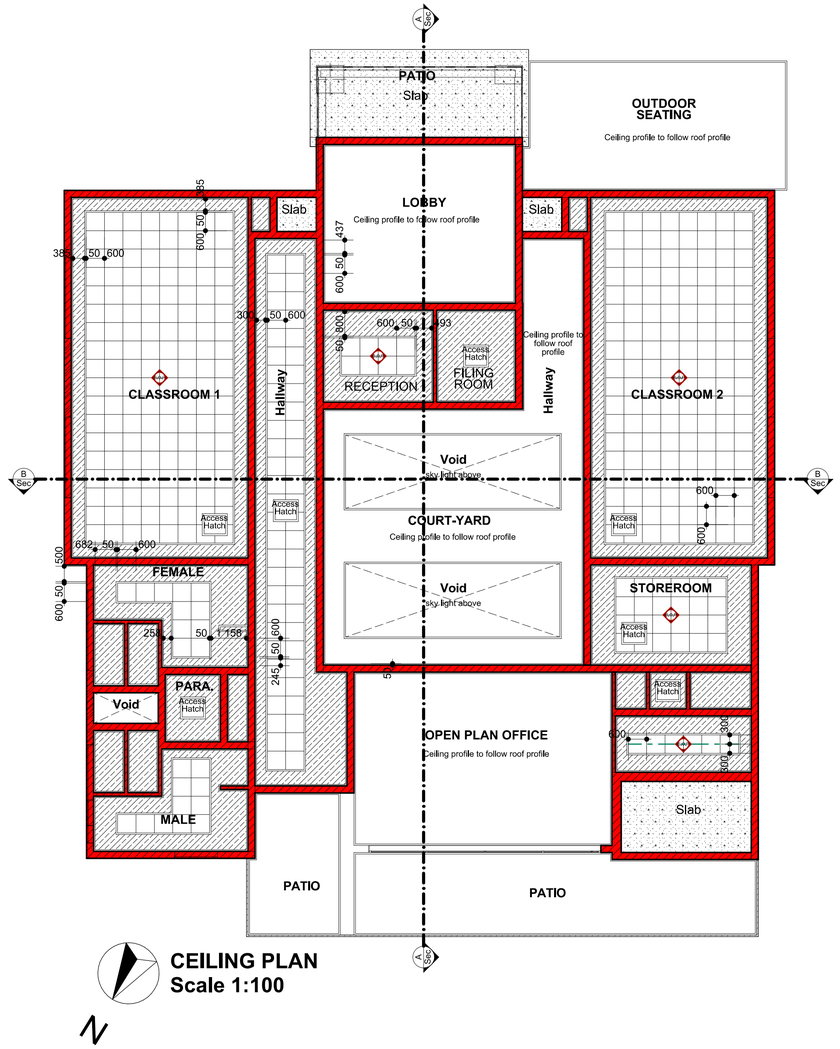
PROJECT NO.
53.2023_ SETA SKILLS CENTRE

SCALE
AS SHOWN

DRAWN BY	S.C.N	DATE	20 FEB 2024
ARCHITECT	D.M.M	DATE	20 FEB 2024
CLIENT DEPARTMENT		DATE	20 FEB 2024

DRAWING NO.

COUNCIL DRAWINGS



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DEVELOPER

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PROJECT
PROPOSED NEW SKILLS DEVELOPMENT CENTRE AT GA-PHASHA VILLAGE

DRAWING
CEILING PLAN

FILE NO.
53.2023_ SETA SKILLS CENTRE

PROJECT NO.
53.2023_ SETA SKILLS CENTRE

SCALE
AS SHOWN

DRAWN BY: **S.C.N**	DATE: **20 FEB 2024**
ARCHITECT: **D.M.M**	DATE: **20 FEB 2024**
CLIENT DEPARTMENT	DATE: **20 FEB 2024**

DRAWING NO.

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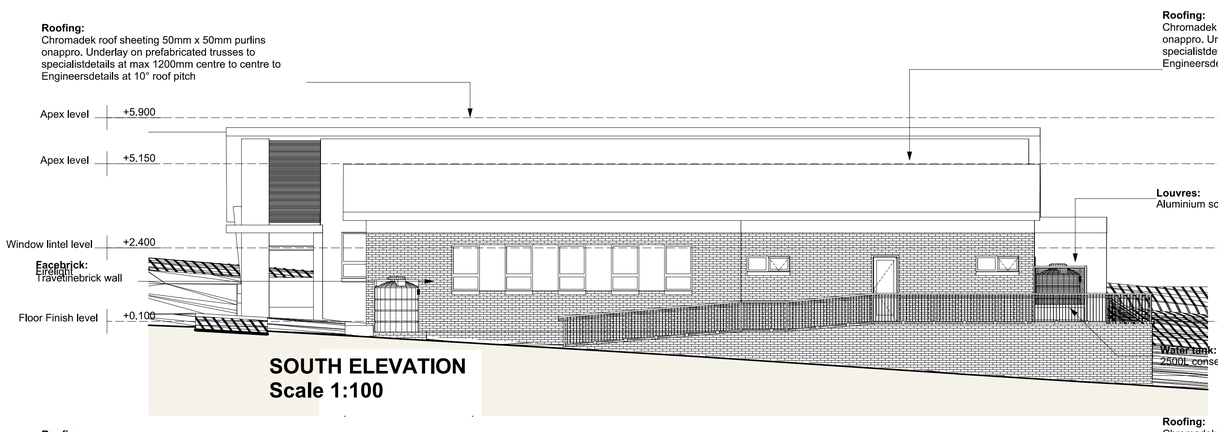

SOUTH ELEVATION
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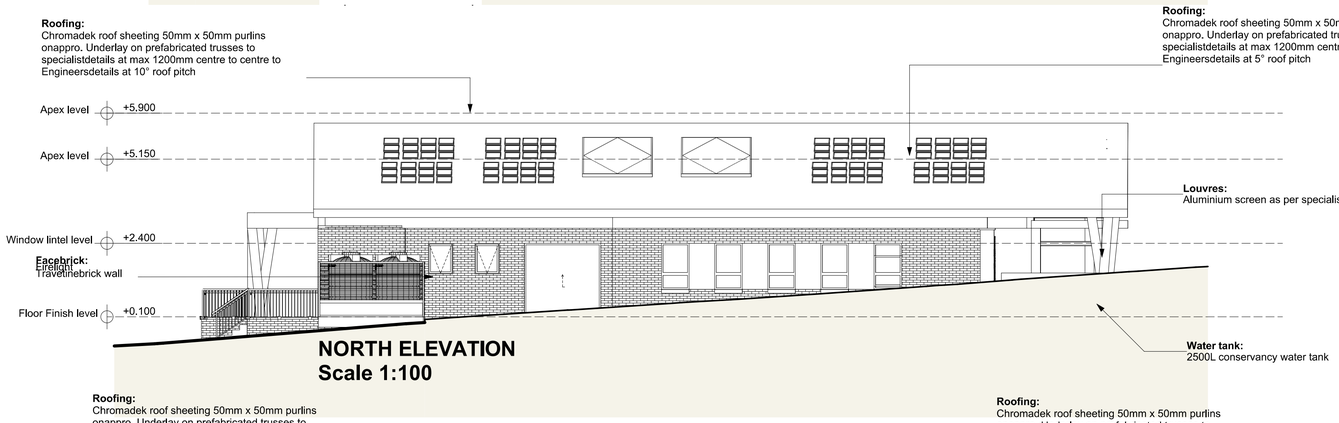

NORTH ELEVATION
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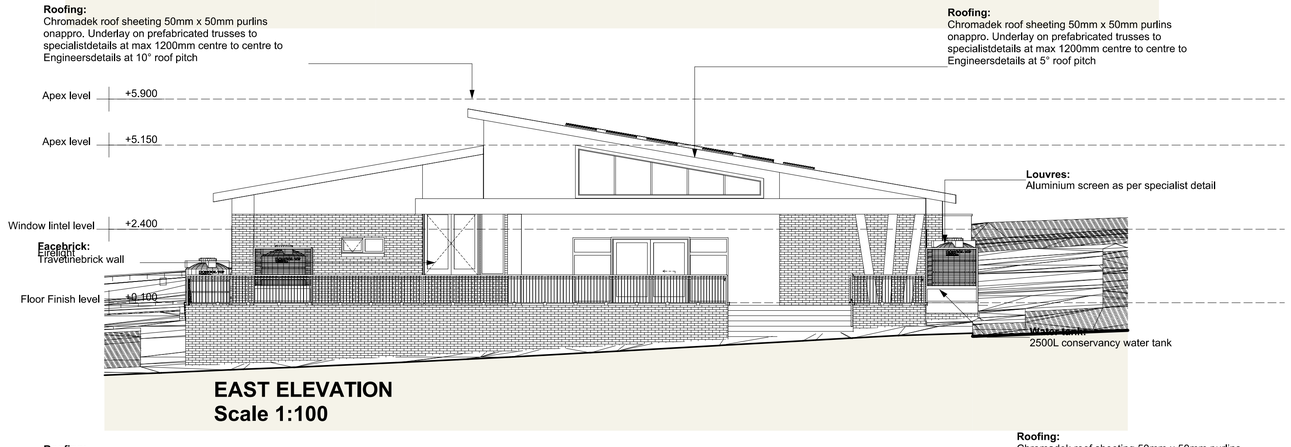

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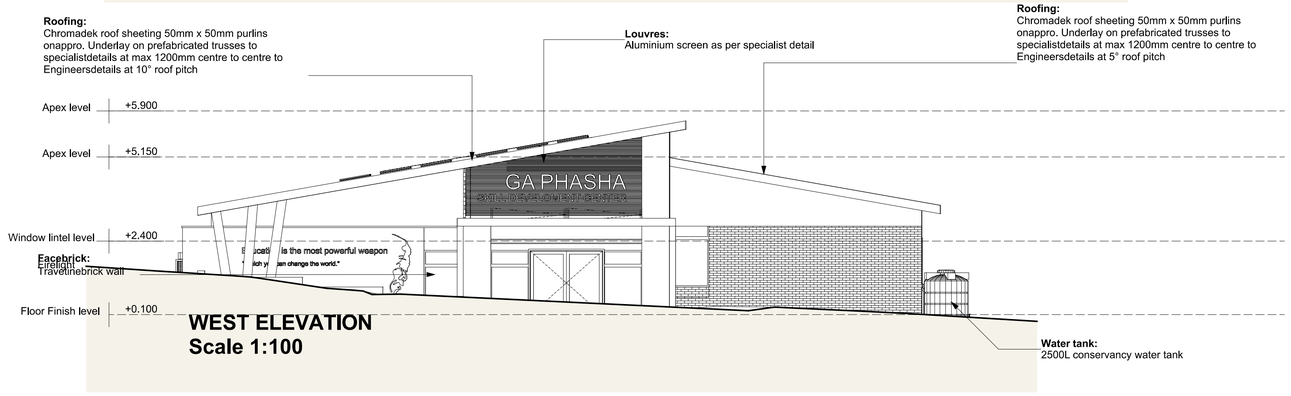

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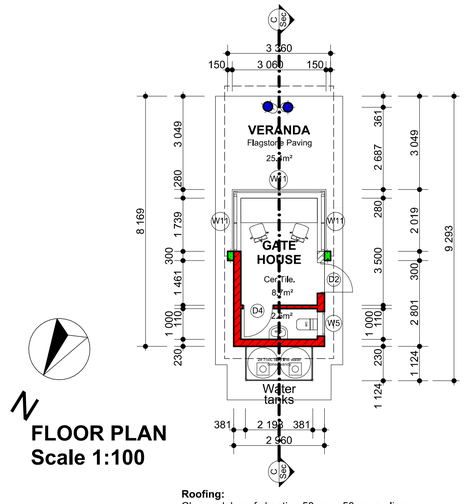
Scale 1:100



FLOOR PLAN
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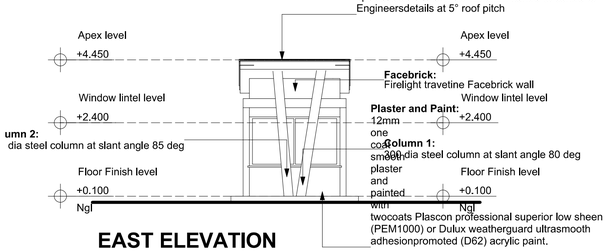

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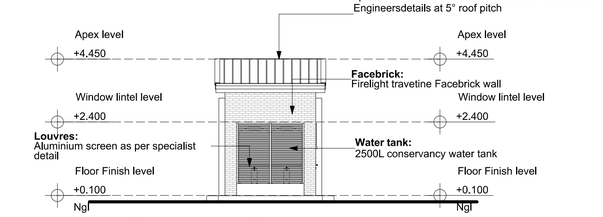

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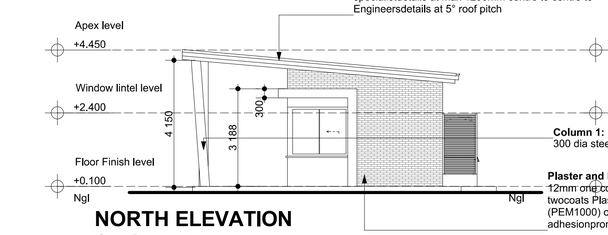

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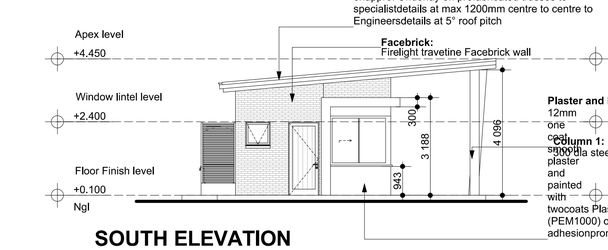

SOUTH ELEVATION
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PROJECT
PROPOSED NEW SKILLS DEVELOPMENT CENTRE AT GA-PHASHA VILLAGE

DRAWING
ELEVATIONS (MAIN BUILDING & GATE HOUSE)

FILE NO.
53.2023_ SETA SKILLS CENTRE

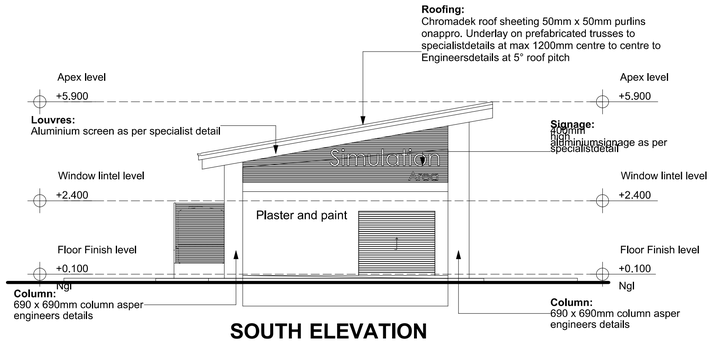
PROJECT NO.
53.2023_ SETA SKILLS CENTRE

SCALE
AS SHOWN

DRAWN BY: **S.C.N**	DATE: **20 FEB 2024**
ARCHITECT: **D.M.M**	DATE: **20 FEB 2024**
CLIENT DEPARTMENT	DATE: **20 FEB 2024**

DRAWING NO.

COUNCIL DRAWINGS



SOUTH ELEVATION
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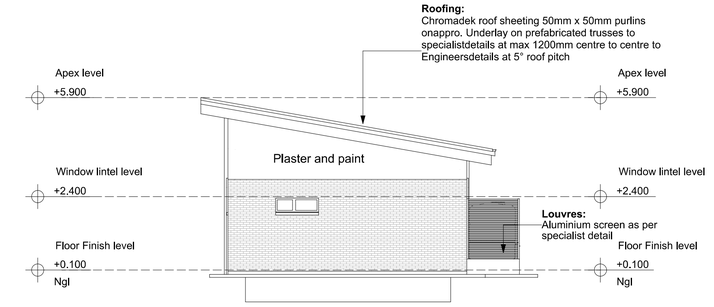

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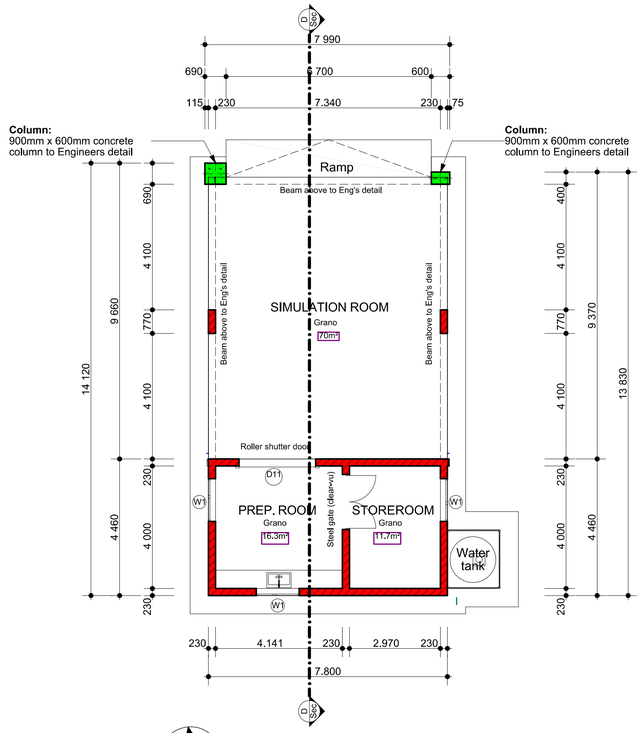
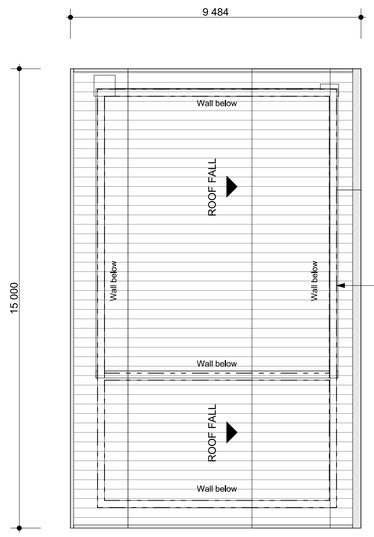
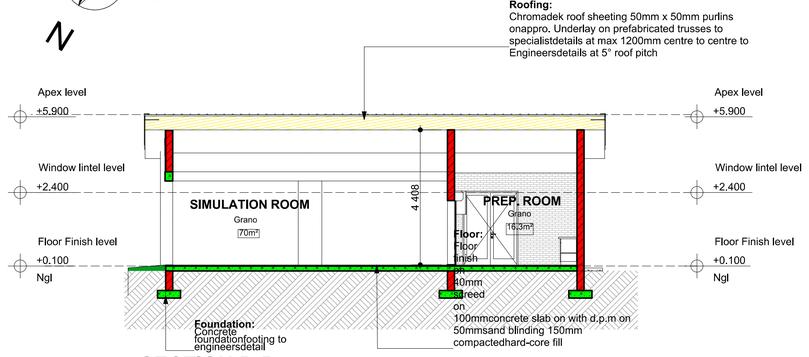


FLOOR PLAN
Scale 1:100



ROOF PLAN
Scale 1:100



SECTION D:D
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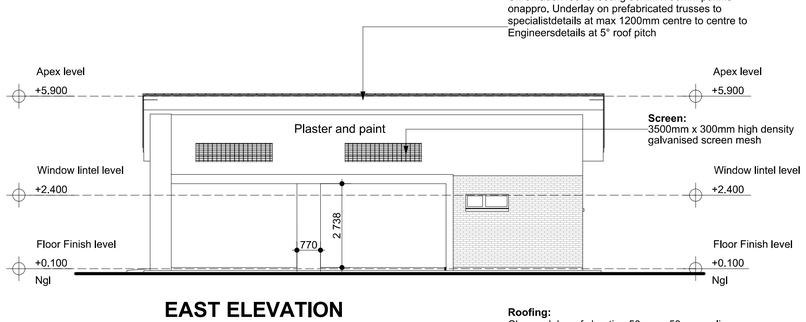

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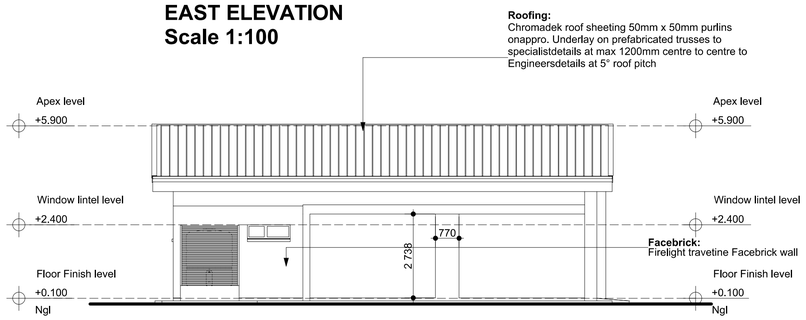
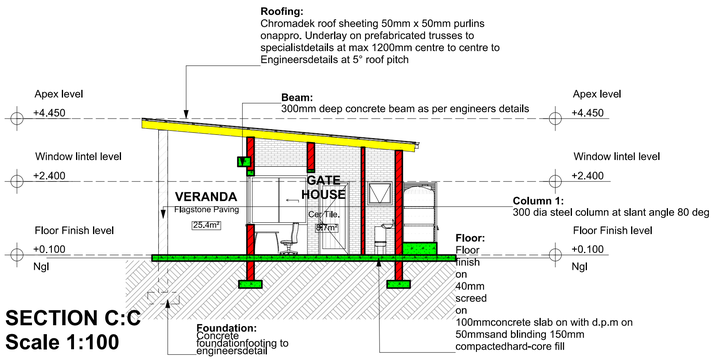


WEST ELEVATION
Scale 1:100



SECTION C:C
Scale 1:100

GATE HOUSE

NOTES

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GLASS NOTES:

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WINDOWS AND SIDELIGHTS LOWER THAN 300mm FROM FLOOR 6MM SAFETY GLASS. SLIDING OR FRENCH DOORS 6MM SAFETY GLASS WITH SAFETY INDICATORS

DESIGN APPROVAL:
Approved by: _____

Signature: _____
Date: _____

NO	REVISION	DATE

DEVELOPER

IMPLEMENTING AGENT:

SERVICES SETA

ARCHITECT

studioe-DESIGN
architecture + design

37 D.F Malan, Lyttlenton Manor, Centurion, 0157
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PROJECT
PROPOSED NEW SKILLS DEVELOPMENT CENTRE AT GA-PHASHA VILLAGE

DRAWING
ELEVATIONS; SECTIONS & PLAN (SIMULATION). GATE HOUSE SECTION

FILE NO.
53.2023_ SETA SKILLS CENTRE

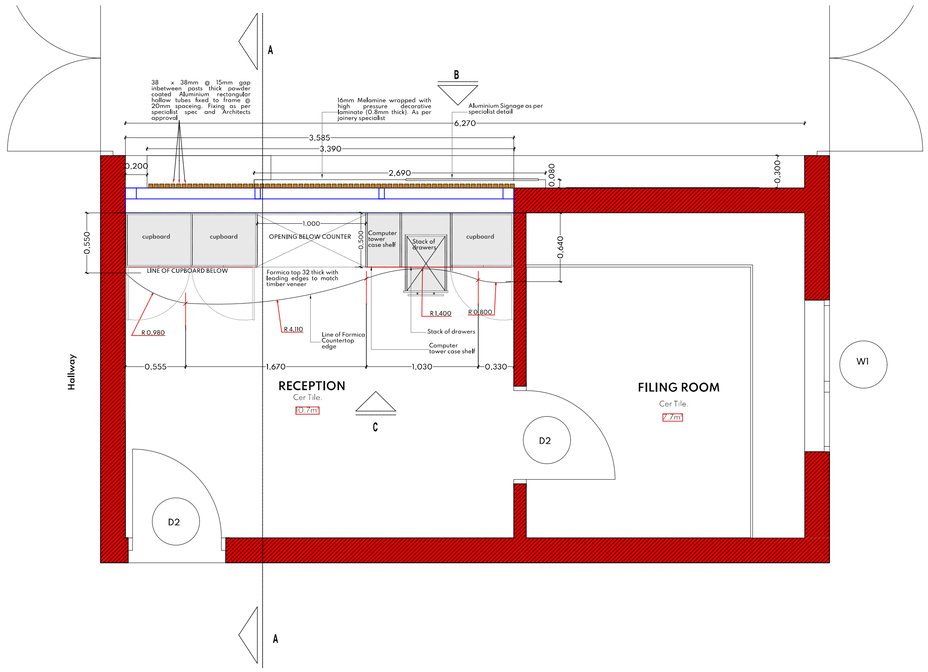
PROJECT NO.
53.2023_ SETA SKILLS CENTRE

SCALE **AS SHOWN**

DRAWN BY	S.C.N	DATE	20 FEB 2024
ARCHITECT	D.M.M	DATE	20 FEB 2024
CLIENT DEPARTMENT		DATE	20 FEB 2024

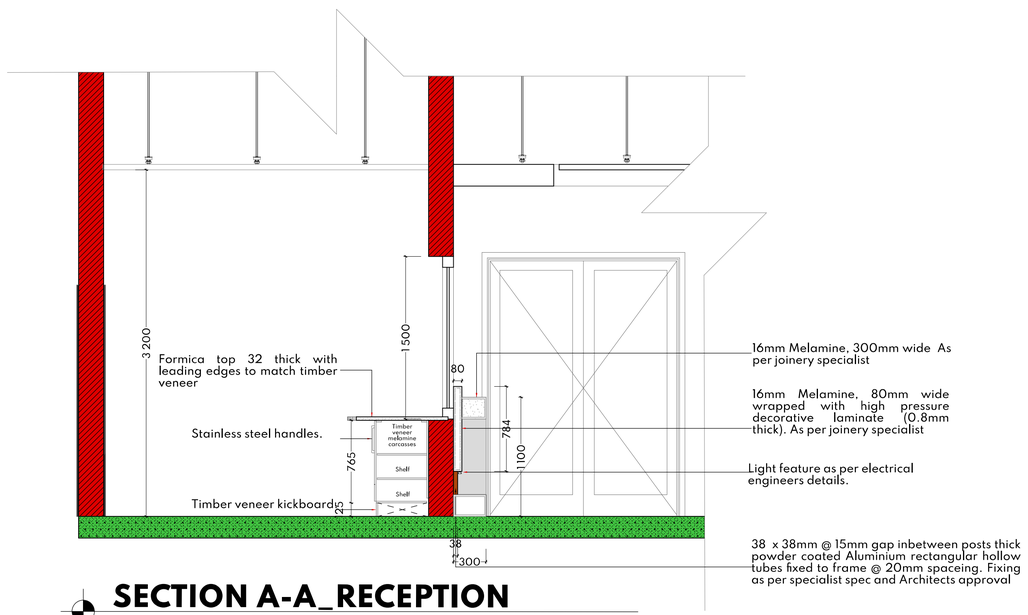
DRAWING NO.

COUNCIL DRAWINGS



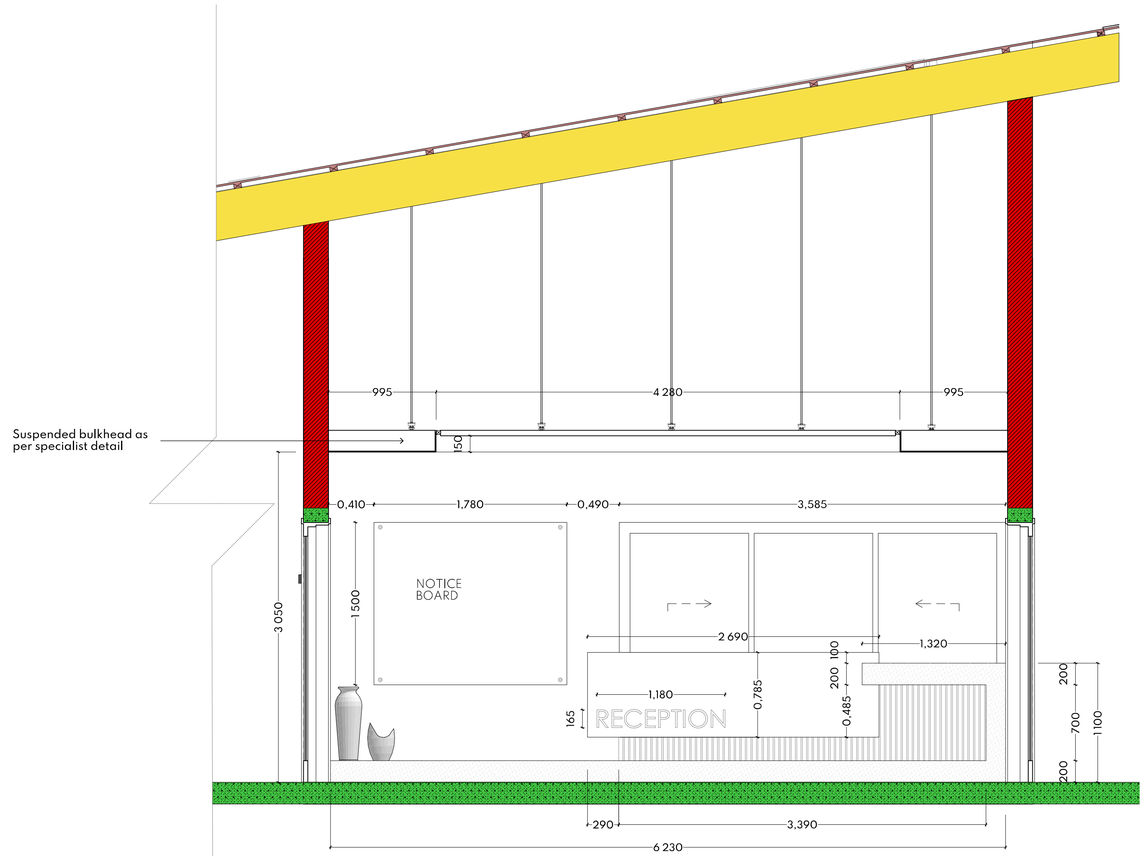
RECEPTION_BLOWN UP FLOOR LAYOUT

SCALE 1:20



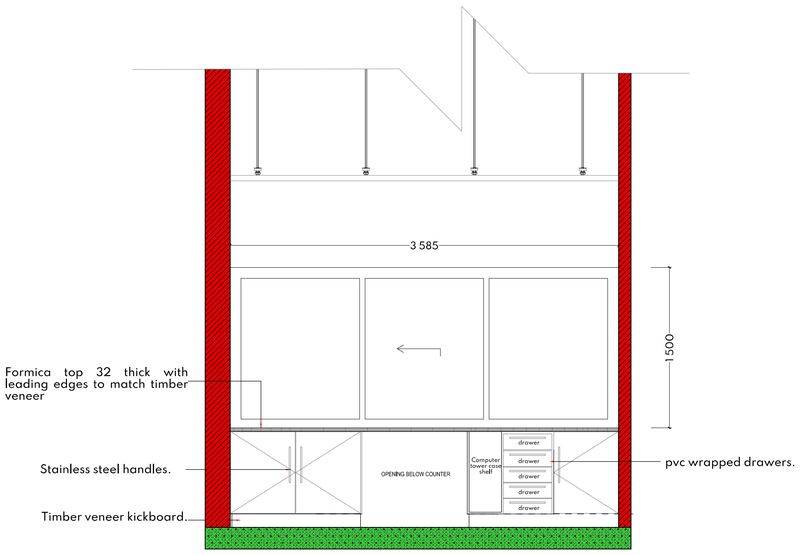
SECTION A-A_RECEPTION

SCALE 1:20



VIEW B_RECEPTION

SCALE 1:20



VIEW C_RECEPTION

SCALE 1:20

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PROJECT
PROPOSED NEW SKILLS DEVELOPMENT CENTRE AT GA-PHASHA VILLAGE

DRAWING
RECEPTION DETAILS

FILE NO.
53.2023_ SETA SKILLS CENTRE

PROJECT NO.
53.2023_ SETA SKILLS CENTRE

SCALE
AS SHOWN

DRAWN BY	S.C.N	DATE	20 FEB 2024
ARCHITECT	D.M.M	DATE	20 FEB 2024
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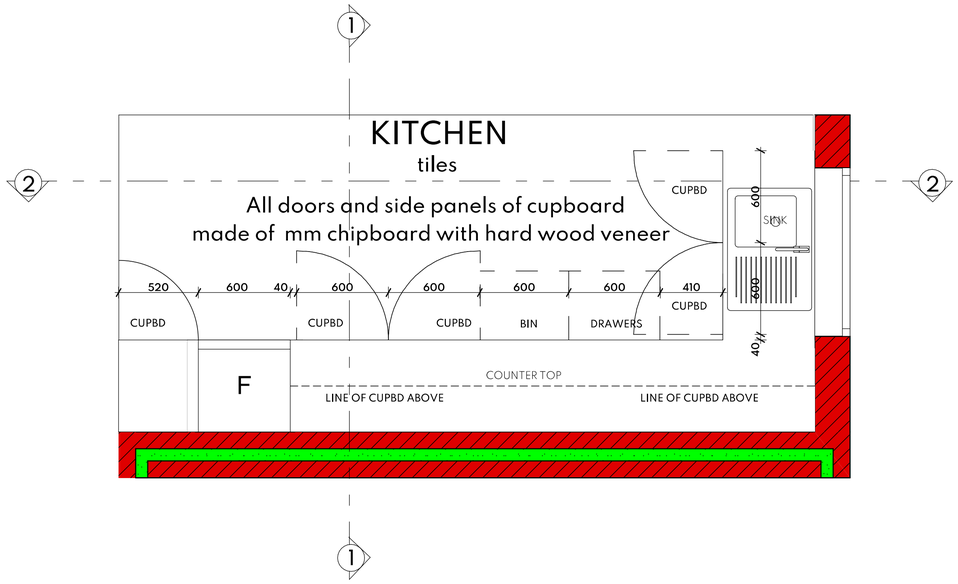
DRAWING NO.

COUNCIL DRAWINGS

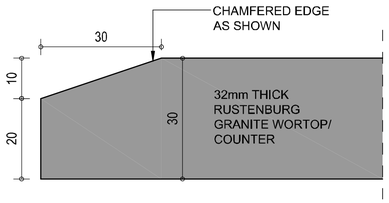


KITCHEN LAYOU PLAN
SCALE 1:20

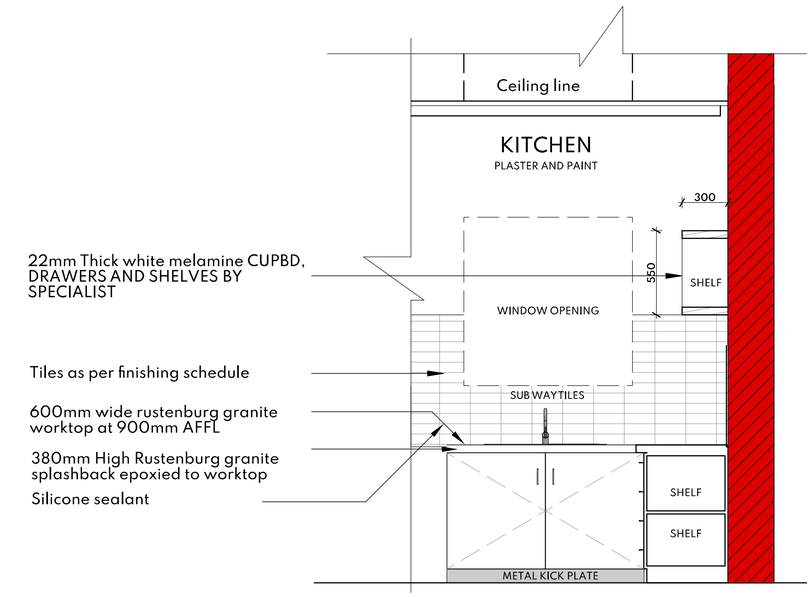
TYPICAL PERSPECTIVE VIEW
SCALE NTS

CUPBOARD NOTES

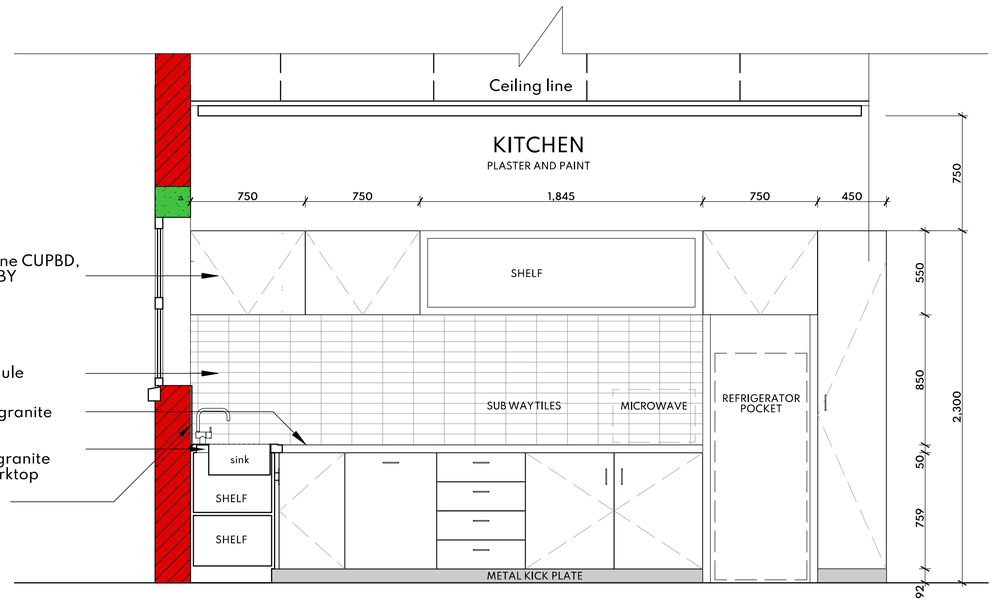
WORKTOPS:	30mm "RUSTENBURG" POLISHED GRANITE WORKTOPS WITH 5mm DOUBLE BEVELLED EDGES
PULL HANDLES:	PULL HANDLES TO FINISHES SCHEDULE
CUPBOARD DOORS:	"AMERICAN WALNUT" MELAWOOD IMPACT DOORS WITH POST FORMED WRAPPED DOORS
STRUCTURE:	WHITE MELAMINE CARCASS BASE AND SHELVES WITH MASONITE BACKING AND BLACK PAINTED CHIPBOARD KICK PLATES AND MS POST SUPPORTS
SINK:	1500x457mm STAINLESS STEEL DROP SINK
APPLIANCES:	



EDGE DETAIL
SCALE 1:5



ELEVATION 1-1
SCALE 1:20



ELEVATION 2-2
SCALE 1:20

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PROJECT
PROPOSED NEW SKILLS DEVELOPMENT CENTRE AT GA-PHASHA VILLAGE

DRAWING
KITCHEN DETAILS

FILE NO.
53.2023_ SETA SKILLS CENTRE

PROJECT NO.
53.2023_ SETA SKILLS CENTRE

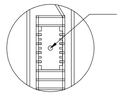
SCALE
AS SHOWN

DRAWN BY	S.C.N	DATE	20 FEB 2024
ARCHITECT	D.M.M	DATE	20 FEB 2024
CLIENT DEPARTMENT		DATE	20 FEB 2024

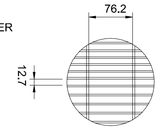
DRAWING NO.

COUNCIL DRAWINGS

INTERNAL FIXTURES
(ANTI-VANDAL)
AS PER MANUFACTURER

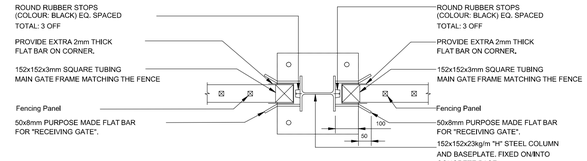


DETAIL A
SCALE 1:20

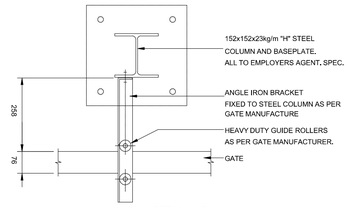


DETAIL B
SCALE 1:20

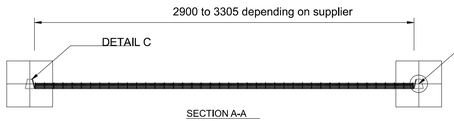
DETAIL C
SCALE 1:20



DETAIL 1
SCALE 1:10



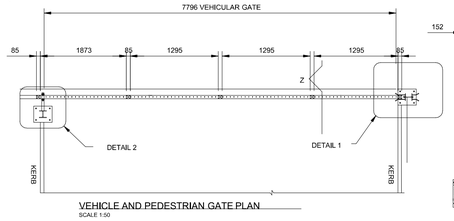
DETAIL 2 - PLAN
SCALE 1:10



SECTION A-A
SCALE 1:20

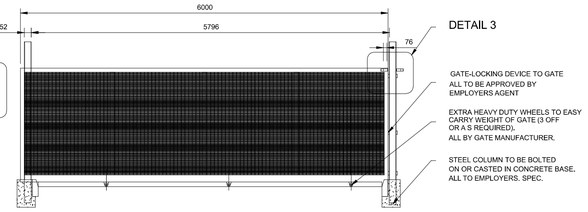
FIXING POSTS
AS APPROVED
BY CLIENT

CLEARVU FENCE SPECIFICATION (This is a Minimum specification required		
ITEM #	DESCRIPTION'	DESCRIPTION'
1	PANEL	2,4m High Security Clearvu or similar approved Galvanized Fence, 76x12,7mm Mesh apperture. Wire diameter of 3mm Horizontal and 4mm Vertical. 4 sti□ening wire bend Internal fixtures-Anti Vandal/Climb etc
2	POST	Galvanized Taper Locking Post sealed with steel Cap
3	CLAMPS	Galvanized Single and Double combo Clamp or similar Approved
4	FOUNDATION	400x400x600mm 25 Mpa Concrete Foundation
6	UNDER DIG	600mm under dig/Anti-Burrow Clear VU mesh extension similar to the Fence in all respect



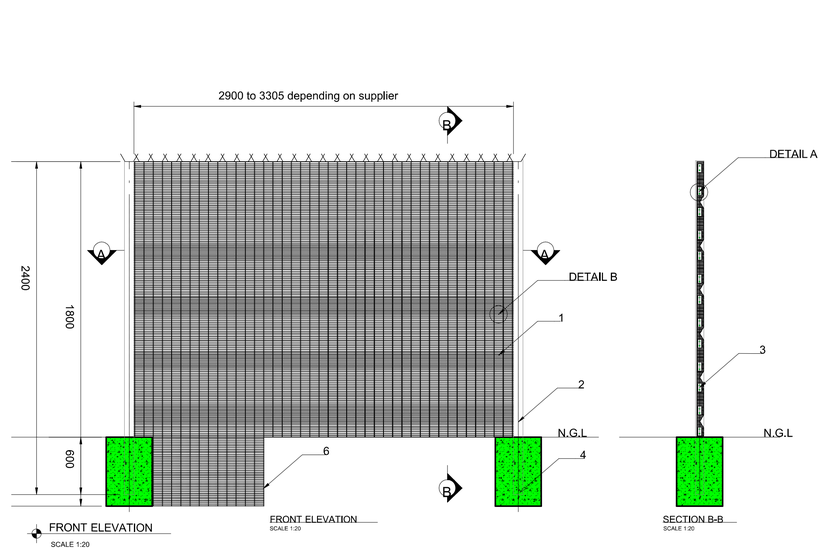
VEHICLE AND PEDESTRIAN GATE PLAN
SCALE 1:50

VEHICLE PEDESTRIAN GATE - PLAN
SCALE 1:50



TYPICAL SLIDING GATE: ELEVATION
SCALE 1:50

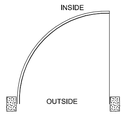
SLIDING GATE - ELEVATION
SCALE 1:50



FRONT ELEVATION
SCALE 1:20

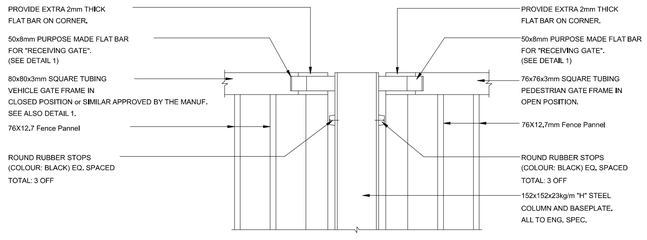
FRONT ELEVATION
SCALE 1:20

SECTION B-B
SCALE 1:20



TYPICAL PEDESTRIAN SWING GATE: PLAN
SCALE 1:50

PEDESTRIAN SWING GATE - ELEVATION
SCALE 1:50



DETAIL 3 - ELEVATION
SCALE 1:10

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PROJECT
PROPOSED NEW SKILLS DEVELOPMENT CENTRE AT GA-PHASHA VILLAGE

DRAWING
FENCE AND GATE DETAILS

FILE NO.
53.2023_ SETA SKILLS CENTRE

PROJECT NO.
53.2023_ SETA SKILLS CENTRE

SCALE
AS SHOWN

DRAWN BY: **S.C.N**	DATE: **20 FEB 2024**
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DRAWING NO.

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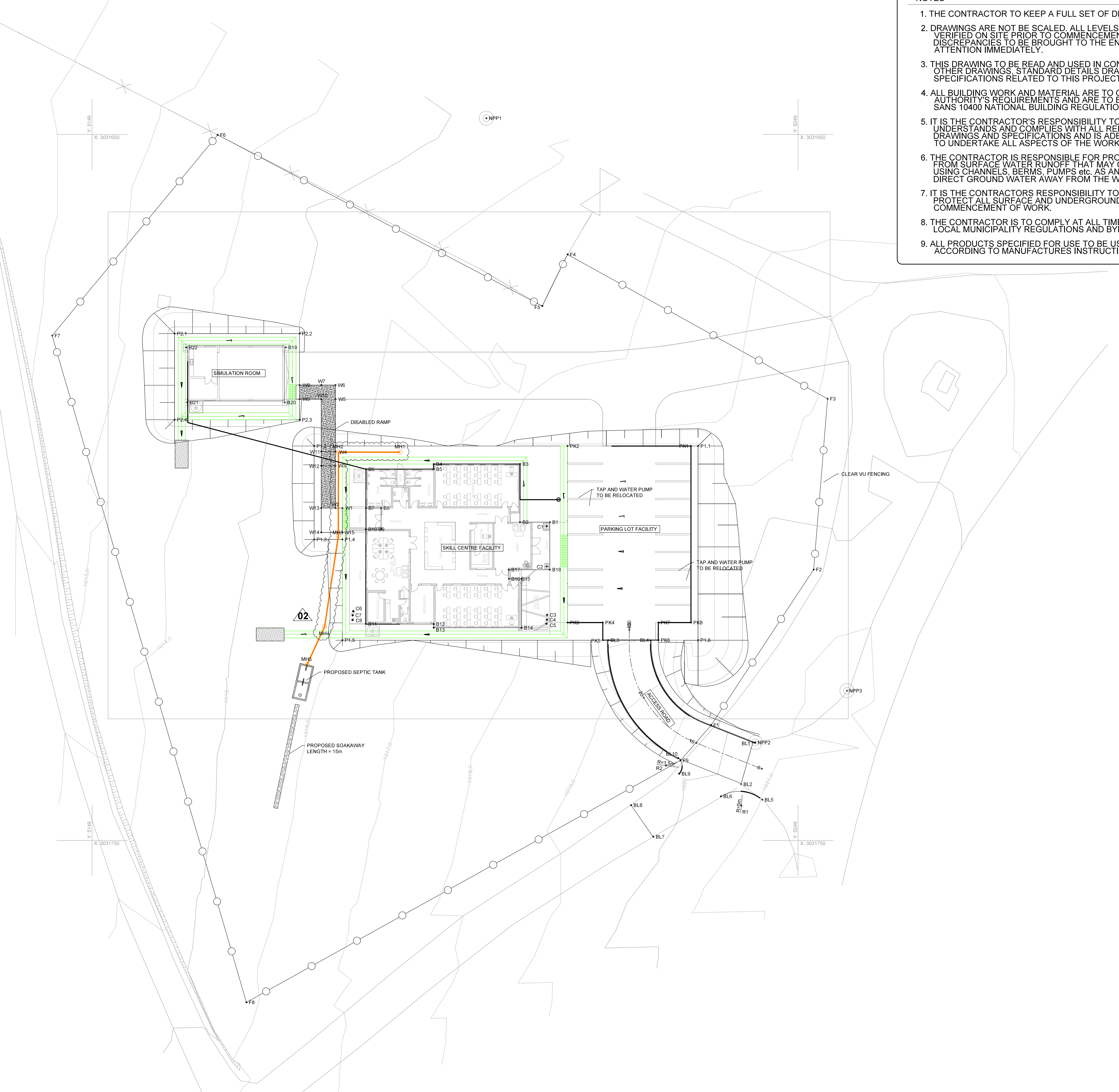

LAYOUT PLAN

SCALE 1:200

CONTROL POINTS (WGS 84 Lo 31)			
POINT	Y	X	Z
NPP1	5 092.810	3 031 647.844	1015.575
NPP2	5 054.729	3 031 736.268	1020.590
NPP3	5 041.743	3 031 728.941	1021.320

LEGEND

- SEWER MANHOLE
- 160mm DIAMETER SEWER PIPE
- PROPOSED SEPTIC TANK
- PROPOSED SOAKAWAY
- 1m CONCRETE V-DRAIN CHANNEL
- CONCRETE V-DRAIN CROSSING PATHWAY
- NEW BUILDING
- PARKING LOT FACILITY
- DISABLED RAMP
- CLEAR VU FENCE
- EXISTING FENCE
- 25mm Dia WATER PIPE
- FIG 6 KERB
- FIG 6 KERB LAID IN 300mm INTERVAL
- FLOW DIRECTION
- RENO-MATRESS
- 1:2 FILL EMBANKMENT
- 1:2 CUT EMBANKMENT

NOTES

1. THE CONTRACTOR TO KEEP A FULL SET OF DRAWINGS IN SITE.
2. DRAWINGS ARE NOT BE SCALED. ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE PRIOR TO COMMENCEMENT OF WORKS. ANY DISCREPANCIES TO BE BROUGHT TO THE ENGINEER / ARCHITECT'S ATTENTION IMMEDIATELY.
3. THIS DRAWING TO BE READ AND USED IN CONJUCTION WITH ALL OTHER DRAWINGS, STANDARD DETAILS DRAWINGS AND SPECIFICATIONS RELATED TO THIS PROJECT.
4. ALL BUILDING WORK AND MATERIAL ARE TO COMPLY WITH LOCAL AUTHORITY'S REQUIREMENTS AND ARE TO BE IN ACCORDANCE WITH SANS 10400 NATIONAL BUILDING REGULATIONS.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT HE UNDERSTANDS AND COMPLIES WITH ALL RELEVANT ENGINEERING DRAWINGS AND SPECIFICATIONS AND IS ADEQUATELY EXPERIENCED TO UNDERTAKE ALL ASPECTS OF THE WORK SAFELY.
6. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE WORKS FROM SURFACE WATER RUNOFF THAT MAY CAUSE EROSION DAMAGE, USING CHANNELS, BERMS, PUMPS etc. AS AND WHEN REQUIRED AND DIRECT GROUND WATER AWAY FROM THE WORKS
7. IT IS THE CONTRACTORS RESPONSIBILITY TO IDENTIFY, RELOCATE OR PROTECT ALL SURFACE AND UNDERGROUND SERVICES PRIOR TO COMMENCEMENT OF WORK.
8. THE CONTRACTOR IS TO COMPLY AT ALL TIMES WITH ALL RELEVANT LOCAL MUNICIPALITY REGULATIONS AND BYLAWS.
9. ALL PRODUCTS SPECIFIED FOR USE TO BE USED STRICTLY ACCORDING TO MANUFACTURES INSTRUCTIONS AND SPECIFICATIONS.

GENERAL NOTE:

1. ALL DIMENSIONS & LEVELS TO BE CHECKED ON SITE BEFORE CONSTRUCTION COMMENCES.
2. ALL DIMENSIONS & LEVELS TO BE CHECKED WITH ARCHITECTS DRAWINGS BEFORE CONSTRUCTION COMMENCES.
3. HORIZONTAL V-JOINT BETWEEN ALL BRICKWORK AND CONCRETE.
4. ALL NON-LOAD BEARING BRICKWORK TO STOP 10mm UNDER SLAB.
5. ALL LOAD BEARING BRICKWORK SHOWN WITH HATCHING.
6. ALL CONCRETE TO BE IN ACCORDANCE WITH SABS 1200 G.
7. ALL CONCRETE TO BE OF MIN GRADE 25MPa/20 FOR BEAMS AND SLABS
8. THE ENGINEER IS NOT RESPONSIBLE FOR THE ADEQUACY OF THE FOUNDATIONS, BRICKWORK OR STRUCTURAL ELEMENTS SUCH AS BRICK LINTOLS OVER OPENINGS, BEAMS, COLUMNS ETC.
9. ALL WORK TO BE DONE ACCORDING TO SABS 1200 AND THE RELEVANT BUILDING/ CONSTRUCTION CODES FOR NATIONAL AND LOCAL AUTHORITIES AS MAY BE APPLICABLE.
10. CURING OF ALL CONCRETE ELEMENTS IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND SHALL BE DONE ACCORDING TO SABS 1200 5.5.8
11. STRIPPING OF SHUTTERING AND REMOVAL OF PROPS ACCORDING TO SABS 1200G 5.4 & 5.2.5
12. 10mm SOFTBOARD TO BE PLACED VERTICALLY BETWEEN CONCRETE AND BRICKWORK FOR SLABS SUPPORTED ON HALF-WALL AT OUTSIDE WALLS.
13. HORIZONTAL SLIDING JOINTS:
    A. FLOOR SLABS:
    TWO LAYERS OF 250 MICRON PVC PLASTIC SHEETING HORZ. BETWEEN ALL CONCRETE AND BRICKWORK.
    B. ROOF SLABS:
    TWO LAYERS OF 3-PLY MALTHOID HORIZONTAL BETWEEN ALL CONCRETE AND BRICKWORK.
14. PREPARATION OF SUPPORTING SURFACE FOR SLAB ON LOAD BEARING BRICKWORK: BRICKWORK TO BE EVENLY LAYED AND TRUE HORIZONTAL WITH ALL JOINTS PROPERLY FILLED AND FLUSH WITH TOP SURFACE OF BRICKWORK. SURFACE TO BE PROPERLY CLEANED BEFORE PLACING OF SLIDING MATERIAL.
15. ALL LOAD BEARING BRICK WALLS TO RELEVENT BUILDING REGULATIONS AND CODES
16. ALL FOUNDATIONS TO BE ON SUITABLE SOIL CONDITIONS. (DISCUSS WITH ENGINEER)
17. MINIMUM NOMINAL BRICK STRENGH: 10,5 MPa.
18. MINIMUM MORTAR CLASS: CLASS II.
19. SPECIALISTS ELEMENTS TO BE VERIFIED BY SPECIALIST CONSULTANT OR SUPPLIER.
20. ALL STRUCTURAL COMPONENTS TO BE VERIFIED AND INSPECTED BY STRUCTURAL ENGINEER.
21. ALL ARCHITECTURAL MATERIALS AND SAMPLES TO BE APPROVED BY THE ARCHITECT.
22. ALL BUILDING WORK TO BE IN ACCORDANCE WITH NBR AND SABS OR THE RELEVANT LOCAL AUTHORITY
23. THE CONTRACTOR TO KEEP A FULL SET OF DRAWINGS ON SITE.
24. DIMENSIONS AND LEVELS MUST NOT BE SCALED OR ASSUMED. AFTER NOTIFICATION, DISCREPANCIES OR MISSING DIMENSIONS AND LEVELS WILL BE CORRECTED IN WRITTING BY THE ENGINEER.
25. ALL WORK SHALL BE EXECUTED IN STRICT ACCORDANCE WITH THE APPLICABLE PARTS OF THE LATEST EDITION OF SANS 10400, SANS 2001, SANS 1200 ,THE OSH ACT AND THE PROJECT SPECIFICATION IN THE CONTRACT DOCUMENTS.
26. THE CONTRACTOR SHALL CHECK ALL PROJECT DIMENSIONS ON SITE BEFOREHAND,ANY DICREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER.
27. ALL SANS SPECIFICATIONS MENTIONED IN THE NOTES,ON THE DRAWINGS AND IN PROJECT SPECIFICATIONS SHALL BE AVALAIBLE ON SITE AT ALL TIMES IN HARD COPY FORMAT.
28. ALL INSTRUCTIONS FROM THE ENGINEER TO BE WRITTEN IN THE SITE INSTRUCTION BOOK,THAT SHOULD BE PROVIDED BY THE CONTRACTOR.
29. PRODUCTS DIFFERENT TO THOSE SPECIFIED MAY BE USED WITH THE ENGINEER'S PRIOR APPROVAL.
30. UNLESS OTHERWISE INDICATED ON DRAWINGS, ALL WATERPROOFING,DRAINAGE FALLS AND FINISHES ARE ACCORDING TO THE ARCHITECT DETAILS AND SPECIFICATIONS.
31. THE CONTRACTOR SHALL DISCLOSE HIS PROPOSED BUILDING SEQUENCE IN BOARD TERMS BEFORE SITE ESTABLISHMENT.
32. ANY DEVIATIONS FROM THE CONSTRUCTION DRAWINGS PLANNED BY THE CONTRACTOR SHALL BE PROPOSED TO THE ENGINEER IN FULL DETAIL FOR A DECISION. THE ENGINEER IS UNDER NO OBLIGATION TO APPROVE SUCH DEVIATIONS,BUT IF APPROVED,THE APPROVAL SHALL BE IN WRITTING.
33. REFER TO ALL RELEVANT DRAWINGS BY:-
    - ARCHITECTS
    - STRUCTURAL ENGINEERS
    - ELECTRICAL ENGINEERS
    - MECHANICAL ENGINEERS
34. ALL COLUMNS, WALLS AND BEAMS TO BE PLACED CENTRALLY ON GRID/ CENTRE LINES UNLESS DIMENSIONED OTHERWISE.
35. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT HE UNDERSTANDS AND COMPLIES WITH ALL RELEVANT ENGINEERING DRAWINGS AND SPECIFICATIONS AND IS ADEQUATELY EXPERIENCED TO UNDERTAKE ALL ASPECTS OF THE WORK SAFELY.
36. THE CONTRACTOR IS TO COMPLY AT ALL TIMES WITH ALL RELEVANT MUNICIPAL REGULATIONS AND BYLAWS IN THE AREA OF THE SITE AND IS TO ENSURE THAT HE HAS A SET OF APPROVED BUILDING PLANS ON SITE AT ALL TIMES
37. ALL PRODUCTS SPECIFIED FOR USE ARE TO BE USED STRICTLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS AT ALL TIMES.
38. SHOULD THE ENGINEER BE REQUIRED ON SITE,48 HRS NOTICE SHOULD BE REQUESTED IN WRITTING,FAILURE TO DO SO,THE ENGINEER WILL NOT BE HELD RESPONSIBLE FOR ANY DELAYS OR COST IMPLICATIONS.
39. IN CASE OF THE FIELD ENGINEERING QUIRIES TO THE ENGINEER, IN WRITTING. THE CONTRACTOR SHALL HAVE A PROPOSED SOLUTION AND SUFFICIENT DIGITAL PHOTOGRAPHS TO SHOW THE PROBLEM.

FOR MUNICIPAL SUBMISSION

REVISIONS		
No.	Description	Date
00	Issued for Municipal Submission	25/01/2024

MOTAU ENGINEERS

MOTAU ENGINEERS

18 LOTTERING STREET, BENDOR PARK POLOKWANE.

DESIGNED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

DRAWN
NAME: D.G. MASHAVHA
SIGNATURE: DATE: JANUARY 2024

CHECKED
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DESIGN OFFICE APPROVAL
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

SERVICES SETA

Project Description:

GA-PASHA VILLAGE SKILL CENTRE

Drawing Description:

SITE LAYOUT PLAN

Project Number: MOT2401	Drawing Number: 100
Date: JANUARY 2024	Scale: AS SHOWN
Sheet Size: A1	Revision: 00
SHEET 1 OF 1	
Discipline: CIVIL	

PLOT DATE: 27/01/2024 2:17 pm

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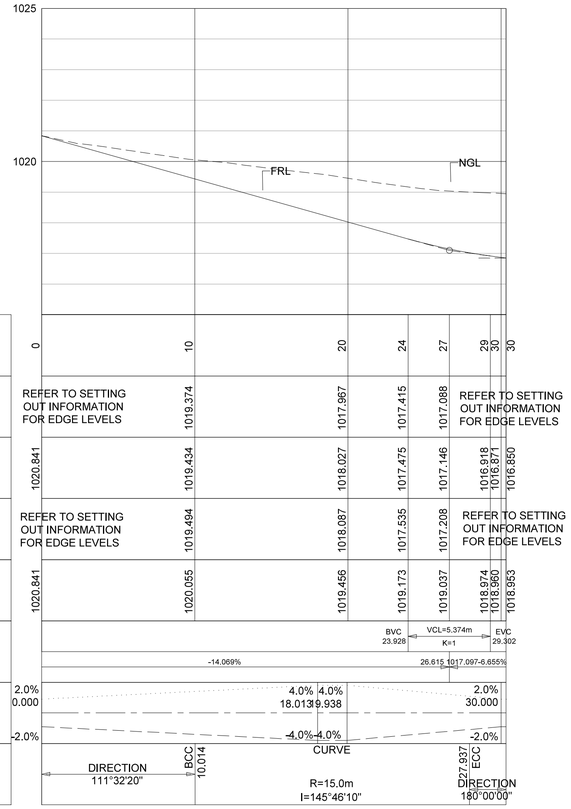
SCALES:
Horizontal 1:200
Vertical 1:100

DATUM 1015.000



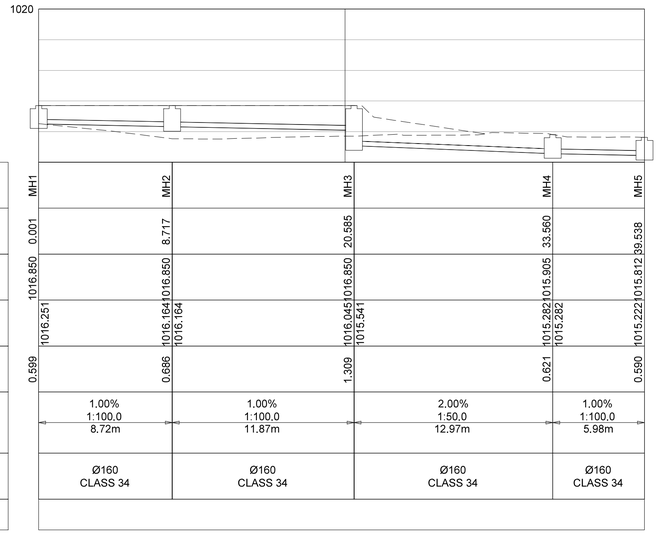
LONGSECTION ACCESS ROAD
FROM 0.000 TO 30.320

SETTING OUT DATA (WGS84 ; LO31°) - Access Road

NAME	CH	Y	X	DETAILS
START	0.000	5 053.760	3 031 740.006	L 10.014m
BCC PI ECC	10.014 27.937	5 063.075 5 072.568 5 072.568	3 031 736.329 3 031 732.582 3 031 722.377	R 15.000m DA 68°27'40" TL 10.206m AL 17.923m
END	30.320	5 072.568	3 031 719.994	L 2.383m

SCALES:
Horizontal 1:200
Vertical 1:100

DATUM 1015.000



LONGSECTION SEWER 01
FROM 0.000 TO 39.538

MANHOLE SETTING OUT DETAILS Sewer Network 01

MANHOLE	Y	X	COVER LEVEL	INVERT LEVEL	DEPTH
MH1	5105.036	3031695.153	1016.850	1016.251	0.599
MH2	5113.752	3031695.134	1016.850	1016.164	0.686
MH3	5113.780	3031707.002	1016.850	1015.541	1.309
MH4	5115.714	3031719.831	1015.902	1015.282	0.621
MH5	5118.215	3031725.261	1015.812	1015.222	0.590

NOTES

1. THE CONTRACTOR TO KEEP A FULL SET OF DRAWINGS IN SITE.
2. DRAWINGS ARE NOT BE SCALED, ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE PRIOR TO COMMENCEMENT OF WORKS, ANY DISCREPANCIES TO BE BROUGHT TO THE ENGINEER / ARCHITECT'S ATTENTION IMMEDIATELY.
3. THIS DRAWING TO BE READ AND USED IN CONJUCTION WITH ALL OTHER DRAWINGS, STANDARD DETAILS DRAWINGS AND SPECIFICATIONS RELATED TO THIS PROJECT.
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9. ALL PRODUCTS SPECIFIED FOR USE TO BE USED STRICTLY ACCORDING TO MANUFACTURES INSTRUCTIONS AND SPECIFICATIONS.

GENERAL NOTE:

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FOR MUNICIPAL SUBMISSION

REVISIONS		
No.	Description	Date
00	Issued for Municipal Submission	25/01/2024

MOTAU ENGINEERS
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18 LOTTERING STREET, BENDOR PARK POLOKWANE.

DESIGNED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

DRAWN
NAME: D.G. MASHAVHA
SIGNATURE: DATE: JANUARY 2024

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DESIGN OFFICE APPROVAL
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

SERVICES SETA
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Project Description:
GA-PASHA VILLAGE SKILL CENTRE

Drawing Description:
LONG SECTIONS

Project Number:	Drawing Number:
MOT2401	200
Date: JANUARY 2024	Scale: AS SHOWN
Sheet Size: A1	Revision: 00
SHEET 1 OF 1	
Discipline: CIVIL	

PLOT DATE: 27/01/2024 2:21 pm

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WALKWAY SETTING OUT TABLE (WGS 84 Lo 31)

POINT	Y	X	Z
W1	5 113.208	3 031 703.061	1016.850
W2	5 114.197	3 031 703.061	1016.850
W3	5 114.197	3 031 697.061	1016.351
W4	5 114.197	3 031 695.061	1016.351
W5	5 114.197	3 031 687.644	1015.733
W6	5 114.197	3 031 685.642	1015.733
W7	5 116.197	3 031 685.644	1015.733
W8	5 119.273	3 031 685.644	1015.476
W9	5 119.280	3 031 687.633	1015.476
W10	5 116.197	3 031 687.644	1015.733
W11	5 116.197	3 031 695.061	1016.351
W12	5 116.197	3 031 697.078	1016.351
W13	5 116.197	3 031 703.061	1016.850
W14	5 116.197	3 031 706.511	1016.850
W15	5 113.208	3 031 706.511	1016.850

FENCE SETTING OUT TABLE (WGS 84 Lo 31)

POINT	Y	X
F1	5 060.984	3 031 733.795
F2	5 046.438	3 031 711.767
F3	5 044.472	3 031 687.582
F4	5 081.296	3 031 667.144
F5	5 084.889	3 031 674.457
F6	5 130.873	3 031 650.208
F7	5 154.317	3 031 678.649
F8	5 126.796	3 031 773.074
F9	5 065.320	3 031 738.813

PARKING SETTING OUT TABLE (WGS 84 Lo 31)

POINT	Y	X	Z
PK1	5 063.818	3 031 694.276	1016.850
PK2	5 081.318	3 031 694.276	1016.763
PK3	5 081.318	3 031 719.276	1016.638
PK4	5 076.318	3 031 719.276	1016.800
PK5	5 076.318	3 031 721.776	1016.813
PK6	5 068.444	3 031 721.776	1016.850
PK7	5 068.444	3 031 719.276	1016.825
PK8	5 063.818	3 031 719.276	1016.850

PLATFORM 01 SETTING OUT TABLE (WGS 84 Lo 31)

POINT	Y	X	Z
P1.1	5 062.818	3 031 694.276	1016.850
P1.2	5 117.197	3 031 694.276	1016.850
P1.3	5 117.197	3 031 707.511	1016.850
P1.4	5 113.208	3 031 707.511	1016.850
P1.5	5 113.208	3 031 721.776	1016.850
P1.6	5 062.818	3 031 721.776	1016.850

PLATFORM 02 SETTING OUT TABLE (WGS 84 Lo 31)

POINT	Y	X	Z
P2.1	5 136.973	3 031 678.347	1015.476
P2.2	5 119.273	3 031 678.347	1015.476
P2.3	5 119.273	3 031 690.559	1015.476
P2.4	5 136.979	3 031 690.540	1015.476

RADIUS CENTRE SETTING OUT TABLE (WGS 84 Lo 31)

POINT	Y	X
R1	5 056.700	3 031 745.205
R2	5 067.367	3 031 739.540

BELMOUTH SETTING OUT TABLE (WGS 84 Lo 31)

POINT	Y	X	Z
BL1	5 055.047	3 031 736.272	1020.540
BL2	5 056.729	3 031 742.173	1020.597
BL3	5 075.568	3 031 721.776	1016.850
BL4	5 069.568	3 031 721.801	1017.000
BL5	5 053.731	3 031 744.365	1021.000
BL6	5 059.578	3 031 743.895	1020.400
BL7	5 069.153	3 031 749.625	1019.820
BL8	5 072.305	3 031 745.150	1019.550
BL9	5 065.498	3 031 740.700	1019.700
BL10	5 065.648	3 031 738.461	1019.180

SKILL CENTRE BUILDING SETTING OUT TABLE (WGS 84 Lo 31)

POINT	Y	X	Z
B1	5 083.818	3 031 705.061	1016.850
B2	5 088.048	3 031 705.061	1016.850
B3	5 088.048	3 031 696.831	1016.850
B4	5 100.278	3 031 696.831	1016.850
B5	5 100.278	3 031 697.561	1016.850
B6	5 109.858	3 031 697.561	1016.850
B7	5 109.859	3 031 703.061	1016.850
B8	5 107.723	3 031 703.061	1016.850
B9	5 107.723	3 031 706.061	1016.850
B10	5 109.898	3 031 706.061	1016.850
B11	5 109.898	3 031 719.491	1016.850
B12	5 100.278	3 031 719.491	1016.850
B13	5 100.278	3 031 720.014	1016.850
B14	5 087.818	3 031 720.021	1016.850
B15	5 087.818	3 031 713.076	1016.850
B16	5 089.619	3 031 713.076	1016.850
B17	5 089.619	3 031 711.791	1016.850
B18	5 083.818	3 031 711.791	1016.850

SIMULATION BUILDING SETTING OUT TABLE (WGS 84 Lo 31)

POINT	Y	X	Z
B19	5 121.223	3 031 680.304	1015.476
B20	5 121.373	3 031 688.094	1015.476
B21	5 135.173	3 031 688.094	1015.476
B22	5 135.323	3 031 680.304	1015.476

BUILDING COLUMS SETTING OUT TABLE (WGS 84 Lo 31)

POINT	Y	X	Z
C1	5 084.268	3 031 705.631	1016.850
C2	5 084.268	3 031 711.341	1016.850
C3	5 084.200	3 031 718.200	1016.850
C4	5 084.226	3 031 718.870	1016.850
C5	5 084.304	3 031 719.443	1016.850
C6	5 111.663	3 031 717.671	1016.850
C7	5 111.741	3 031 718.244	1016.850
C8	5 111.767	3 031 718.914	1016.850

NOTES

1. THE CONTRACTOR TO KEEP A FULL SET OF DRAWINGS IN SITE.
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7. ALL CONCRETE TO BE OF MIN GRADE 25MPa/20 FOR BEAMS AND SLABS
8. THE ENGINEER IS NOT RESPONSIBLE FOR THE ADEQUACY OF THE FOUNDATIONS, BRICKWORK OR STRUCTURAL ELEMENTS SUCH AS BRICK LINTOLS OVER OPENINGS, BEAMS, COLUMNS ETC.
9. ALL WORK TO BE DONE ACCORDING TO SABS 1200 AND THE RELEVANT BUILDING/ CONSTRUCTION CODES FOR NATIONAL AND LOCAL AUTHORITIES AS MAY BE APPLICABLE.
10. CURING OF ALL CONCRETE ELEMENTS IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND SHALL BE DONE ACCORDING TO SABS 1200 5.5.8
11. STRIPPING OF SHUTTERING AND REMOVAL OF PROPS ACCORDING TO SABS 1200G 5.4 & 5.2.5
12. 10mm SOFTBOARD TO BE PLACED VERTICALLY BETWEEN CONCRETE AND BRICKWORK FOR SLABS SUPPORTED ON HALF-WALL AT OUTSIDE WALLS.
13. HORIZONTAL SLIDING JOINTS:
    A. FLOOR SLABS: TWO LAYERS OF 250 MICRON PVC PLASTIC SHEETING HORZ. BETWEEN ALL CONCRETE AND BRICKWORK.
    B. ROOF SLABS: TWO LAYERS OF 3-PLY MALTHOID HORIZONTAL BETWEEN ALL CONCRETE AND BRICKWORK.
14. PREPARATION OF SUPPORTING SURFACE FOR SLAB ON LOAD BEARING BRICKWORK: BRICKWORK TO BE EVENLY LAYED AND TRUE HORIZONTAL WITH ALL JOINTS PROPERLY FILLED AND FLUSH WITH TOP SURFACE OF BRICKWORK. SURFACE TO BE PROPERLY CLEANED BEFORE PLACING OF SLIDING MATERIAL.
15. ALL LOAD BEARING BRICK WALLS TO RELEVENT BUILDING REGULATIONS AND CODES
16. ALL FOUNDATIONS TO BE ON SUITABLE SOIL CONDITIONS. (DISCUSS WITH ENGINEER)
17. MINIMUM NOMINAL BRICK STRENGH: 10,5 MPa.
18. MINIMUM MORTAR CLASS: CLASS II.
19. SPECIALISTS ELEMENTS TO BE VERIFIED BY SPECIALIST CONSULTANT OR SUPPLIER.
20. ALL STRUCTURAL COMPONENTS TO BE VERIFIED AND INSPECTED BY STRUCTURAL ENGINEER.
21. ALL ARCHITECTURAL MATERIALS AND SAMPLES TO BE APPROVED BY THE ARCHITECT.
22. ALL BUILDING WORK TO BE IN ACCORDANCE WITH NBR AND SABS OR THE RELEVANT LOCAL AUTHORITY
23. THE CONTRACTOR TO KEEP A FULL SET OF DRAWINGS ON SITE.
24. DIMENSIONS AND LEVELS MUST NOT BE SCALED OR ASSUMED. AFTER NOTIFICATION, DISCREPANCIES OR MISSING DIMENSIONS AND LEVELS WILL BE CORRECTED IN WRITTING BY THE ENGINEER.
25. ALL WORK SHALL BE EXECUTED IN STRICT ACCORDANCE WITH THE APPLICABLE PARTS OF THE LATEST EDITION OF SANS 10400, SANS 2001, SANS 1200 ,THE OSH ACT AND THE PROJECT SPECIFICATION IN THE CONTRACT DOCUMENTS.
26. THE CONTRACTOR SHALL CHECK ALL PROJECT DIMENSIONS ON SITE BEFOREHAND,ANY DICREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER.
27. ALL SANS SPECIFICATIONS MENTIONED IN THE NOTES,ON THE DRAWINGS AND IN PROJECT SPECIFICATIONS SHALL BE AVALAIBLE ON SITE AT ALL TIMES IN HARD COPY FORMAT.
28. ALL INSTRUCTIONS FROM THE ENGINEER TO BE WRITTEN IN THE SITE INSTRUCTION BOOK,THAT SHOULD BE PROVIDED BY THE CONTRACTOR.
29. PRODUCTS DIFFERENT TO THOSE SPECIFIED MAY BE USED WITH THE ENGINEER'S PRIOR APPROVAL.
30. UNLESS OTHERWISE INDICATED ON DRAWINGS, ALL WATERPROOFING,DRAINAGE FALLS AND FINISHES ARE ACCORDING TO THE ARCHITECT DETAILS AND SPECIFICATIONS.
31. THE CONTRACTOR SHALL DISCLOSE HIS PROPOSED BUILDING SEQUENCE IN BOARD TERMS BEFORE SITE ESTABLISHMENT.
32. ANY DEVIATIONS FROM THE CONSTRUCTION DRAWINGS PLANNED BY THE CONTRACTOR SHALL BE PROPOSED TO THE ENGINEER IN FULL DETAIL FOR A DECISION. THE ENGINEER IS UNDER NO OBLIGATION TO APPROVE SUCH DEVIATIONS,BUT IF APPROVED,THE APPROVAL SHALL BE IN WRITTING.
33. REFER TO ALL RELEVANT DRAWINGS BY:-
    - ARCHITECTS - STRUCTURAL ENGINEERS
    - ELECTRICAL ENGINEERS - MECHANICAL ENGINEERS
34. ALL COLUMNS, WALLS AND BEAMS TO BE PLACED CENTRALLY ON GRID/ CENTRE LINES UNLESS DIMENSIONED OTHERWISE.
35. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT HE UNDERSTANDS AND COMPLIES WITH ALL RELEVANT ENGINEERING DRAWINGS AND SPECIFICATIONS AND IS ADEQUATELY EXPERIENCED TO UNDERTAKE ALL ASPECTS OF THE WORK SAFELY.
36. THE CONTRACTOR IS TO COMPLY AT ALL TIMES WITH ALL RELEVANT MUNICIPAL REGULATIONS AND BYLAWS IN THE AREA OF THE SITE AND IS TO ENSURE THAT HE HAS A SET OF APPROVED BUILDING PLANS ON SITE AT ALL TIMES
37. ALL PRODUCTS SPECIFIED FOR USE ARE TO BE USED STRICTLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS AT ALL TIMES.
38. SHOULD THE ENGINEER BE REQUIRED ON SITE,48 HRS NOTICE SHOULD BE REQUESTED IN WRITTING,FAILURE TO DO SO,THE ENGINEER WILL NOT BE HELD RESPONSIBLE FOR ANY DELAYS OR COST IMPLICATIONS.
39. IN CASE OF THE FIELD ENGINEERING QUIRIES TO THE ENGINEER, IN WRITTING. THE CONTRACTOR SHALL HAVE A PROPOSED SOLUTION AND SUFFICIENT DIGITAL PHOTOGRAPHS TO SHOW THE PROBLEM.

FOR MUNICIPAL SUBMISSION

REVISIONS

No.	Description	Date
00	Issued for Municipal Submission	25/01/2024

MOTAU ENGINEERS

MOTAU ENGINEERS

18 LOTTERING STREET, BENDOR PARK POLOKWANE.

DESIGNED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

DRAWN
NAME: D.G. MASHAVHA
SIGNATURE: DATE: JANUARY 2024

CHECKED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

INFORMATION OFFICE CHECKED
NAME: D.G. MASHAVHA
SIGNATURE: DATE: JANUARY 2024

DESIGN OFFICE APPROVAL
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

SERVICES SETA

SERVICES SETA

Project Description:

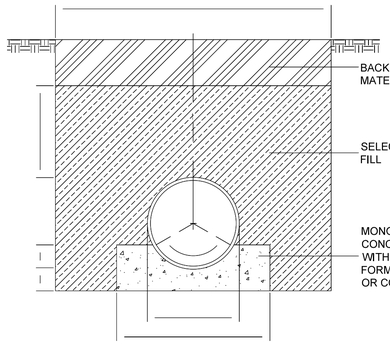
GA-PASHA VILLAGE SKILL CENTRE

Drawing Description:

SETTING OUT DATA

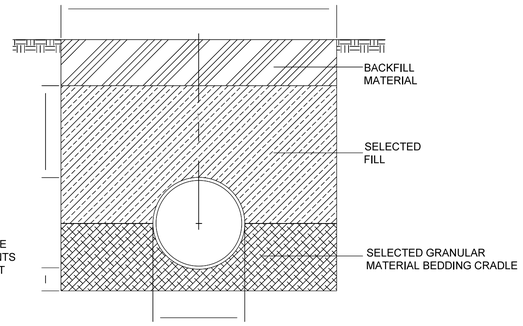
Project Number:	Drawing Number:
MOT2401	300
Date: JANUARY 2024	Scale: AS SHOWN
Sheet Size: A1	Revision: 00
SHEET 1 OF 1	
Discipline: CIVIL	

D/4 = 300 MAX. WITH
a) 100 MIN. TRENCH IN SOIL
b) 50 MIN. FOR TRENCH IN ROCK



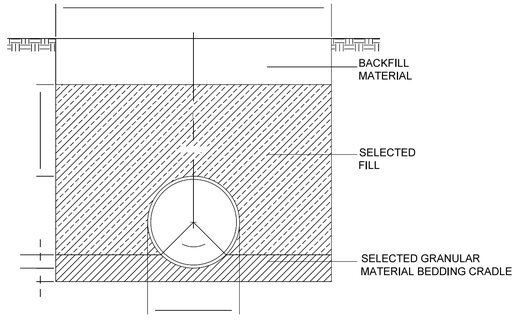
CLASS A

a) IN SOIL
X = D/6: 75 MIN. 200 MAX
b) IN ROCK
X = D/4: 150 MIN. 200 MAX.



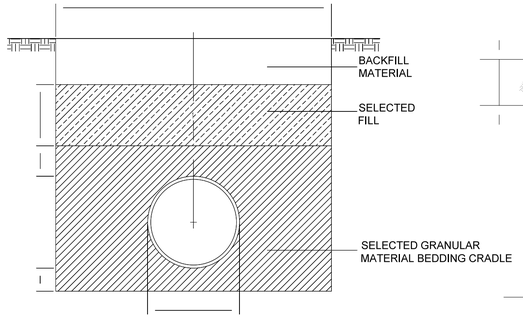
CLASS B

a) IN SOIL
X = D/8: 75 MIN. 200 MAX
b) IN ROCK
X = D/8: 100 MIN. 200 MAX.



CLASS C

D/4: 100 MIN. 200 MAX.

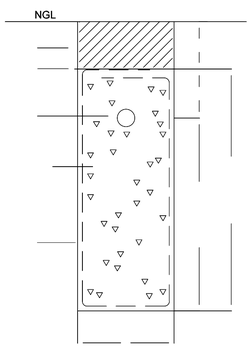


FLEXIBLE PIPE

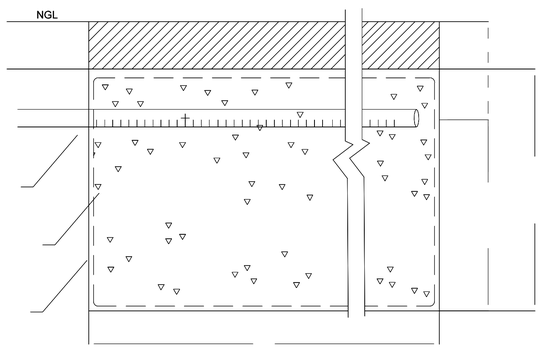
W = TRENCH PAY WIDTH
D = OUTSIDE DIAMETER OF PIPE

PIPE BEDDING DETAILS

SCALE: 1:10



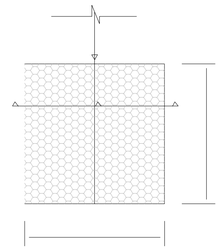
SECTION

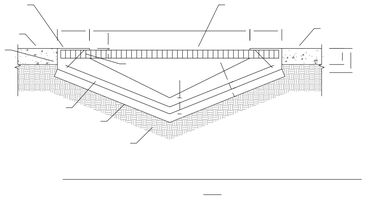


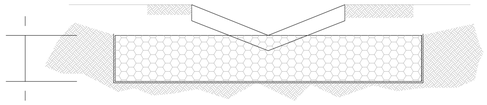
LONGITUDINAL SECTION

SOAKAWAY DETAIL

NTS

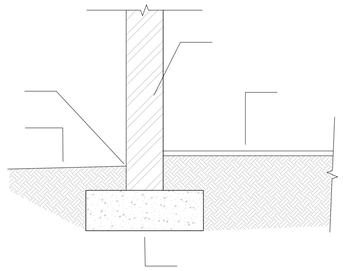






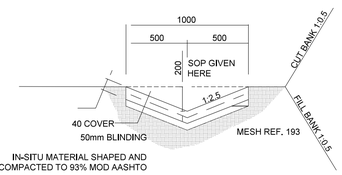
RENO MATTRESS DETAIL

SCALE: N.T.S



BUILDING SETTING OUT DETAILS

SCALE N.T.S.

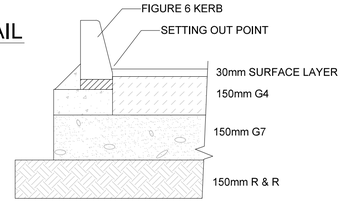


CONCRETE V-DRAIN

NTS

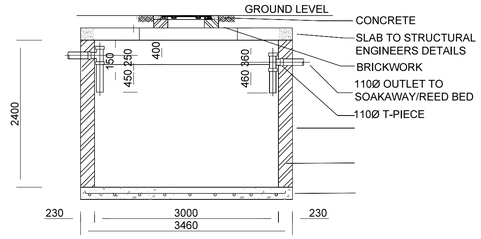
NOTE:

1, CONCRETE CHANNEL TO BE 100mm THICK USING 19/25 MPa CONCRETE. CONCRETE TO BE CAST IN 2,0m ALTERNATE PANELS WITH EXPANSION JOINTS AT 10m INTERVALS (EVERY 5th PANEL).
2. CONCRETE CHANNEL TO BE REINFORCED WITH MESH REF. 193 MINIMUM COVER = 40mm



PARKING AND ACCESS ROAD LAYWORKS DETAILS

SCALE N.T.S.



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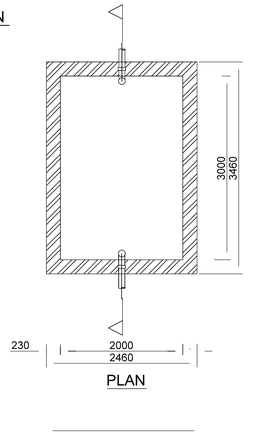
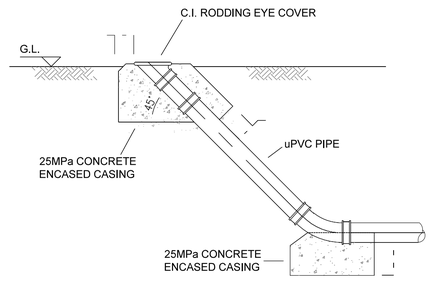


PLAN



SECTION RODDING EYE

N.T.S.

NOTES

1. THE CONTRACTOR TO KEEP A FULL SET OF DRAWINGS IN SITE.
2. DRAWINGS ARE NOT BE SCALED, ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE PRIOR TO COMMENCEMENT OF WORKS, ANY DISCREPANCIES TO BE BROUGHT TO THE ENGINEER / ARCHITECT'S ATTENTION IMMEDIATELY.
3. THIS DRAWING TO BE READ AND USED IN CONJUCTION WITH ALL OTHER DRAWINGS, STANDARD DETAILS DRAWINGS AND SPECIFICATIONS RELATED TO THIS PROJECT.
4. ALL BUILDING WORK AND MATERIAL ARE TO COMPLY WITH LOCAL AUTHORITY'S REQUIREMENTS AND ARE TO BE IN ACCORDANCE WITH SANS 10400 NATIONAL BUILDING REGULATIONS.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT HE UNDERSTANDS AND COMPLIES WITH ALL RELEVANT ENGINEERING DRAWINGS AND SPECIFICATIONS AND IS ADEQUATELY EXPERIENCED TO UNDERTAKE ALL ASPECTS OF THE WORK SAFELY.
6. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE WORKS FROM SURFACE WATER RUNOFF THAT MAY CAUSE EROSION DAMAGE, USING CHANNELS, BERMS, PUMPS etc. AS AND WHEN REQUIRED AND DIRECT GROUND WATER AWAY FROM THE WORKS
7. IT IS THE CONTRACTORS RESPONSIBILITY TO IDENTIFY, RELOCATE OR PROTECT ALL SURFACE AND UNDERGROUND SERVICES PRIOR TO COMMENCEMENT OF WORK.
8. THE CONTRACTOR IS TO COMPLY AT ALL TIMES WITH ALL RELEVANT LOCAL MUNICIPALITY REGULATIONS AND BYLAWS.
9. ALL PRODUCTS SPECIFIED FOR USE TO BE USED STRICTLY ACCORDING TO MANUFACTURES INSTRUCTIONS AND SPECIFICATIONS.

GENERAL NOTE:

1. ALL DIMENSIONS & LEVELS TO BE CHECKED ON SITE BEFORE CONSTRUCTION COMMENCES.
2. ALL DIMENSIONS & LEVELS TO BE CHECKED WITH ARCHITECTS DRAWINGS BEFORE CONSTRUCTION COMMENCES.
3. HORIZONTAL V-JOINT BETWEEN ALL BRICKWORK AND CONCRETE.
4. ALL NON-LOAD BEARING BRICKWORK TO STOP 10mm UNDER SLAB.
5. ALL LOAD BEARING BRICKWORK SHOWN WITH HATCHING.
6. ALL CONCRETE TO BE IN ACCORDANCE WITH SABS 1200 G.
7. ALL CONCRETE TO BE OF MIN GRADE 25MPa/20 FOR BEAMS AND SLABS
8. THE ENGINEER IS NOT RESPONSIBLE FOR THE ADEQUACY OF THE FOUNDATIONS, BRICKWORK OR STRUCTURAL ELEMENTS SUCH AS BRICK LINTOLS OVER OPENINGS, BEAMS, COLUMNS ETC.
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10. CURING OF ALL CONCRETE ELEMENTS IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND SHALL BE DONE ACCORDING TO SABS 1200 5.5.8
11. STRIPPING OF SHUTTERING AND REMOVAL OF PROPS ACCORDING TO SABS 1200G 5,4 & 5.2.5
12. 10mm SOFTBOARD TO BE PLACED VERTICALLY BETWEEN CONCRETE AND BRICKWORK FOR SLABS SUPPORTED ON HALF-WALL AT OUTSIDE WALLS.
13. HORIZONTAL SLIDING JOINTS:
    A. FLOOR SLABS:
       TWO LAYERS OF 250 MICRON PVC PLASTIC SHEETING HORZ. BETWEEN ALL CONCRETE AND BRICKWORK.
    B. ROOF SLABS:
       TWO LAYERS OF 3-PLY MALTHOID HORIZONTAL BETWEEN ALL CONCRETE AND BRICKWORK.
14. PREPARATION OF SUPPORTING SURFACE FOR SLAB ON LOAD BEARING BRICKWORK: BRICKWORK TO BE EVENLY LAYED AND TRUE HORIZONTAL WITH ALL JOINTS PROPERLY FILLED AND FLUSH WITH TOP SURFACE OF BRICKWORK. SURFACE TO BE PROPERLY CLEANED BEFORE PLACING OF SLIDING MATERIAL.
15. ALL LOAD BEARING BRICK WALLS TO RELEVENT BUILDING REGULATIONS AND CODES
16. ALL FOUNDATIONS TO BE ON SUITABLE SOIL CONDITIONS. (DISCUSS WITH ENGINEER)
17. MINIMUM NOMINAL BRICK STRENGH: 10,5 MPa.
18. MINIMUM MORTAR CLASS: CLASS II.
19. SPECIALISTS ELEMENTS TO BE VERIFIED BY SPECIALIST CONSULTANT OR SUPPLIER.
20. ALL STRUCTURAL COMPONENTS TO BE VERIFIED AND INSPECTED BY STRUCTURAL ENGINEER.
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29. PRODUCTS DIFFERENT TO THOSE SPECIFIED MAY BE USED WITH THE ENGINEER'S PRIOR APPROVAL.
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31. THE CONTRACTOR SHALL DISCLOSE HIS PROPOSED BUILDING SEQUENCE IN BOARD TERMS BEFORE SITE ESTABLISHMENT.
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33. REFER TO ALL RELEVANT DRAWINGS BY:-
    - ARCHITECTS - STRUCTURAL ENGINEERS
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34. ALL COLUMNS, WALLS AND BEAMS TO BE PLACED CENTRALLY ON GRID/ CENTRE LINES UNLESS DIMENSIONED OTHERWISE.
35. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT HE UNDERSTANDS AND COMPLIES WITH ALL RELEVANT ENGINEERING DRAWINGS AND SPECIFICATIONS AND IS ADEQUATELY EXPERIENCED TO UNDERTAKE ALL ASPECTS OF THE WORK SAFELY.
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FOR MUNICIPAL SUBMISSION

REVISIONS

No.	Description	Date
00	Issued for Municipal Submission	25/01/2024

MOTAU ENGINEERS

MOTAU ENGINEERS

18 LOTTERING STREET, BENDOR PARK POLOKWANE.

DESIGNED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

DRAWN
NAME: D.G. MASHAVHA
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DESIGN OFFICE APPROVAL
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

SERVICES SETA

SERVICES SETA

Project Description:

GA-PASHA VILLAGE SKILL CENTRE

Drawing Description:

STANDARD DATA SHEET 01 OF 02

Project Number:	Drawing Number:
MOT2401	400
Date: JANUARY 2024	Scale: AS SHOWN
Sheet Size: A1	Revision: 00
SHEET 1 OF 2	
Discipline: CIVIL	

PLOT DATE: 27/01/2024 3:02 pm

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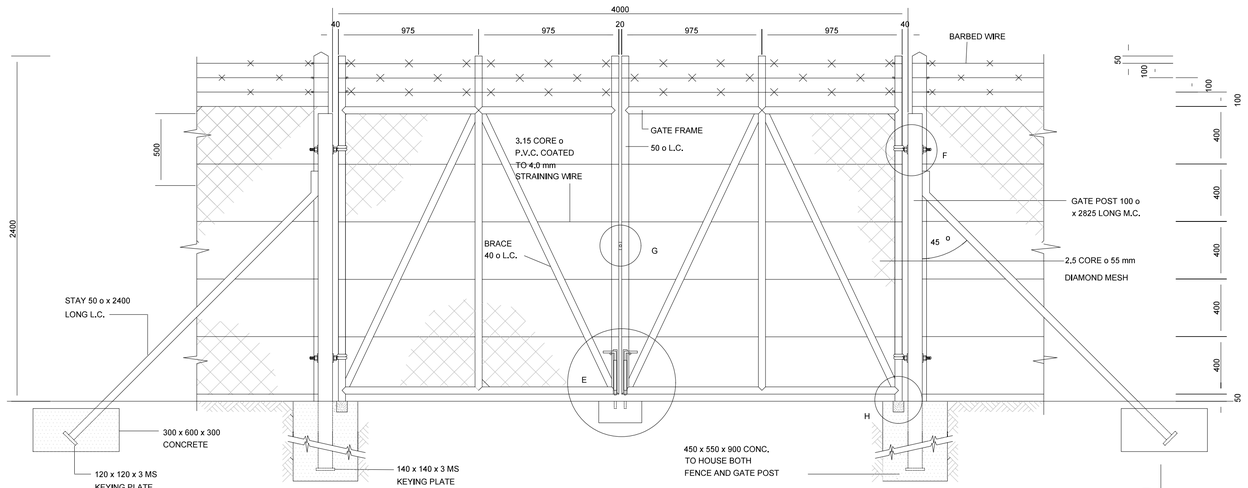
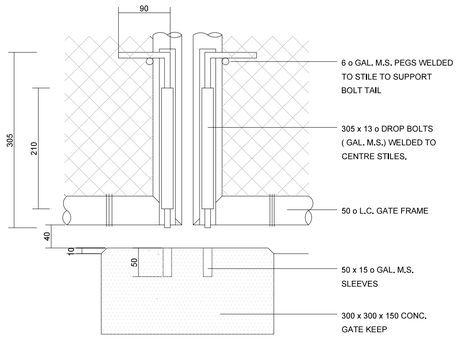


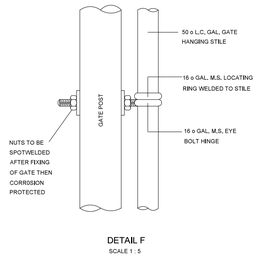
ELEVATION

VEHICULAR GATE



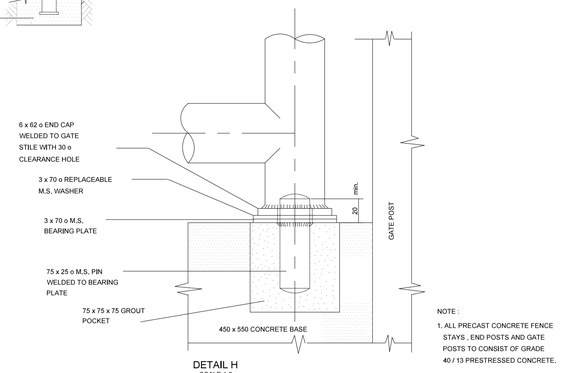
DETAIL E

SCALE 1 : 5



DETAIL F

SCALE 1 : 5



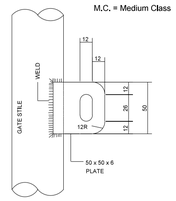
DETAIL H

SCALE 1:2

NOTE :

L.C. = Light Class

M.C. = Medium Class



DETAIL G

SCALE 1 : 2

NOTES

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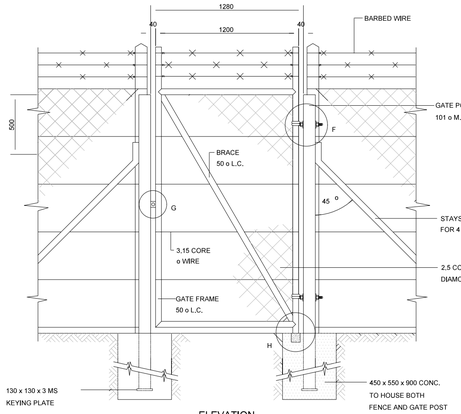
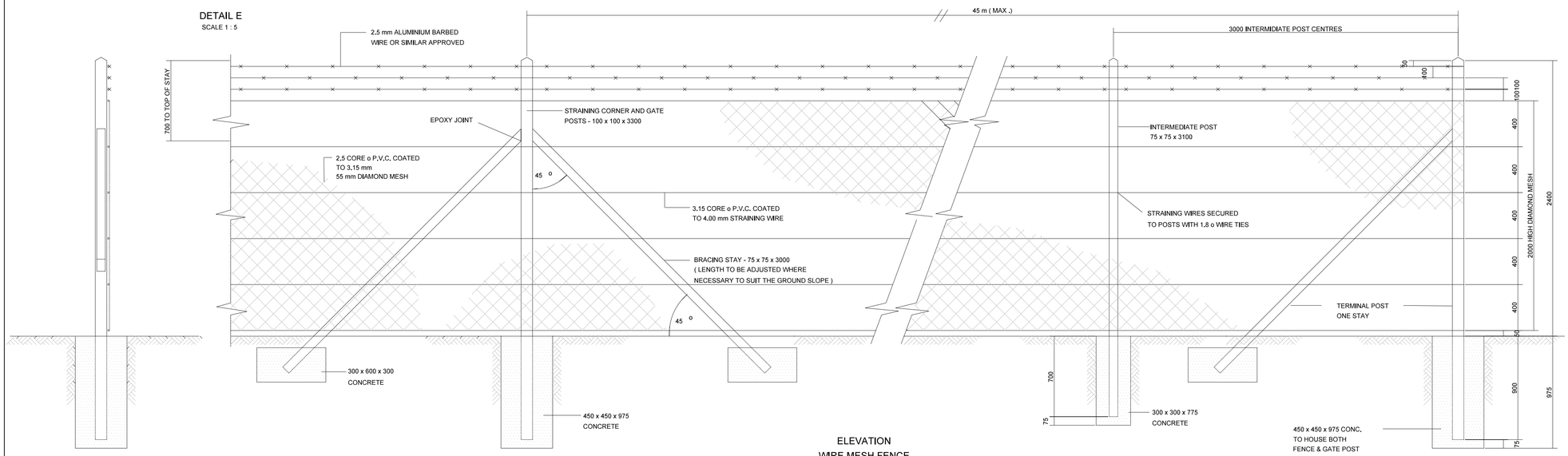


ELEVATION

PEDESTRIAN GATE



SIDE ELEVATION

ELEVATION

WIRE MESH FENCE

WIRE MESH FENCING DETAIL

SCALE : NTS

GENERAL NOTE:

1. ALL DIMENSIONS & LEVELS TO BE CHECKED ON SITE BEFORE CONSTRUCTION COMMENCES.
2. ALL DIMENSIONS & LEVELS TO BE CHECKED WITH ARCHITECTS DRAWINGS BEFORE CONSTRUCTION COMMENCES.
3. HORIZONTAL V-JOINT BETWEEN ALL BRICKWORK AND CONCRETE.
4. ALL NON-LOAD BEARING BRICKWORK TO STOP 10mm UNDER SLAB.
5. ALL LOAD BEARING BRICKWORK SHOWN WITH HATCHING.
6. ALL CONCRETE TO BE IN ACCORDANCE WITH SABS 1200 G.
7. ALL CONCRETE TO BE OF MIN GRADE 25MPa/20 FOR BEAMS AND SLABS
8. THE ENGINEER IS NOT RESPONSIBLE FOR THE ADEQUACY OF THE FOUNDATIONS, BRICKWORK OR STRUCTURAL ELEMENTS SUCH AS BRICK LINTOLS OVER OPENINGS, BEAMS, COLUMNS ETC.
9. ALL WORK TO BE DONE ACCORDING TO SABS 1200 AND THE RELEVANT BUILDING/ CONSTRUCTION CODES FOR NATIONAL AND LOCAL AUTHORITIES AS MAY BE APPLICABLE.
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No.	Description	Date
00	Issued for Municipal Submission	25/01/2024

MOTAU ENGINEERS

MOTAU ENGINEERS

18 LOTTERING STREET, BENDOR PARK POLOKWANE.

DESIGNED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

DRAWN
NAME: D.G. MASHAVHA
SIGNATURE: DATE: JANUARY 2024

CHECKED
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SERVICES SETA

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Project Description:

GA-PASHA VILLAGE SKILL CENTRE

Drawing Description:

STANDARD DATA SHEET 02 OF 02

Project Number:	Drawing Number:
MOT2401	401
Date: JANUARY 2024	Scale: AS SHOWN
Sheet Size: A1	Revision: 00
SHEET 2 OF 2	
Discipline: CIVIL	

PLOT DATE: 27/01/2024 3:13 pm

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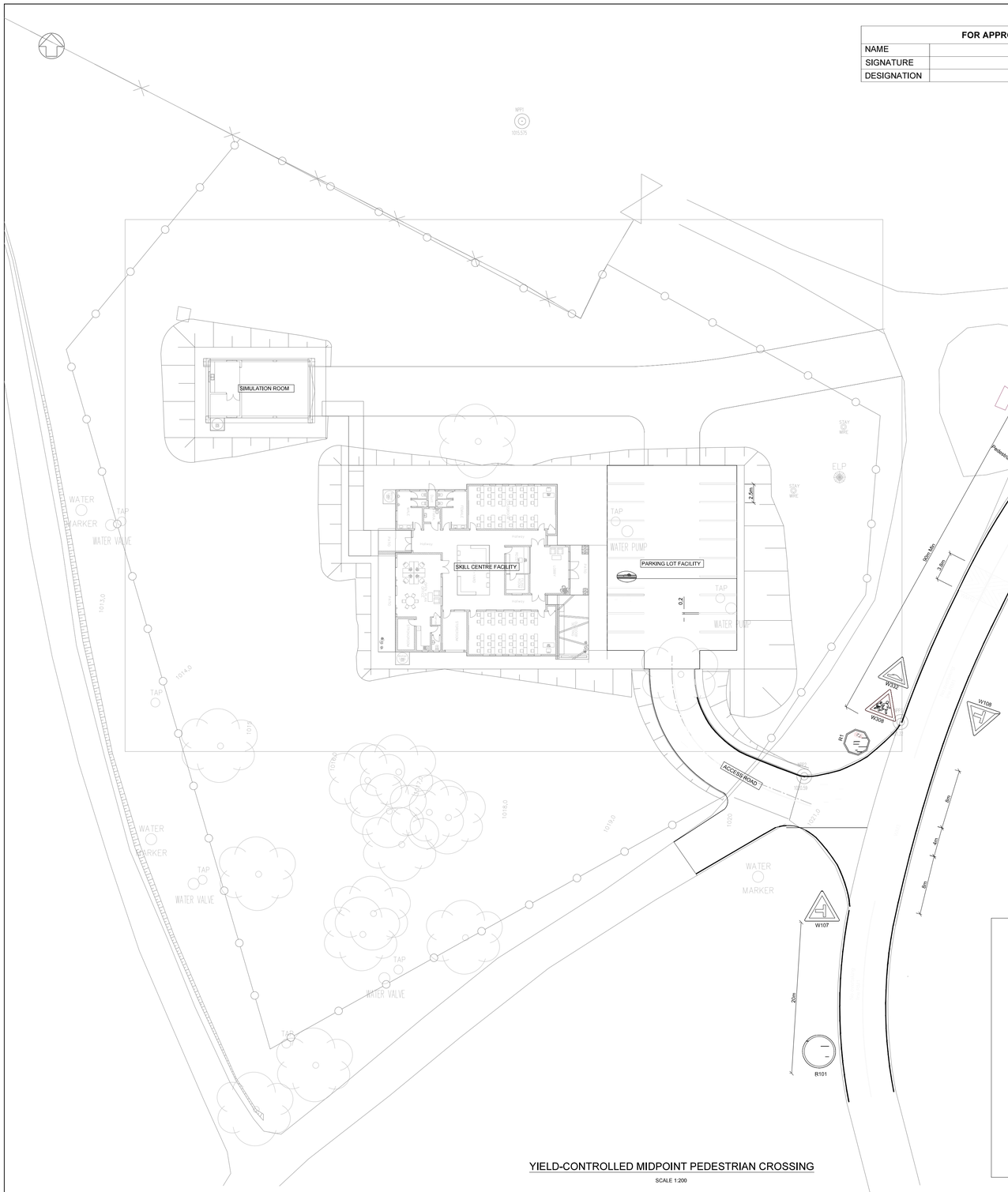
FOR APPROVAL	
NAME	
SIGNATURE	
DESIGNATION	



YIELD-CONTROLLED MIDPOINT PEDESTRIAN CROSSING

SCALE 1:200

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NOTES

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3. THIS DRAWING TO BE READ AND USED IN CONJUCTION WITH ALL OTHER DRAWINGS, STANDARD DETAILS DRAWINGS AND SPECIFICATIONS RELATED TO THIS PROJECT.
4. ALL BUILDING WORK AND MATERIAL ARE TO COMPLY WITH LOCAL AUTHORITY'S REQUIREMENTS AND ARE TO BE IN ACCORDANCE WITH SANS 10400 NATIONAL BUILDING REGULATIONS.
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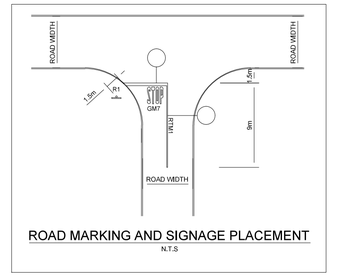
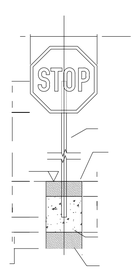


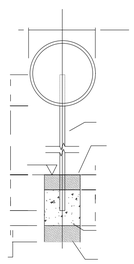
ROAD MARKING AND SIGNAGE PLACEMENT

N.T.S



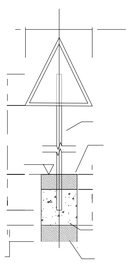
ROAD SIGNAGE - R1 DETAILS

N.T.S



REGULATORY SIGN DETAIL

N.T.S



WARNING SIGN DETAIL

N.T.S

FOR MUNICIPAL SUBMISSION

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SERVICES SETA

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Project Description:

GA-PASHA VILLAGE SKILL CENTRE

Drawing Description:

PAINT MARKING & YIELD-CONTROLLED MIDPOINT PEDESTRIAN CROSSING DETAIL

Project Number:	Drawing Number:
MOT2401	500
Date: JANUARY 2024	Scale: AS SHOWN
Sheet Size: A1	Revision: 00
SHEET 1 OF 1	
Discipline: CIVIL	

PLOT DATE: 27/01/2024 8:44 pm

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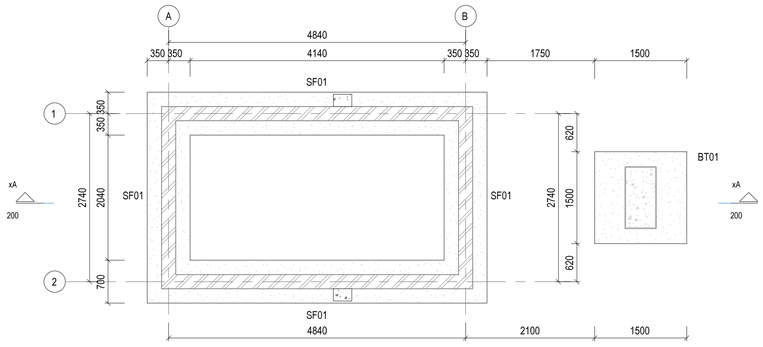

FOUNDATION LAYOUT

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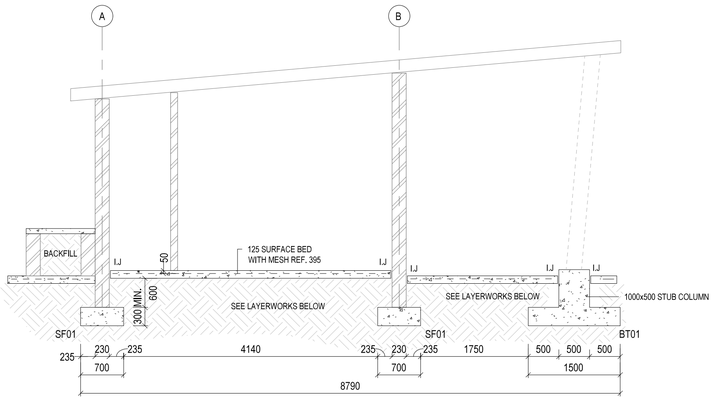

SECTION xA-xA

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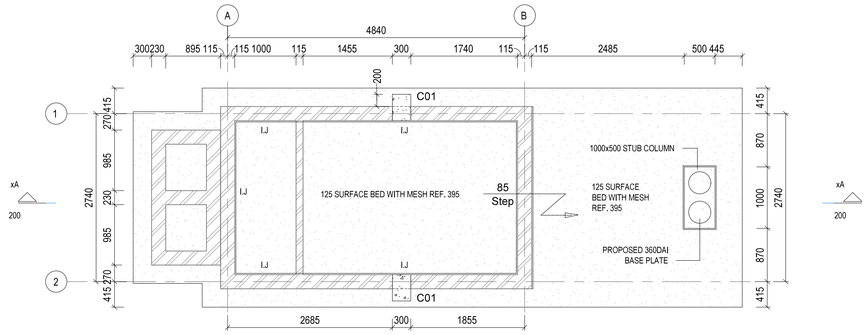

SURFACE BED LAYOUT

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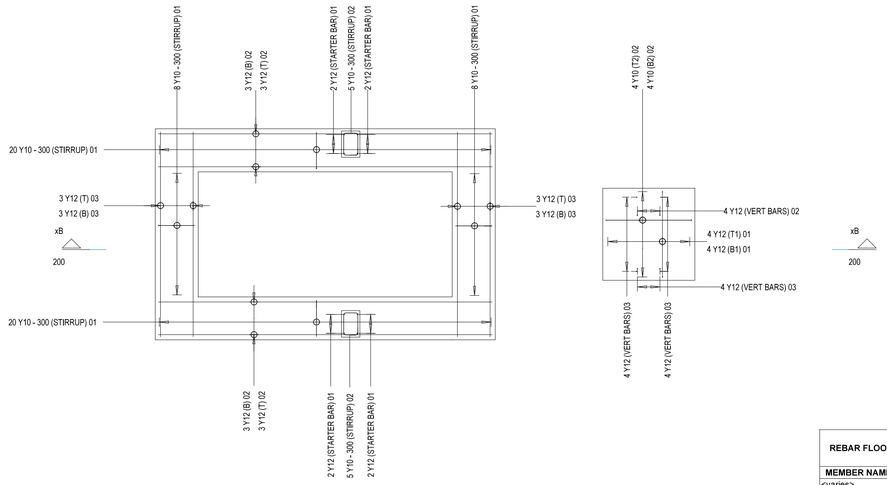
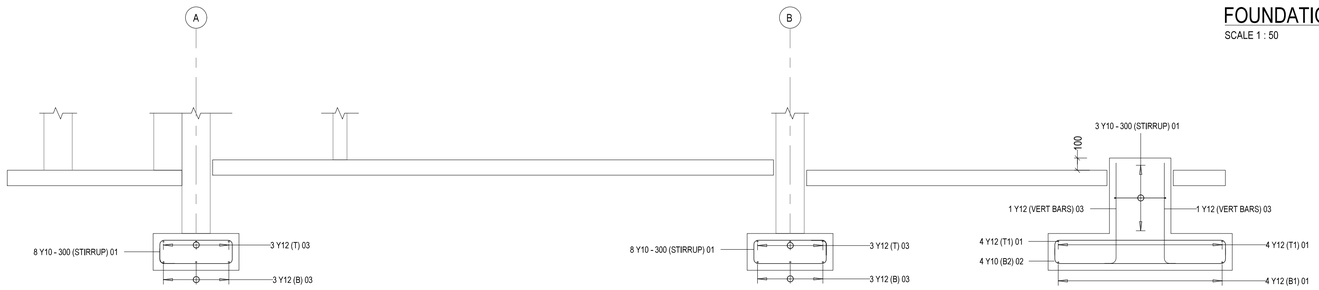


FOUNDATION REINFORCEMENT LAYOUT

SCALE 1 : 50



REINFORCEMENT SECTION - xB

SCALE 1 : 25

REBAR FLOOR WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
<varies>	Y10	81 kg
<varies>	Y12	129 kg
TOTAL		210 kg

COLUMN SCHEDULE

TYPE MARK	TYPE
C01	300x430 RC COLUMN
STUB COLUMN	1000x500 RC COLUMN

REBAR FLOOR SCHEDULE

MEMBER NAME	NUM	MARK	TYPE	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
BASE TYPE 01		01	Y12	8	1600	35	1400	0	0	0	0
BASE TYPE 01		02	Y10	8	1600	35	1400	0	0	0	0
C01 STARTER BAR		01	Y12	8	1610	37	300	1340	0	0	0
C01 STARTER BAR		02	Y10	10	1350	60	370	240	0	0	0
GUARD HOUSE - REINFORCEMENT		01	Y10	56	1730	60	200	600	0	0	0
GUARD HOUSE - REINFORCEMENT		02	Y12	12	5440	20	5440	0	0	0	0
GUARD HOUSE - REINFORCEMENT		03	Y12	12	3340	20	3340	0	0	0	0
STUB COLUMN REBAR		01	Y10	3	2810	60	920	420	0	0	0
STUB COLUMN REBAR		02	Y12	4	790	37	725	100	0	0	0
STUB COLUMN REBAR		03	Y12	12	890	37	825	100	0	0	0

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23. THE CONTRACTOR TO KEEP A FULL SET OF DRAWINGS ON SITE.
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FOR CONSTRUCTION

REVISIONS

No.	Description	Date
00	Issued for Construction	25/01/2024

MOTAU ENGINEERS

MOTAU ENGINEERS

18 LOTTERING STREET, BENDOR PARK
POLOKWANE.

DESIGNED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

DRAWN
NAME: D.G. MASHAVHA
SIGNATURE: DATE: JANUARY 2024

CHECKED
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INFORMATION OFFICE CHECKED
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SIGNATURE: DATE: JANUARY 2024

DESIGN OFFICE APPROVAL
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

SERVICES SETA

SERVICES SETA

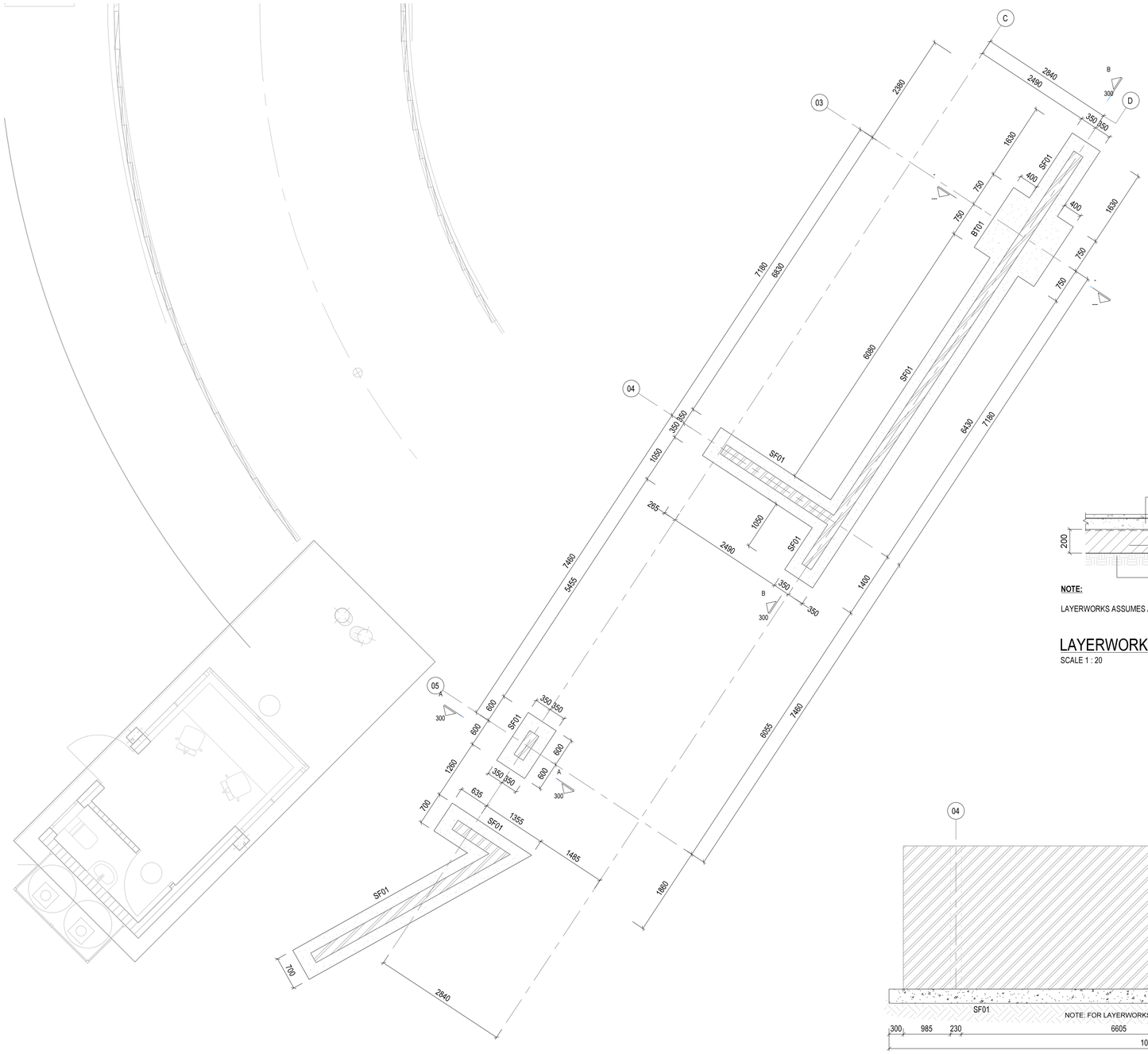
Project Description:

GA-PASHA VILLAGE SKILL CENTRE

Drawing Description:

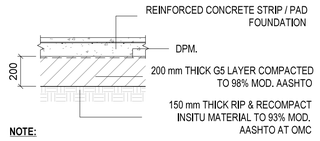
GUARD HOUSE - FOUNDATION & REINFORCEMENT, SURFACE-BED, SECTIONS AND REINFORCEMENT BENDING SCHEDULE

Project Number:	Drawing Number:
MOT2401	200
Date: JANUARY 2024	Scale: AS SHOWN
Sheet Size: A1	Revision: 00
SHEET 1 OF 1	
Discipline: STRUCTURAL	



BOUNDARY WALL - FOUNDATION LAYOUT

SCALE 1 : 50

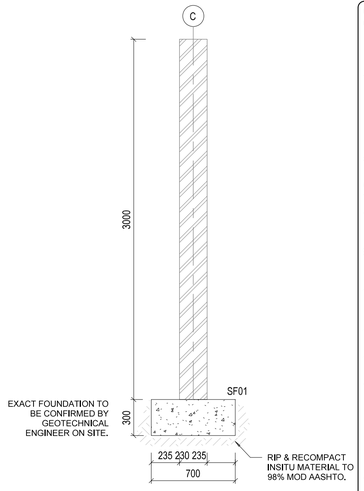


NOTE:

LAYERWORKS ASSUMES AN INSITU CBR > 15.

LAYERWORKS DETAILS: FOUNDATIONS

SCALE 1 : 20



SECTION A

SCALE 1 : 25

FOUNDATION SCHEDULE	
TYPE MARK	TYPE
BT01	1500x1500x300 RC BASE
SF01	700x300 RC S.F

LEGEND

TOC	TOP OF CONCRETE	CJ	CONSTRUCTION JOINT
TOW	TOP OF WALL	SJ	SAW CUT JOINT
D/S	DOWNSTAND CONCRETE	MJ	MOVEMENT JOINT
U/S	UPSTAND CONCRETE	IJ	ISOLATION JOINT
RWP	RAINWATER PIPE	FB	FULL BORE OUTLET

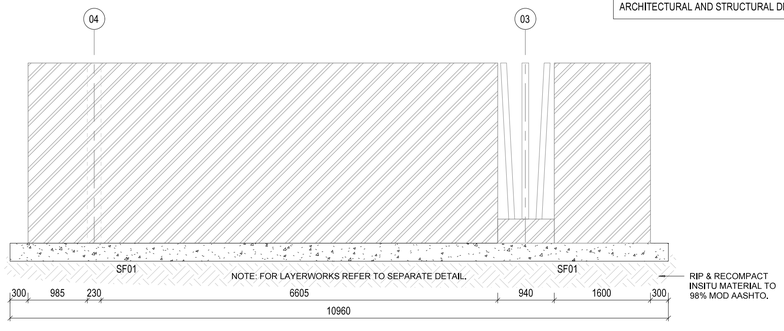
KEY:

NEW WALL

EXISTING WALL TO REMAIN

EXISTING WALL TO BE DEMOLISHED

ALL DIMENSIONS TO BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES TO BE REPORTED TO THE AUTHOR IMMEDIATELY. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND STRUCTURAL DRAWINGS.



SECTION B

SCALE 1 : 50

GENERAL NOTE:

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FOR CONSTRUCTION

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MOTAU ENGINEERS

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SERVICES SETA

SERVICES SETA

Project Description:

GA-PASHA VILLAGE SKILL CENTRE

Drawing Description:

BOUNDARY WALL FOUNDATION AND SECTIONS

Project Number:	Drawing Number:
MOT2401	300
Date: JANUARY 2024	Scale: AS SHOWN
Sheet Size: A1	Revision: 00
SHEET 1 OF 1	
Discipline: STRUCTURAL	

PLOT DATE: 27/01/2024 12:31 pm

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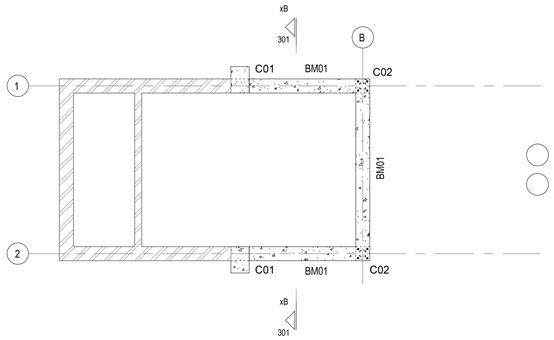
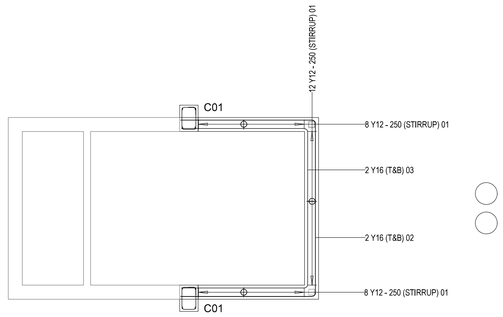
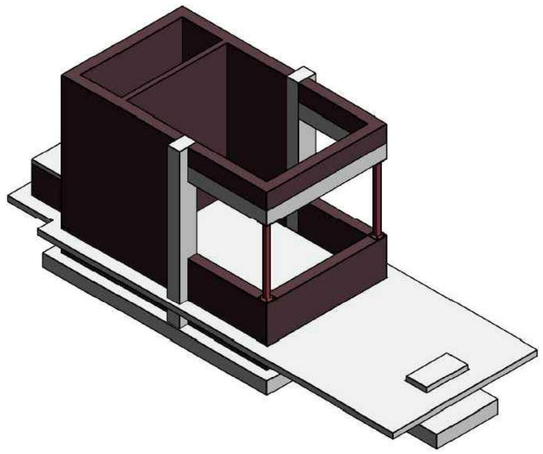


BEAM LAYOUT
SCALE 1 : 50



BEAM REINFORCEMENT LAYOUT
SCALE 1 : 50



3D
SCALE

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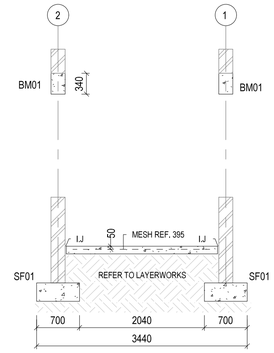
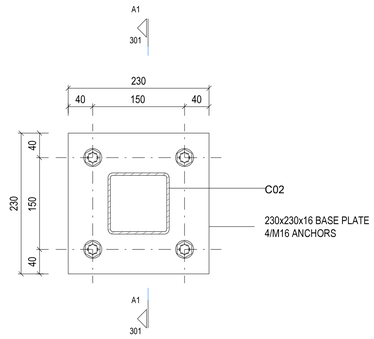
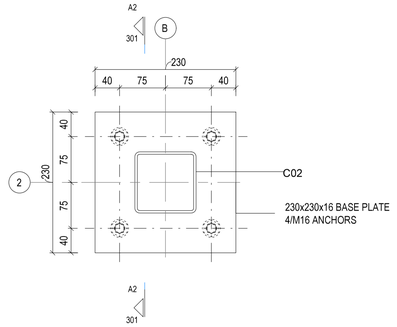


SECTION xB-xB
SCALE 1 : 50



PLAN - BASE PLATE DETAIL BOT.
SCALE 1 : 5

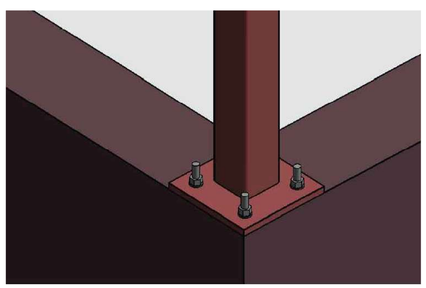


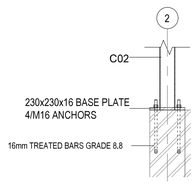
PLAN - BASE PLATE DETAIL TOP.
SCALE 1 : 5

REBAR FLOOR WEIGHT SUMMARY		
MEMBER NAME	TYPE	WEIGHT
BM01	Y12	25 kg
BM01	Y16	44 kg
TOTAL		69 kg

FRAMING SCHEDULE	
TYPE MARK	TYPE
BM01	230x340 RC BEAM

COLUMN SCHEDULE	
TYPE MARK	TYPE
C02	100x100x4.0 SHS
C01	300x430 RC COLUMN
BRICK PIER	340x340 BWK COLUMN
STUB COLUMN	1000x500 RC COLUMN





SECTION A1 BOT - SECTION
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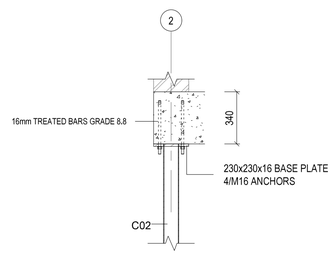

SECTION A2 TOP - SECTION
SCALE 1 : 20

REBAR FLOOR SCHEDULE

MEMBER NAME	NUM	MARK	TYPE	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
BM01		01	Y12	28	1010	60	170	280	0	0	0
BM01		02	Y16	2	7230	38	2210	2895	2210	0	0
BM01		03	Y16	2	6680	38	2070	2620	2070	0	0

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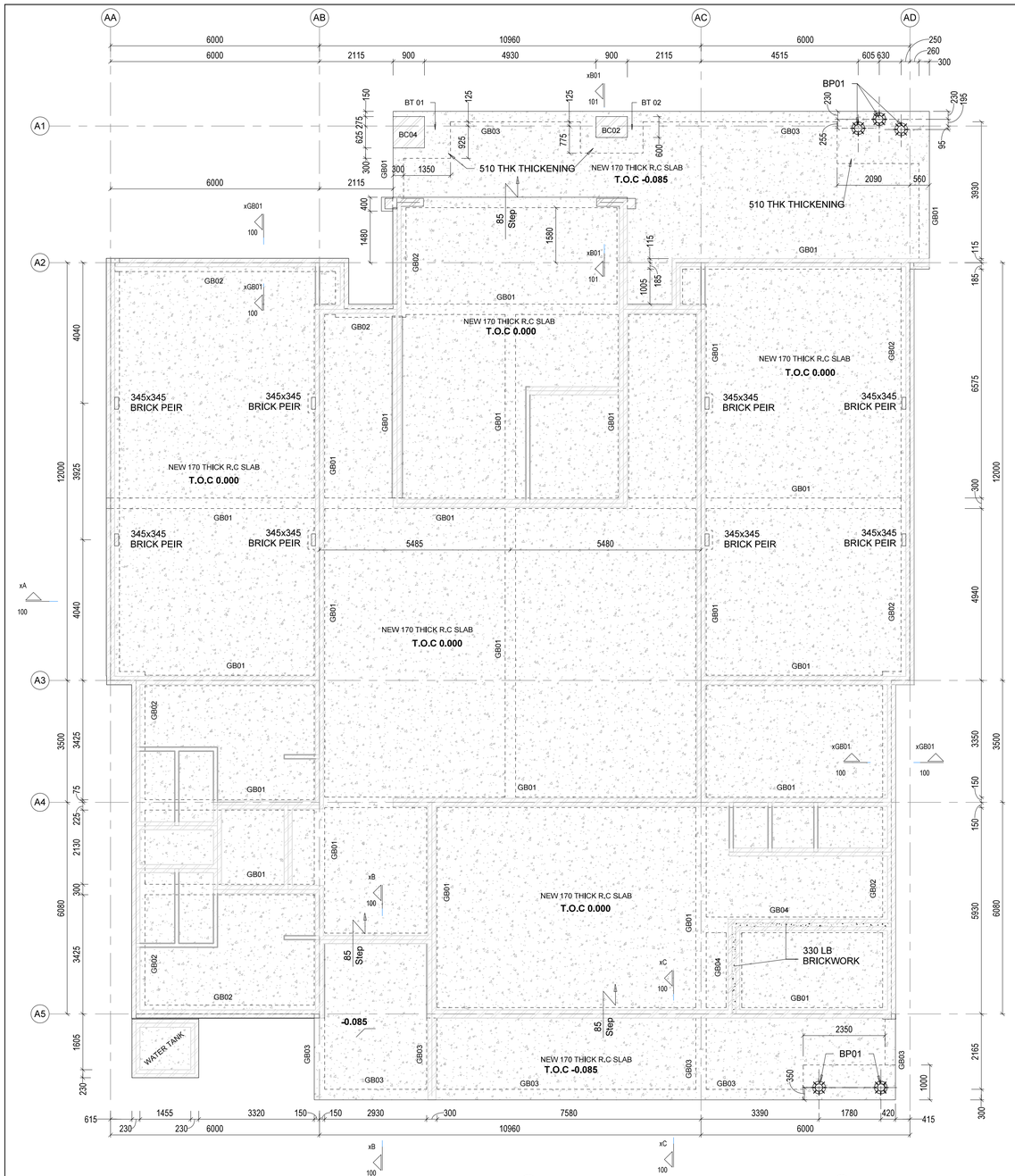
GA-PASHA VILLAGE SKILL CENTRE

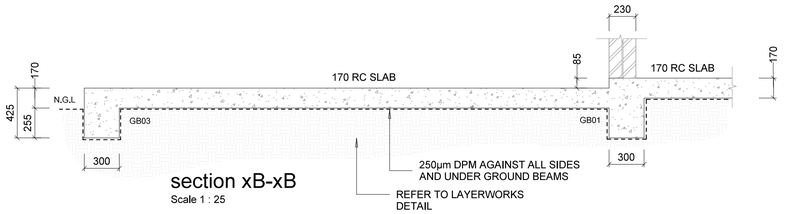
Drawing Description:
GUARD HOUSE - RING BEAM LAYOUT, SECTIONS, DETAILS AND REINFORCEMENT BENDING SCHEDULE

Project Number:	Drawing Number:
MOT2401	301
Date: JANUARY 2024	Scale: AS SHOWN
Sheet Size: A1	Revision: 00
SHEET 1 OF 1	
Discipline: STRUCTURAL	



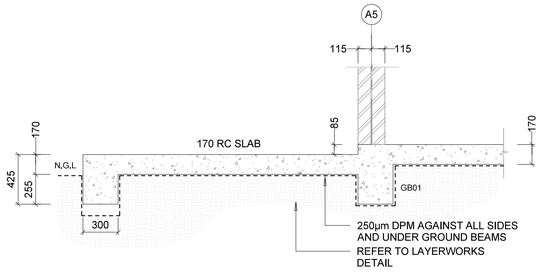
FOUNDATION LAYOUT - SKILL CENTRE

Scale 1 : 75



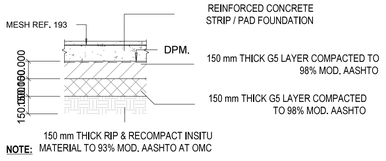
section xB-xB

Scale 1 : 25



section xC-xC

Scale 1 : 25



NOTE: LAYERWORKS ASSUMES AN INSITU CBR > 15.

LAYERWORKS DETAILS: FOUNDATIONS \ SURFACEBED

Scale 1 : 25

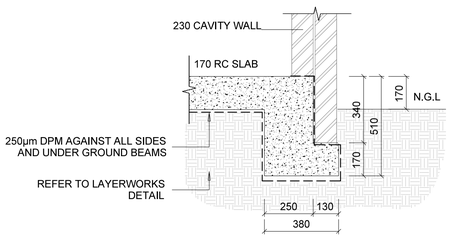
GROUND BEAM SCHEDULE	
TYPE	DESCRIPTION
GB01	300x510 RC BEAM
GB02	525x250x380 RC L-BEAM
GB03	300x425 RC BEAM
GB04	450x510 RC BEAM

COLUMN SCHEDULE	
TYPE	DESCRIPTION
BC01	345x345 BRICK PEIR
BC02	900x600 BRICK PEIR
BC03	1110x600 BRICK PEIR
BC04	900x900 BRICK PEIR
SC01	254x146x31 UB
SC02	CHS219.1X6.0
SC03	203x133x25 UB

KEY:

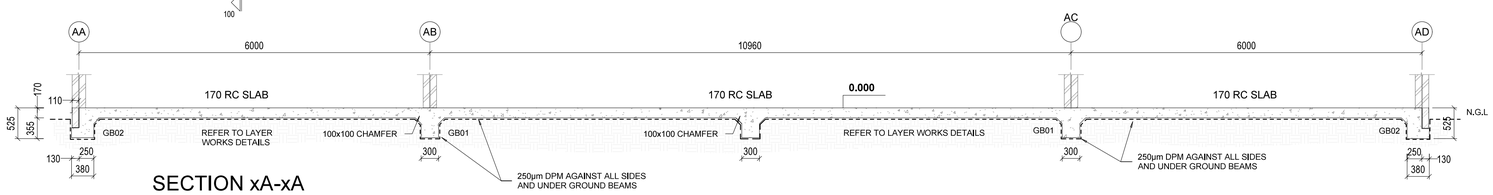
NEW WALL

ALL DIMENSIONS TO BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES TO BE REPORTED TO THE AUTHOR IMMEDIATELY. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND STRUCTURAL DRAWINGS.



SECTION GB1

Scale 1 : 15



SECTION xA-xA

Scale 1 : 50

GENERAL NOTE:

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    B. ROOF SLABS: TWO LAYERS OF 3-PLY MALTHOID HORIZONTAL BETWEEN ALL CONCRETE AND BRICKWORK.
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    - ARCHITECTS - STRUCTURAL ENGINEERS
    - ELECTRICAL ENGINEERS - MECHANICAL ENGINEERS
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FOR CONSTRUCTION

REVISIONS		
No.	Description	Date
00	Issued for Construction	25/01/2024

MOTAU ENGINEERS

MOTAU ENGINEERS

18 LOTTERING STREET, BENDOR PARK POLOKWANE.

DESIGNED
NAME: L.M. PHAAHLA Pr Tech, Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

DRAWN
NAME: D.G. MASHAVHA
SIGNATURE: DATE: JANUARY 2024

CHECKED
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INFORMATION OFFICE CHECKED
NAME: D.G. MASHAVHA
SIGNATURE: DATE: JANUARY 2024

DESIGN OFFICE APPROVAL
NAME: L.M. PHAAHLA Pr Tech, Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

SERVICES SETA

SERVICES SETA

Project Description:

GA-PASHA VILLAGE SKILL CENTRE

Drawing Description:

MAIN BUILDING - FOUNDATION LAYOUT, SURFACE-BED AND SECTIONS.

Project Number:	Drawing Number:
MOT2401	100
Date: JANUARY 2024	Scale: AS SHOWN
Sheet Size: A1	Revision: 00
SHEET 1 OF 1	
Discipline: STRUCTURAL	

PLOT DATE: 26/01/2024 5:48 pm

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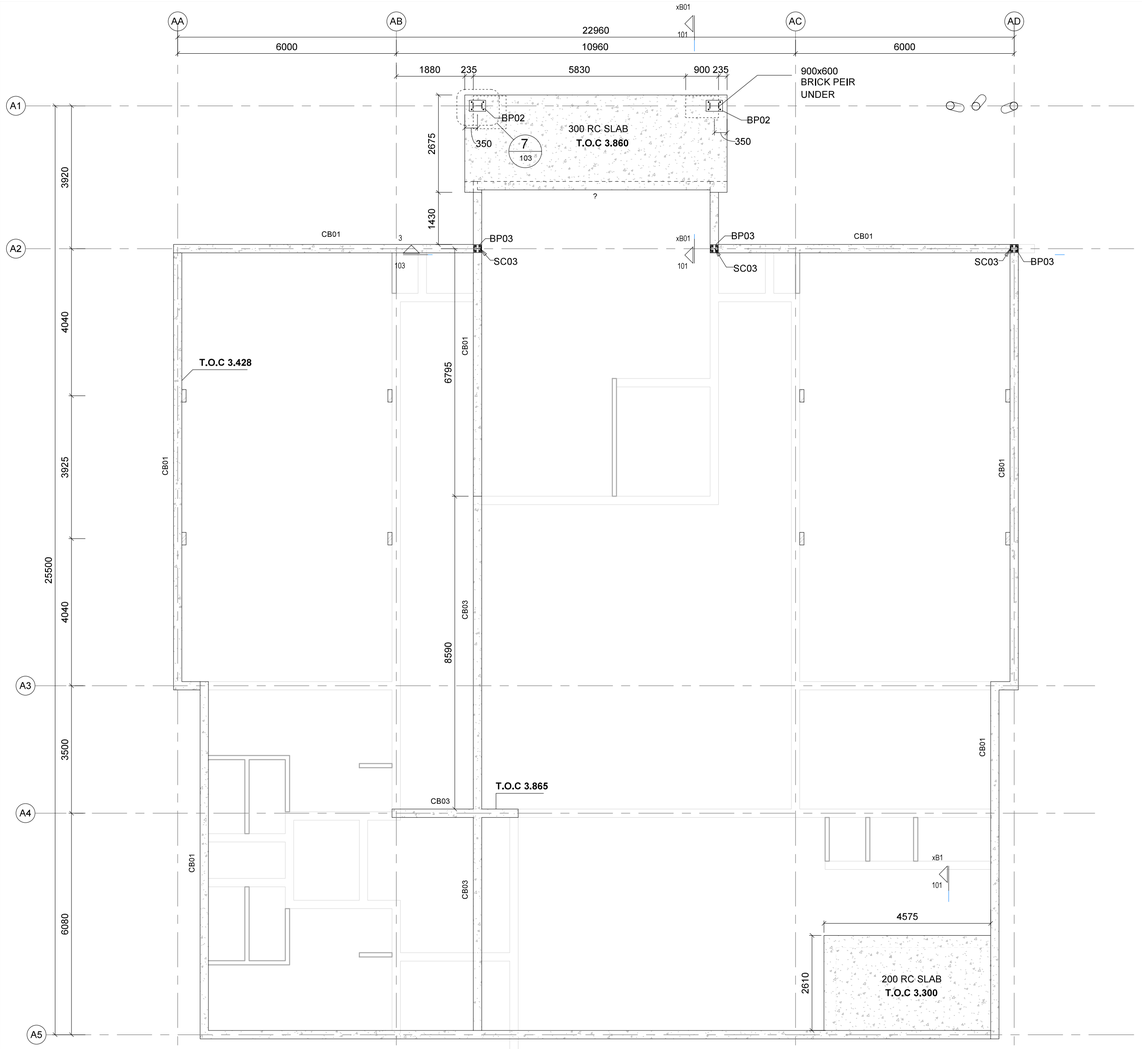
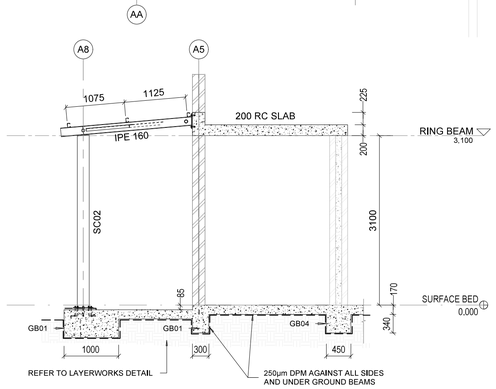


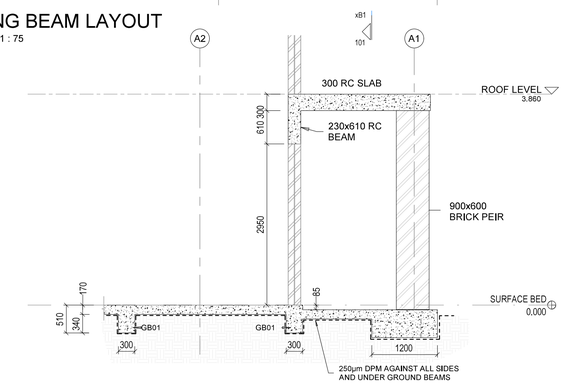
RING BEAM LAYOUT
Scale 1 : 75

COLUMN SCHEDULE	
TYPE	DESCRIPTION
BC01	345x345 BRICK PEIR
BC02	900x600 BRICK PEIR
BC03	1110x600 BRICK PEIR
BC04	900x900 BRICK PEIR
SC01	254x146x31 UB
SC02	CHS219.1X6.0
SC03	203x133x25 UB

BEAM SCHEDULE	
TYPE	DESCRIPTION
	<varies>
BR01	50x50x5 L
BR02	60.3x3.5 CHS
CB01	230x425 RC BEAM
CB02	230x230 RC BEAM
CB03	230x765 RC BEAM
FR01	IPE 160
PL01	75x50x20x2.5 CFLC
SB01	203x133x30 UB
SB02	254x146x31 UB
TB10	CHS114x4.5



SECTION xB1
Scale 1 : 50



SECTION xB01
Scale 1 : 50

4.0 STRUCTURAL STEEL NOTES

4.1 Structural steelwork shall comply with the requirements of SANS 2001:CSI, SANS 1200H:1990 and the relevant projectspecifications.

4.2 The engineer's drawings are intended as design drawings with the purpose of showing the design intent.

4.3 The contractor shall prepare complete fabrication drawings (Clause 4.2.4 of SANS : CS1) which shall be submitted to the engineer for approval before fabrication commences. The contractor allow 14 working days for checking and approval by the engineer, and shall also allow for any changes required by the engineer.

4.4 A certificate from the steel manufacture in which the grade of the structural steel is verified shall be handed to the engineer for approval.

4.5 All dimensions shall be checked on site before preparation of shop drawings commences.any discrepancies shall be handed to the engineer for approval.

4.6 Setting out points(S.O.P'S) at member centroids shall conform to those shown on general arrangement drawings . No accentricities , exept those shown on the engineer's drawings shall be allowed.

4.7 The proposed method and sequence of erection of the structure shall be submitted to the engineer for written approval .such submission is to take place at the time shop drawing submittal . the contravtor shall indicate the proposed method of propping to ensure stability of the structures during erection, such stability during erection remians the contractor responsibilitie's. where temporary bracing or propping is required, the contractor shall be responsible for the design, erection , manufacture and removal(where necessary) thereof proposal of such bracing or propping shall be submitted to the engineer at an early stage for his perusal.

4.8 Corrosion protection.
4.8.1 Cold Rolled Steelwork
a) Hot dip galvanise to SANS 121 (ISO 1461).
4.8.2 Hot Rolled Steelwork - External
a) Shop Applied
i) Abrasive blast to Sa 2½
ii) 1st Coat: Zinc rich epoxy primer 75 µm dry film thickness.
iii) 2nd Coat: High build epoxy MIO (micaceous iron oxide) 125 µm dry film thickness.
b) Site Applied
i) 3rd Coat: High solid aliphatic polyurethane finish 80 µm dry film thickness.
4.8.3 Hot Rolled Steelwork - Internal, Visible
a) Shop Applied
i) Abrasive blast to Sa 2½
ii) 1st Coat: High solid zinc phosphate primer 80 µm dry film thickness.
b) Site Applied
i) 2nd Coat: High build recoatable epoxy MIO (micaceous iron oxide) 120 µm dry film thickness.
4.8.4 Hot Rolled Steelwork - Internal, Hidden
a) Hot dip galvanise to SANS 121 (ISO 1461), minimum coating thickness of 70 µm and an average of 85 µm.
4.8.5 Where required for fireproofing, Intumecent paint is to be applied as specified by the Architect.
4.8.5 Preference should be given to the use of paint with a low or no volatile organic compound (VOC) content.

4.9 The contractor shall produce evidence, acceptable to the engineer, that welding. procedures to SANS 2001 - C52, clause 5.2.

4.10 Welds shall conform to SANS 10167:2004 ,SANS 44:2009 and AWS D1.1 specifications:
* where no welds size are shown, the minimum weld size shall be 6 mm, The contractor shall design and detail connections to transfer the full force capacity of the connected members through the connection.
* when using eletric arc welding ,all eletrodes shall be E7018, for any other welding process to be used, the contractor shall apply in writting, for the approval from the engineer for eletrodes to be used.
* all butt welds shall develop the full strength of the elements being joined.
* all splices shall develop the full strength of the elements being joned.
* all welding shall be done by suitably qualified and experienced welders using proper equipment in good condition. no site welding without engineers approval.
* the contractor shall design all welds and, where necessary , gussets of sufficient strentgh shall be provided to obtain the required weld length to ensure the full strength of the connection,at the connections of all bracing members, the bolt should be adequate to develop the full tensile capacity of the bracing member.all truss and girder members to be welded all round both sides.allow for gusset plates to ensure adequate welding length to develop full tensile capacity of members where necessary.

4.11 Testing of welds.
10% of all fillet welds and 100% of butt welds to be subjected to non-destructive testing

4.12 All shop splices are to be indicated on drawings

4.13 Where applicable,non-shrink grout shall be provided under base plates before any primary loads are applied to the structure.

4.14 The contractor shall, at the commencement of the project , acquaint himself with the avalability and delivery time of the products and steel profiles specified on the drawings so that such material can be ordered well in advance.

4.15 where slotted holes for bolts occur, the nut shall be hand tightended and lock-nut be provided unless noted otherwise.

4.16 All hot rolled steelwork shall be grade S355JR, all hollow tube steelwork shall be grade S355JR and all cold formed steelwork shall be grade S355JR.

4.17 All fixing bolts for structural steelwork shall be M20 grade 8.8 unless noted otherwise.

4.18 Paint specificatoin for the bolts: 3 days before the erection of the structural steelwork all bolts to be cleaned and decreased within 2 days of erection.all bolts are to be coated with 1 coat of sigmadur gloss or equilvalent.

4.19 See architectural drawings for final colour of structural steelwork (paint sample to be submitted for approval)

4.20 All welds shall be 6mm continuous fillet welds unless noted otherwise.

4.21 When steelwork connects to existing structures, the steelwork contractor shall check all site dimensions and levels before fabrication and erection.

4.22 Traceability of steel.
All steel to be marked with the manufacturer's test certificate number to ensure full traceability and to facilitate re-use of the steel members.

4.23 Marking steelwork.
Completed components shall be marked with a durable and distinguishing erection mark, section size, steel grade and manufacturer's test certificate number in such a way so as not to damage the component. Marking shall be in a discrete location. Hardstamping may be used unless noted otherwise.

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18 LOTTERING STREET, BENDOR PARK POLOKWANE.

DESIGNED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

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DESIGN OFFICE APPROVAL
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

SERVICES SETA
SERVICES SETA

Project Description:
GA-PASHA VILLAGE SKILL CENTRE

Drawing Description:
MAIN BUILDING - RING BEAM LAYOUT & SECTIONS.

Project Number:	Drawing Number:
MOT2401	101
Date: JANUARY 2024	Scale: AS SHOWN
Sheet Size: A1	Revision: 00
SHEET 1 OF 1	
Discipline: STRUCTURAL	

PLOT DATE: 26/01/2024 5:48 pm

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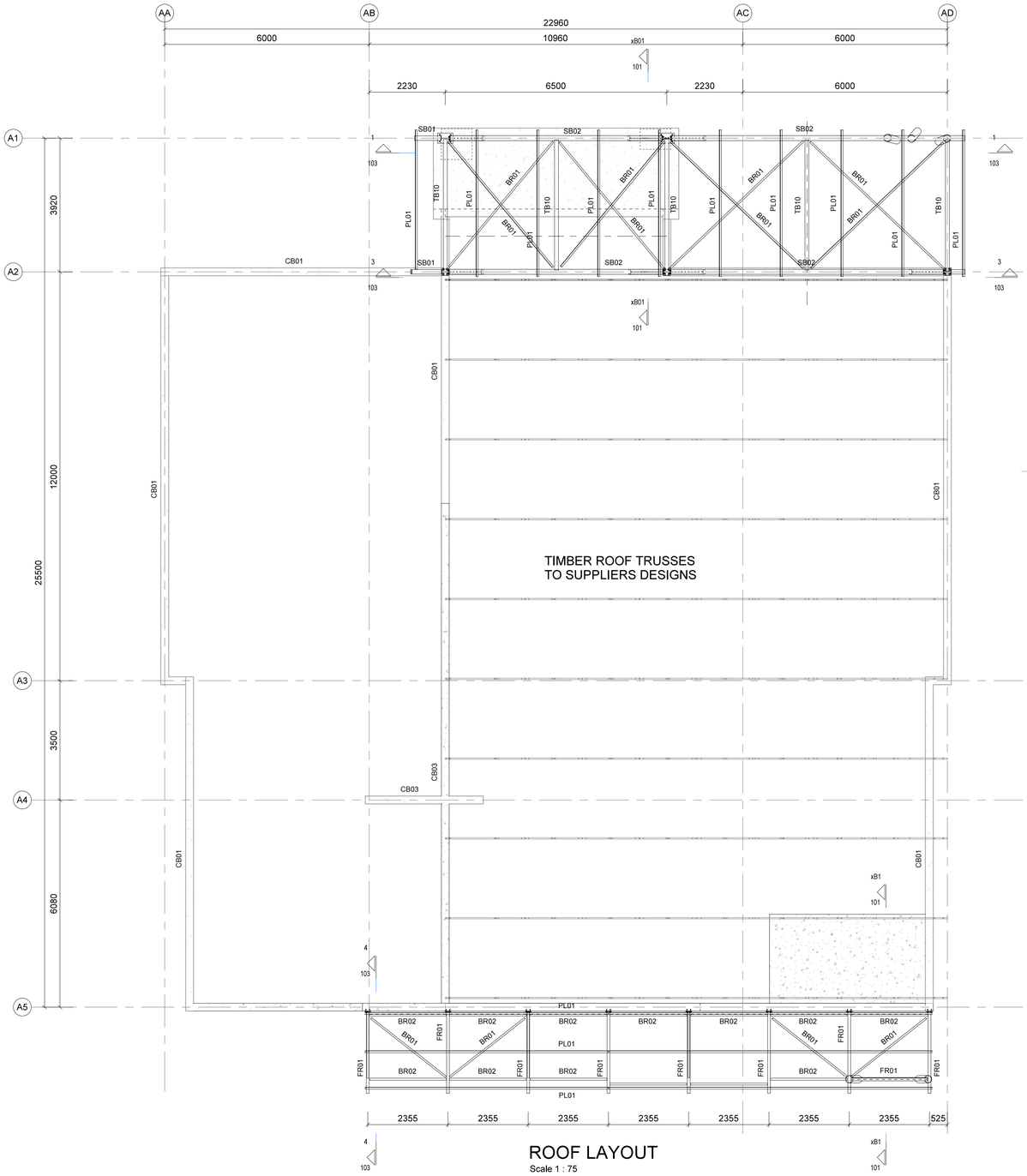


ROOF LAYOUT

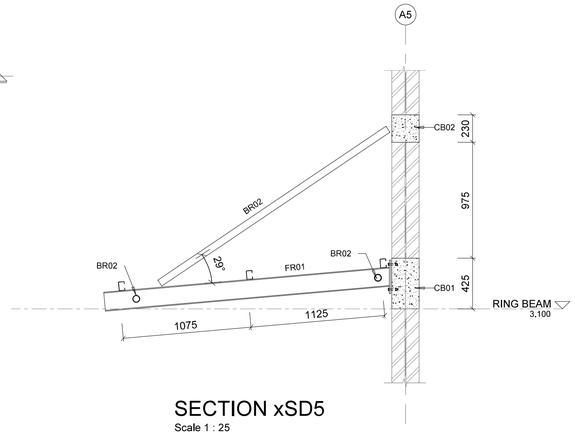
Scale 1 : 75

COLUMN SCHEDULE

TYPE	DESCRIPTION
BC01	345x345 BRICK PEIR
BC02	900x600 BRICK PEIR
BC03	1110x600 BRICK PEIR
BC04	900x900 BRICK PEIR
SC01	254x146x31 UB
SC02	CHS219,1X6,0
SC03	203x133x25 UB

BEAM SCHEDULE

TYPE	DESCRIPTION
	<varies>
BR01	50x50x5 L
BR02	60.3x3,5 CHS
CB01	230x425 RC BEAM
CB02	230x230 RC BEAM
CB03	230x765 RC BEAM
FR01	IPE 160
PL01	75x50x20x2,5 CFLC
SB01	203x133x30 UB
SB02	254x146x31 UB
TB10	CHS114x4,5



SECTION xSD5

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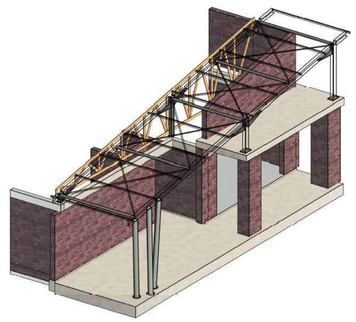
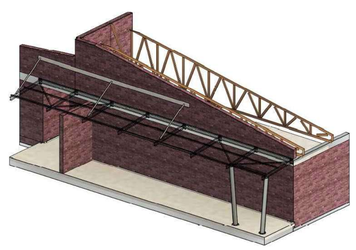


3D VIEW 01

Scale



3D VIEW 02

Scale

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4. ALL NON-LOAD BEARING BRICKWORK TO STOP 10mm UNDER SLAB.
5. ALL LOAD BEARING BRICKWORK SHOWN WITH HATCHING.
6. ALL CONCRETE TO BE IN ACCORDANCE WITH SABS 1200 G.
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11. STRIPPING OF SHUTTERING AND REMOVAL OF PROPS ACCORDING TO SABS 1200G 5,4 & 5,2.5
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    A. FLOOR SLABS:
       TWO LAYERS OF 250 MICRON PVC PLASTIC SHEETING HORZ. BETWEEN ALL CONCRETE AND BRICKWORK.
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       TWO LAYERS OF 3-PLY MALTHOID HORIZONTAL BETWEEN ALL CONCRETE AND BRICKWORK.
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FOR CONSTRUCTION

REVISIONS

No.	Description	Date
00	Issued for Construction	25/01/2024

MOTAU ENGINEERS

MOTAU ENGINEERS

18 LOTTERING STREET, BENDOR PARK POLOKWANE.

DESIGNED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

DRAWN
NAME: D.G. MASHAVHA
SIGNATURE: DATE: JANUARY 2024

CHECKED
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DESIGN OFFICE APPROVAL
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

SERVICES SETA

SERVICES SETA

Project Description:

GA-PASHA VILLAGE SKILL CENTRE

Drawing Description:

MAIN BUILDING - STEEL ROOF LAYOUT & SECTION.

Project Number:	Drawing Number:
MOT2401	102
Date: JANUARY 2024	Scale: AS SHOWN
Sheet Size: A1	Revision: 00
SHEET 1 OF 1	
Discipline: STRUCTURAL	

PLOT DATE: 26/01/2024 5:49 pm

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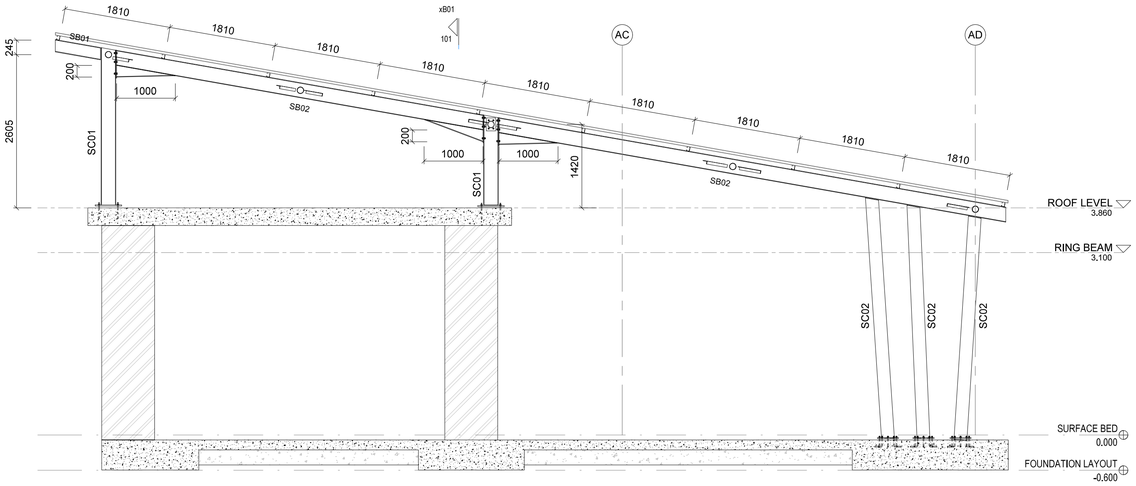

SECTION xSD1

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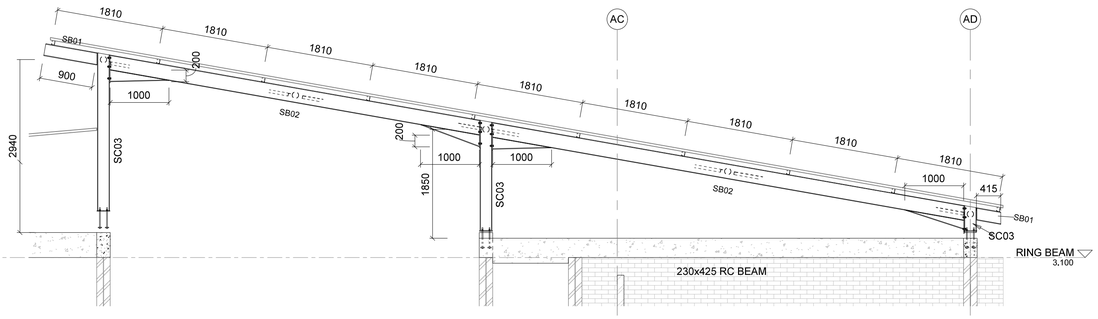

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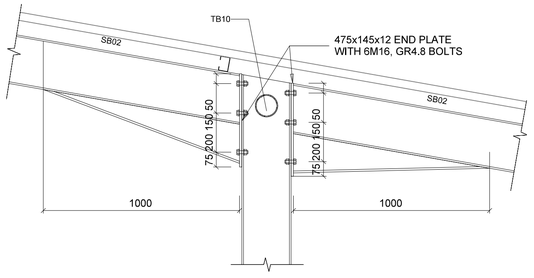

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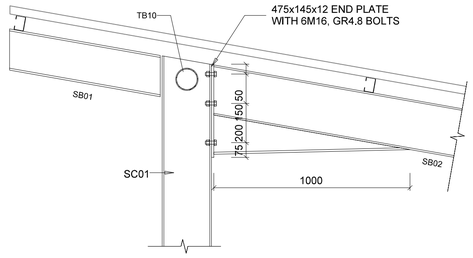

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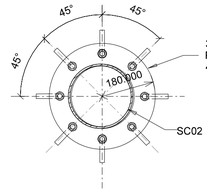

BASE PLATE BP01

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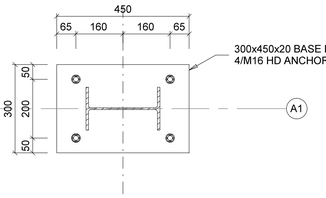

BASE PLATE BP02

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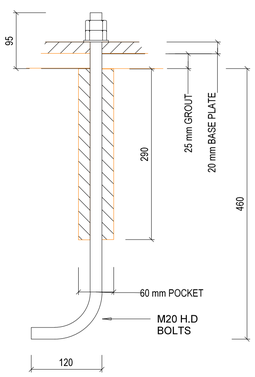
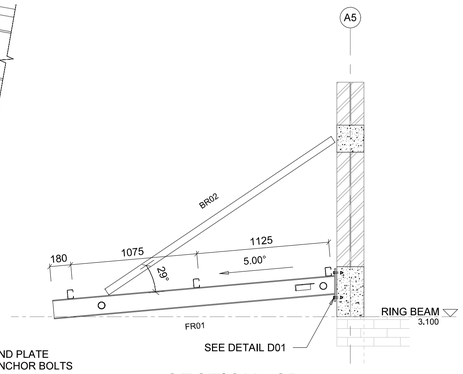


HD BOLT DETAIL

Scale 1 : 5

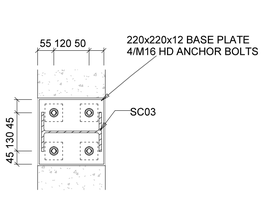


SECTION xSD4

Scale 1 : 25

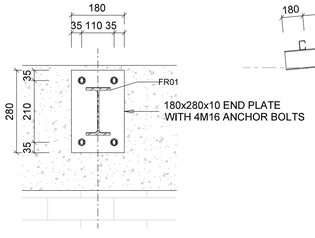
BEAM SCHEDULE.	
TYPE	DESCRIPTION
	<varies>
BR01	50x50x5 L
BR02	60.3x3.5 CHS
CB01	230x425 RC BEAM
CB02	230x230 RC BEAM
CB03	230x765 RC BEAM
FR01	IPE 160
PL01	75x50x20x2.5 CFLC
SB01	203x133x30 UB
SB02	254x146x31 UB
TB10	CHS114x4.5

COLUMN SCHEDULE	
TYPE	DESCRIPTION
BC01	345x345 BRICK PEIR
BC02	900x600 BRICK PEIR
BC03	1110x600 BRICK PEIR
BC04	900x900 BRICK PEIR
SC01	254x146x31 UB
SC02	CHS219,1X6,0
SC03	203x133x25 UB



BASE PLATE BP03

Scale 1 : 10



DETAIL ED01

Scale 1 : 10

4.0 STRUCTURAL STEEL NOTES

4.1 Structural steelwork shall comply with the requirements of SANS 2001:CSI, SANS 1200H:1990 and the relevant projectspecifications.

4.2 The engineer's drawings are intended as design drawings with the purpose of showing the design intent.

4.3 The contractor shall prepare complete fabrication drawings (Clause 4.2.4 of SANS : CS1) which shall be submitted to the engineer for approval before fabrication commences. The contractor allow 14 working days for checking and approval by the engineer, and shall also allow for any changes required by the engineer.

4.4 A certificate from the steel manufacture in which the grade of the structural steel is verified shall be handed to the engineer for approval.

4.5 All dimensions shall be checked on site before preparation of shop drawings commences.any discrepancies shall be handed to the engineer for approval.

4.6 Setting out points(S.O.P'S) at member centroids shall conform to those shown on general arrangement drawings . No accentricities , exept those shown on the engineer's drawings shall be allowed.

4.7 The proposed method and sequence of erection of the structure shall be submitted to the engineer for written approval .such submission is to take place at the time shop drawing submittal . the contravtor shall indicate the proposed method of propping to ensure stability of the structures during erection, such stability during erection remians the contractor responsibilitie's. where temporary bracing or propping is required, the contractor shall be responsible for the design, erection , manufacture and removal(where necessary) thereof proposal of such bracing or propping shall be submitted to the engineer at an early stage for his perusal.

4.8 Corrosion protection.
- 4.8.1 Cold Rolled Steelwork
  - a) Hot dip galvanise to SANS 121 (ISO 1461).
- 4.8.2 Hot Rolled Steelwork - External
  - a) Shop Applied
    - i) Abrasive blast to Sa 2½
    - ii) 1st Coat: Zinc rich epoxy primer 75 µm dry film thickness.
    - iii) 2nd Coat: High build epoxy MIO (micaceous iron oxide) 125 µm dry film thickness.
  - b) Site Applied
    - i) 3rd Coat: High solid aliphatic polyurethane finish 80 µm dry film thickness.
- 4.8.3 Hot Rolled Steelwork - Internal, Visible
  - a) Shop Applied
    - i) Abrasive blast to Sa 2½
    - ii) 1st Coat: High solid zinc phosphate primer 80 µm dry film thickness.
  - b) Site Applied
    - i) 2nd Coat: High build recoatable epoxy MIO (micaceous iron oxide) 120 µm dry film thickness.
- 4.8.4 Hot Rolled Steelwork - Internal, Hidden
  - a) Hot dip galvanise to SANS 121 (ISO 1461), minimum coating thickness of 70 µm and an average of 85 µm.
- 4.8.5 Where required for fireproofing, Intumecent paint is to be applied as specified by the Architect.
- 4.8.5 Preference should be given to the use of paint with a low or no volatile organic compound (VOC) content.

4.9 The contractor shall produce evidence, acceptable to the engineer, that welding, procedures to SANS 2001 - C52, clause 5.2.

4.10 Welds shall conform to SANS 10167:2004 ,SANS 44:2009 and AWS D1.1 specifications:
* where no welds size are shown, the minimum weld size shall be 6 mm, The contractor shall design and detail connections to transfer the full force capacity of the connected members through the connection.
* when using eletric arc welding ,all eletrodes shall be E7018. for any other welding process to be used, the contractor shall apply in writting, for the approval from the engineer for eletrodes to be used.
* all butt welds shall develop the full strength of the elements being joined.
* all splices shall develop the full strength of the elements being joned.
* all welding shall be done by suitably qualified and experienced welders using proper equipment in good condition. no site welding without engineers approval.
* the contractor shall design all welds and, where necessary , gussets of sufficient strentgh shall be provided to obtain the required weld length to ensure the full strength of the connection.at the connections of all bracing members, the bolt should be adequate to develop the full tensile capacity of the bracing member.all truss and girder members to be welded all round both sides.allow for gusset plates to ensure adequate welding length to develop full tensile capacity of members where necessary.

4.11 Testing of welds.
10% of all fillet welds and 100% of butt welds to be subjected to non-destructive testing

4.12 All shop splices are to be indicated on drawings

4.13 Where applicable,non-shrink grout shall be provided under base plates before any primary loads are applied to the structure.

4.14 The contractor shall, at the commencement of the project , acquaint himself with the avalaibility and delivery time of the products and steel profiles specified on the drawings so that such material can be ordered well in advance.

4.15 where slotted holes for bolts occur, the nut shall be hand tightended and lock-nut be provided unless noted otherwise.

4.16 All hot rolled steelwork shall be grade S355JR, all hollow tube steelwork shall be grade S355JR and all cold formed steelwork shall be grade S355JR.

4.17 All fixing bolts for structural steelwork shall be M20 grade 8.8 unless noted otherwise.

4.18 Paint specificatoin for the bolts: 3 days before the erection of the structural steelwork all bolts to be cleaned and decreased within 2 days of erection.all bolts are to be coated with 1 coat of sigmadur gloss or equilvalent.

4.19 See architectural drawings for final colour of structural steelwork (paint sample to be submitted for approval)

4.20 All welds shall be 6mm continuous fillet welds unless noted otherwise.

4.21 When steelwork connects to existing structures, the steelwork contractor shall check all site dimensions and levels before fabrication and erection.

4.22 Traceability of steel.
All steel to be marked with the manufacturer's test certificate number to ensure full traceability and to facilitate re-use of the steel members.

4.23 Marking steelwork.
Completed components shall be marked with a durable and distinguishing erection mark, section size, steel grade and manufacturer's test certificate number in such a way so as not to damage the component. Marking shall be in a discrete location. Hardstamping may be used unless noted otherwise.

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POLOKWANE.

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SERVICES SETA

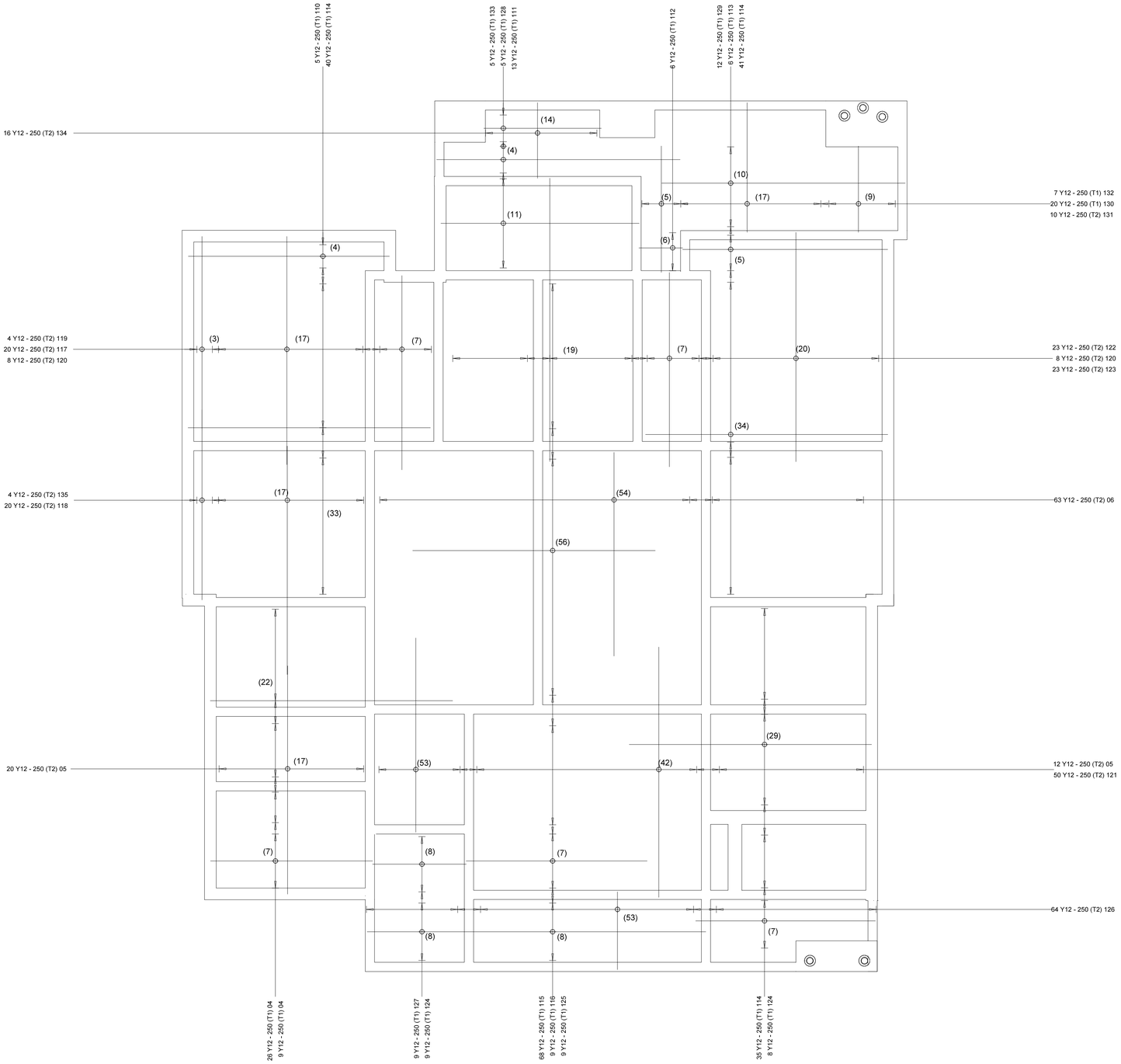
Project Description:
GA-PASHA VILLAGE SKILL CENTRE

Drawing Description:
MAIN BUILDING - STEEL ROOF LAYOUT & SECTION.

Project Number:	Drawing Number:
MOT2401	103
Date: JANUARY 2024	Scale: AS SHOWN
Sheet Size: A1	Revision: 00

SHEET 1 OF 1

Discipline: **STRUCTURAL**



SURFACE BED REINFORCEMENT LAYOUT

Scale 1 : 75

1.0 EXCAVATIONS AND FOUNDATIONS

1.1 ALL EXCAVATIONS FOR FOUNDATIONS (WHERE NOT PILED) TO BE CHECKED AND APPROVED BY THE ENGINEER BEFORE ANY CONCRETE IS CAST.

1.2 ALL FOUNDATIONS TO BE BUILT ON FIRM IN-SITU MATERIAL (NOT ON FILL).

1.3 THE TOP LEVEL OF ALL FOUNDATIONS TO BE AT LEAST 300MM BELOW FINAL OUTSIDE GROUND LEVEL OR FINISHED FLOOR LEVEL, WHICHEVER IS THE LOWER.

1.4 ASSUMED SAFE BEARING CAPACITY OF SOIL UNDER FOUNDATIONS – 250KPA. (REFER TO GEOTECHNICAL REPORT)

1.5 ALL RISING FOUNDATION BRICKWORK TO HAVE CONTINUOUS BRICKFORCE EVERY 2ND COURSE AND CAVITY TO BE FILLED TO UNDERSIDE OF STEPPED DPC WITH 13MM AGGREGATE, 15MPA CONCRETE TAKING CARE NOT TO ALLOW ANY HONEYCOMBING

1.6 ALL FINAL FOUNDATION SIZES, DEPTH AND DETAILS ARE SUBJECT TO CONFIRMATION ON SITE BY ENGINEER.

1.7 THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE SAFETY OF ALL DEEP EXCAVATIONS AND FOR ERECTING READY FENCE AND OR HOARDING AROUND THE SITE TO PREVENT ENTRY AFTER WORKING HOURS AND THE GENERAL SAFETY OF THE SITE AT ALL TIMES.

1.8 ALL FOUNDATION EXCAVATIONS TO BE BELOW ANY SIGNS OF ORGANIC MATERIAL OR ROOTS ETC.

BEAM SCHEDULE

TYPE	DESCRIPTION
BR01	50x50x5 L
BR02	60,3x3,5 CHS
CB01	230x425 RC BEAM
CB02	230x230 RC BEAM
CB03	230x765 RC BEAM
FR01	IPE 160
GB01	300x510 RC BEAM
GB02	525x250x380 RC L-BEAM
GB03	300x425 RC BEAM
GB04	450x510 RC BEAM
PL01	75x50x20x2,5 CFLC
SB01	203x133x30 UB
SB02	254x146x31 UB
TB10	CHS114x4,5

LEGEND

TOC	TOP OF CONCRETE	CJ	CONSTRUCTION JOINT
TOW	TOP OF WALL	SJ	SAW CUT JOINT
D/S	DOWNSTAND CONCRETE	MJ	MOVEMENT JOINT
U/S	UPSTAND CONCRETE	IJ	ISOLATION JOINT
RWP	RAINWATER PIPE	FB	FULL BORE OUTLET

KEY:

NEW WALL

EXISTING WALL TO REMAIN

EXISTING WALL TO BE DEMOLISHED

ALL DIMENSIONS TO BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES TO BE REPORTED TO THE AUTHOR IMMEDIATELY. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND STRUCTURAL DRAWINGS.

GENERAL NOTE:

1. ALL DIMENSIONS & LEVELS TO BE CHECKED ON SITE BEFORE CONSTRUCTION COMMENCES.
2. ALL DIMENSIONS & LEVELS TO BE CHECKED WITH ARCHITECTS DRAWINGS BEFORE CONSTRUCTION COMMENCES.
3. HORIZONTAL V-JOINT BETWEEN ALL BRICKWORK AND CONCRETE.
4. ALL NON-LOAD BEARING BRICKWORK TO STOP 10mm UNDER SLAB.
5. ALL LOAD BEARING BRICKWORK SHOWN WITH HATCHING.
6. ALL CONCRETE TO BE IN ACCORDANCE WITH SABS 1200 G.
7. ALL CONCRETE TO BE OF MIN GRADE 25MPa/20 FOR BEAMS AND SLABS
8. THE ENGINEER IS NOT RESPONSIBLE FOR THE ADEQUACY OF THE FOUNDATIONS, BRICKWORK OR STRUCTURAL ELEMENTS SUCH AS BRICK LINTOLS OVER OPENINGS, BEAMS, COLUMNS ETC.
9. ALL WORK TO BE DONE ACCORDING TO SABS 1200 AND THE RELEVANT BUILDING/ CONSTRUCTION CODES FOR NATIONAL AND LOCAL AUTHORITIES AS MAY BE APPLICABLE.
10. CURING OF ALL CONCRETE ELEMENTS IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND SHALL BE DONE ACCORDING TO SABS 1200 S.5.8
11. STRIPPING OF SHUTTERING AND REMOVAL OF PROPS ACCORDING TO SABS 1200G 5,4 & 5.2.5
12. 10mm SOFTBOARD TO BE PLACED VERTICALLY BETWEEN CONCRETE AND BRICKWORK FOR SLABS SUPPORTED ON HALF-WALL AT OUTSIDE WALLS.
13. HORIZONTAL SLIDING JOINTS:
    A. FLOOR SLABS:
       TWO LAYERS OF 250 MICRON PVC PLASTIC SHEETING HORZ. BETWEEN ALL CONCRETE AND BRICKWORK.
    B. ROOF SLABS:
       TWO LAYERS OF 3-PLY MALTHOID HORIZONTAL BETWEEN ALL CONCRETE AND BRICKWORK.
14. PREPARATION OF SUPPORTING SURFACE FOR SLAB ON LOAD BEARING BRICKWORK: BRICKWORK TO BE EVENLY LAYED AND TRUE HORIZONTAL WITH ALL JOINTS PROPERLY FILLED AND FLUSH WITH TOP SURFACE OF BRICKWORK. SURFACE TO BE PROPERLY CLEANED BEFORE PLACING OF SLIDING MATERIAL.
15. ALL LOAD BEARING BRICK WALLS TO RELEVENT BUILDING REGULATIONS AND CODES
16. ALL FOUNDATIONS TO BE ON SUITABLE SOIL CONDITIONS. (DISCUSS WITH ENGINEER)
17. MINIMUM NOMINAL BRICK STRENGH: 10,5 MPa.
18. MINIMUM MORTAR CLASS: CLASS II.
19. SPECIALISTS ELEMENTS TO BE VERIFIED BY SPECIALIST CONSULTANT OR SUPPLIER.
20. ALL STRUCTURAL COMPONENTS TO BE VERIFIED AND INSPECTED BY STRUCTURAL ENGINEER.
21. ALL ARCHITECTURAL MATERIALS AND SAMPLES TO BE APPROVED BY THE ARCHITECT.
22. ALL BUILDING WORK TO BE IN ACCORDANCE WITH NBR AND SABS OR THE RELEVANT LOCAL AUTHORITY
23. THE CONTRACTOR TO KEEP A FULL SET OF DRAWINGS ON SITE.
24. DIMENSIONS AND LEVELS MUST NOT BE SCALED OR ASSUMED. AFTER NOTIFICATION, DISCREPANCIES OR MISSING DIMENSIONS AND LEVELS WILL BE CORRECTED IN WRITTING BY THE ENGINEER.
25. ALL WORK SHALL BE EXECUTED IN STRICT ACCORDANCE WITH THE APPLICABLE PARTS OF THE LATEST EDITION OF SANS 10400, SANS 2001, SANS 1200 ,THE OSH ACT AND THE PROJECT SPECIFICATION IN THE CONTRACT DOCUMENTS.
26. THE CONTRACTOR SHALL CHECK ALL PROJECT DIMENSIONS ON SITE BEFOREHAND,ANY DICREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER.
27. ALL SANS SPECIFICATIONS MENTIONED IN THE NOTES,ON THE DRAWINGS AND IN PROJECT SPECIFICATIONS SHALL BE AVALAIBLE ON SITE AT ALL TIMES IN HARD COPY FORMAT.
28. ALL INSTRUCTIONS FROM THE ENGINEER TO BE WRITTEN IN THE SITE INSTRUCTION BOOK,THAT SHOULD BE PROVIDED BY THE CONTRACTOR.
29. PRODUCTS DIFFERENT TO THOSE SPECIFIED MAY BE USED WITH THE ENGINEER'S PRIOR APPROVAL.
30. UNLESS OTHERWISE INDICATED ON DRAWINGS, ALL WATERPROOFING,DRAINAGE FALLS AND FINISHES ARE ACCORDING TO THE ARCHITECT DETAILS AND SPECIFICATIONS.
31. THE CONTRACTOR SHALL DISCLOSE HIS PROPOSED BUILDING SEQUENCE IN BOARD TERMS BEFORE SITE ESTABLISHMENT.
32. ANY DEVIATIONS FROM THE CONSTRUCTION DRAWINGS PLANNED BY THE CONTRACTOR SHALL BE PROPOSED TO THE ENGINEER IN FULL DETAIL FOR A DECISION. THE ENGINEER IS UNDER NO OBLIGATION TO APPROVE SUCH DEVIATIONS,BUT IF APPROVED,THE APPROVAL SHALL BE IN WRITTING.
33. REFER TO ALL RELEVANT DRAWINGS BY:-
    - ARCHITECTS - STRUCTURAL ENGINEERS
    - ELECTRICAL ENGINEERS - MECHANICAL ENGINEERS
34. ALL COLUMNS, WALLS AND BEAMS TO BE PLACED CENTRALLY ON GRID/ CENTRE LINES UNLESS DIMENSIONED OTHERWISE.
35. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT HE UNDERSTANDS AND COMPLIES WITH ALL RELEVANT ENGINEERING DRAWINGS AND SPECIFICATIONS AND IS ADEQUATELY EXPERIENCED TO UNDERTAKE ALL ASPECTS OF THE WORK SAFELY.
36. THE CONTRACTOR IS TO COMPLY AT ALL TIMES WITH ALL RELEVANT MUNICIPAL REGULATIONS AND BYLAWS IN THE AREA OF THE SITE AND IS TO ENSURE THAT HE HAS A SET OF APPROVED BUILDING PLANS ON SITE AT ALL TIMES
37. ALL PRODUCTS SPECIFIED FOR USE ARE TO BE USED STRICTLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS AT ALL TIMES.
38. SHOULD THE ENGINEER BE REQUIRED ON SITE,48 HRS NOTICE SHOULD BE REQUESTED IN WRITTING,FAILURE TO DO SO,THE ENGINEER WILL NOT BE HELD RESPONSIBLE FOR ANY DELAYS OR COST IMPLICATIONS.
39. IN CASE OF THE FIELD ENGINEERING QUIRIES TO THE ENGINEER, IN WRITTING. THE CONTRACTOR SHALL HAVE A PROPOSED SOLUTION AND SUFFICIENT DIGITAL PHOTOGRAPHS TO SHOW THE PROBLEM.

FOR CONSTRUCTION

REVISIONS

No.	Description	Date
00	Issued for Construction	25/01/2024

MOTAU ENGINEERS

MOTAU ENGINEERS

18 LOTTERING STREET, BENDOR PARK
POLOKWANE.

DESIGNED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

DRAWN
NAME: D.G. MASHAVHA
SIGNATURE: DATE: JANUARY 2024

CHECKED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

INFORMATION OFFICE CHECKED
NAME: D.G. MASHAVHA
SIGNATURE: DATE: JANUARY 2024

DESIGN OFFICE APPROVAL
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

SERVICES SETA

SERVICES SETA

Project Description:

GA-PASHA VILLAGE SKILL CENTRE

Drawing Description:

MAIN BUILDING - SURFACE-BED REINFORCEMENT LAYOUT

Project Number:	Drawing Number:
MOT2401	104
Date: JANUARY 2024	Scale: AS SHOWN
Sheet Size: A1	Revision: 00
SHEET 1 OF 1	
Discipline: STRUCTURAL	

PLOT DATE: 26/01/2024 5:51 pm

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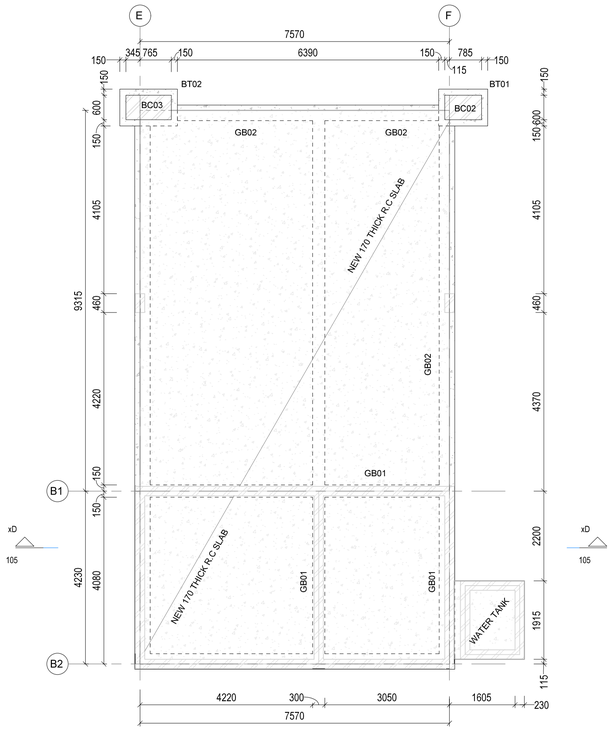
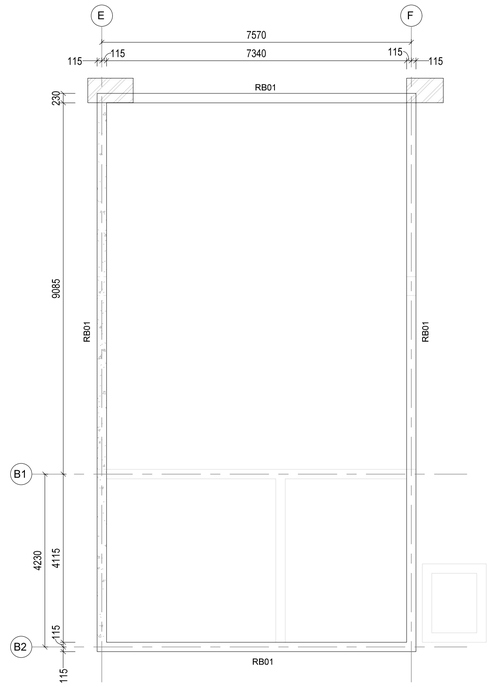


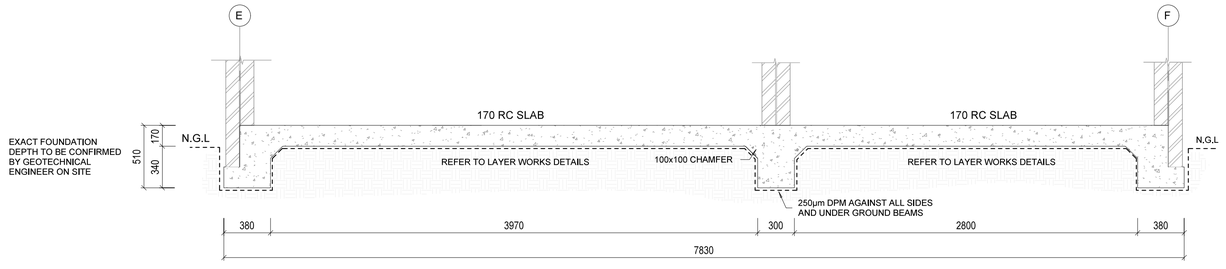
FOUNDATION LAYOUT - SIMULATION ROOM

Scale 1 : 75



SIMULATION AREA - RING BEAM LAYOUT

Scale 1 : 75



SECTION xD-xD

Scale 1 : 25

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FOR CONSTRUCTION

REVISIONS		
No.	Description	Date
00	Issued for Construction	25/01/2024

MOTAU ENGINEERS

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18 LOTTERING STREET, BENDOR PARK POLOKWANE.

DESIGNED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
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DESIGN OFFICE APPROVAL
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

SERVICES SETA

SERVICES SETA

Project Description:

GA-PASHA VILLAGE SKILL CENTRE

Drawing Description:

MAIN BUILDING - FOUNDATION, SURFACE-BED LAYOUT & SECTION (SIMULATION ROOM)

Project Number: MOT2401	Drawing Number: 105
Date: JANUARY 2024	Scale: AS SHOWN
Sheet Size: A1	Revision: 00
SHEET 1 OF 1	
Discipline: STRUCTURAL	

PLOT DATE: 26/01/2024 5:52 pm

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GROUND BEAMS REBAR SCHEDULE

WEWWWWWT NAME	NUM	MARK	TYPE	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)		E/R (mm)
GROUND BEAM 01	4	01	Y12	12	5500	20	5495	0	0	0		0
GROUND BEAM 01	1	02	Y12	8	7000	20	6995	0	0	0		0
GROUND BEAM 01	1	03	Y12	4	8420	20	8420	0	0	0		0
GROUND BEAM 01	2	04	Y12	4	5670	20	5670	0	0	0		0
GROUND BEAM 01	3	05	Y12	12	8010	20	8010	0	0	0		0
GROUND BEAM 01	2	06	Y12	4	8790	20	8790	0	0	0		0
GROUND BEAM 01	4	07	Y12	8	5800	20	5795	0	0	0		0
GROUND BEAM 01	1	08	Y12	4	6630	20	6625	0	0	0		0
GROUND BEAM 01	1	09	Y12	4	6250	20	6245	0	0	0		0
GROUND BEAM 01	2	10	Y12	4	5420	20	5415	0	0	0		0
GROUND BEAM 01	4	11	Y12	24	7110	20	7105	0	0	0		0
GROUND BEAM 01	1	12	Y12	4	3270	20	3270	0	0	0		0
GROUND BEAM 01	1	13	Y12	4	1510	20	1505	0	0	0		0
GROUND BEAM 01	2	14	Y12	4	1390	20	1390	0	0	0		0
GROUND BEAM 01	1	15	Y12	4	3460	20	3455	0	0	0		0
GROUND BEAM 01	1	16	Y12	4	6670	20	6670	0	0	0		0
GROUND BEAM 01	3	17	Y16	65	1310	60	410	200	0	0		0
GROUND BEAM 01	16	18	Y16	449	1310	60	200	410	0	0		0
GROUND BEAM 01	1	19	Y16	35	1350	60	430	200	0	0		0
GROUND BEAM 01	1	20	Y12	4	1700	20	1700	0	0	0		0
GROUND BEAM 01	1	21	Y12	4	7310	20	7315	0	0	0		0
GROUND BEAM 01	2	22	Y12	4	4450	20	4455	0	0	0		0
GROUND BEAM 01	1	23	Y16	81	1300	60	405	200	0	0		0
GROUND BEAM 01	1	24	Y16	22	1460	60	435	250	0	0		0
GROUND BEAM 01	1	25	Y16	58	1280	60	200	395	0	0		0
GROUND BEAM 02	6	30	Y16	173	1450	75	300	150	410	280		130
GROUND BEAM 02	4	31	Y12	20	6380	20	6375	0	0	0		0
GROUND BEAM 02	2	32	Y12	6	5460	20	5460	0	0	0		0
GROUND BEAM 02	2	33	Y12	6	9940	20	9935	0	0	0		0
GROUND BEAM 02	2	34	Y12	6	860	20	860	0	0	0		0
GROUND BEAM 02	2	35	Y16	32	1460	75	300	150	410	280		130
GROUND BEAM 02	1	36	Y12	4	3380	20	3375	0	0	0		0
GROUND BEAM 02	2	37	Y12	6	1050	20	1050	0	0	0		0
GROUND BEAM 02	2	38	Y12	6	6920	20	6920	0	0	0		0
GROUND BEAM 02	1	39	Y12	6	2560	20	2555	0	0	0		0
GROUND BEAM 02	2	40	Y12	6	1650	20	1645	0	0	0		0
GROUND BEAM 02	1	41	Y16	47	1460	75	310	150	410	280		130
GROUND BEAM 02	2	42	Y12	4	6410	20	6410	0	0	0		0
GROUND BEAM 03	6	50	Y16	129	1140	60	200	325	0	0		0
GROUND BEAM 03	2	51	Y12	8	7900	20	7900	0	0	0		0
GROUND BEAM 03	1	52	Y12	4	8630	20	8625	0	0	0		0
GROUND BEAM 03	2	53	Y12	8	2260	20	2260	0	0	0		0
GROUND BEAM 03	1	54	Y12	2	3380	20	3375	0	0	0		0
GROUND BEAM 03	1	55	Y12	2	2430	20	2425	0	0	0		0
GROUND BEAM 03	1	56	Y12	2	2310	20	2305	0	0	0		0
GROUND BEAM 03	2	57	Y12	4	6290	20	6285	0	0	0		0
GROUND BEAM 03	2	58	Y12	4	1610	20	1610	0	0	0		0
GROUND BEAM 04	2	60	Y16	31	1640	60	350	425	0	0		0
GROUND BEAM 04	1	61	Y12	4	5670	20	5670	0	0	0		0
GROUND BEAM 04	1	62	Y12	6	2520	20	2515	0	0	0		0
GROUND BEAM 04	2	63	Y10	32	1280	37	1160	145	0	0		0

GROUND BEAM REBAR WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
GROUND BEAM 04	Y10	25 kg
<varies>	Y12	1117 kg
<varies>	Y16	2362 kg
TOTAL		3504 kg

BASE REBAR SCHEDULE

Member	Bar Mark	Type & Size	No. of mbrs.	No. of Bars in Each	Total No.	Length of each bar † mm	Shape	A* mm	B* mm	C* mm	D* mm	E/R* mm
BASE TYPE 01												
	70	Y16	1	7	7	4000	60	410	1550	0	0	0
	71	Y12	1	14	14	1300	20	1300	0	0	0	0
BASE TYPE 02												
	80	Y16	1	6	6	4300	60	410	1700	0	0	0
	81	Y12	1	14	14	1150	20	1150	0	0	0	0
BASE TYPE 03												
	90	Y12	1	20	20	1450	20	1450	0	0	0	0
	91	Y16	1	7	7	6000	60	410	2550	0	0	0
BASE TYPE 04												
	100	Y16	1	12	12	2800	60	430	920	0	0	0
	101	Y12	1	10	10	2550	20	2550	0	0	0	0

BASE REBAR WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
<varies>	Y12	78.84 kg
<varies>	Y16	204.36 kg
TOTAL		283.20 kg

SLAB REBAR SCHEDULE

MEMBER NAME	NUM	MARK	TYPE	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)		E/R (mm)
RC SLAB REBAR	1	110	Y12	5	6730	38	110	6570	110	0		0
RC SLAB REBAR	1	111	Y12	13	6640	38	110	6480	110	0		0
RC SLAB REBAR	1	112	Y12	6	1620	38	120	1440	120	0		0
RC SLAB REBAR	1	113	Y12	6	6860	38	110	6700	110	0		0
RC SLAB REBAR	1	114	Y12	116	7990	37	110	7910	0	0		0
RC SLAB REBAR	1	115	Y12	68	7910	20	7910	0	0	0		0
RC SLAB REBAR	1	116	Y12	9	5980	37	100	5910	0	0		0
RC SLAB REBAR	1	117	Y12	20	7530	37	110	7450	0	0		0
RC SLAB REBAR	1	118	Y12	20	7450	20	7450	0	0	0		0
RC SLAB REBAR	1	119	Y12	4	6350	37	110	6270	0	0		0
RC SLAB REBAR	1	120	Y12	16	6420	37	6340	110	0	0		0
RC SLAB REBAR	1	121	Y12	50	8250	37	8170	110	0	0		0
RC SLAB REBAR	1	122	Y12	23	9320	37	9240	110	0	0		0
RC SLAB REBAR	1	123	Y12	23	7560	37	7480	110	0	0		0
RC SLAB REBAR	1	124	Y12	17	5950	37	5870	110	0	0		0
RC SLAB REBAR	1	125	Y12	9	5480	20	5480	0	0	0		0
RC SLAB REBAR	1	126	Y12	64	2710	38	110	2550	110	0		0
RC SLAB REBAR	1	127	Y12	9	3220	38	100	3070	110	0		0
RC SLAB REBAR	1	128	Y12	5	8040	37	7945	120	0	0		0
RC SLAB REBAR	1	129	Y12	12	8040	37	7950	120	0	0		0
RC SLAB REBAR	1	130	Y12	20	4420	38	120	4240	120	0		0
RC SLAB REBAR	1	131	Y12	10	2990	38	110	2825	110	0		0
RC SLAB REBAR	1	132	Y12	7	4290	38	110	4135	110	0		0
RC SLAB REBAR	1	133	Y12	5	4010	38	110	3845	110	0		0
RC SLAB REBAR	1	134	Y12	16	2640	38	110	2475	110	0		0
RC SLAB REBAR	1	135	Y12	4	6290	37	110	6205	0	0		0

SLAB REBAR WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
RC SLAB REBAR	Y12	3234 kg
TOTAL		3234 kg

1.0 EXCAVATIONS AND FOUNDATIONS

1.1 ALL EXCAVATIONS FOR FOUNDATIONS (WHERE NOT PILED) TO BE CHECKED AND APPROVED BY THE ENGINEER BEFORE ANY CONCRETE IS CAST.

1.2 ALL FOUNDATIONS TO BE BUILT ON FIRM IN-SITU MATERIAL (NOT ON FILL).

1.3 THE TOP LEVEL OF ALL FOUNDATIONS TO BE AT LEAST 300MM BELOW FINAL OUTSIDE GROUND LEVEL OR FINISHED FLOOR LEVEL, WHICHEVER IS THE LOWER.

1.4 ASSUMED SAFE BEARING CAPACITY OF SOIL UNDER FOUNDATIONS – 250KPA. (REFER TO GEOTECHNICAL REPORT)

1.5 ALL RISING FOUNDATION BRICKWORK TO HAVE CONTINUOUS BRICKFORCE EVERY 2ND COURSE AND CAVITY TO BE FILLED TO UNDERSIDE OF STEPPED DPC WITH 13MM AGGREGATE, 15MPA CONCRETE TAKING CARE NOT TO ALLOW ANY HONEYCOMBING

1.6 ALL FINAL FOUNDATION SIZES, DEPTH AND DETAILS ARE SUBJECT TO CONFIRMATION ON SITE BY ENGINEER.

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1.8 ALL FOUNDATION EXCAVATIONS TO BE BELOW ANY SIGNS OF ORGANIC MATERIAL OR ROOTS ETC.

BEAM SCHEDULE

TYPE	DESCRIPTION
BR01	50x50x5 L
BR02	60,3x3,5 CHS
CB02	230x230 RC BEAM
CB03	230x765 RC BEAM
FR01	IPE 160
GB01	300x510 RC BEAM
GB02	525x250x380 RC L-BEAM
GB03	300x425 RC BEAM
GB04	450x510 RC BEAM
PL01	75x50x20x2,5 CFLC
RB01	230x425 RC BEAM
SB01	203x133x30 UB
SB02	254x146x31 UB
TB10	CHS114x4,5

LEGEND

TOC	TOP OF CONCRETE	CJ	CONSTRUCTION JOINT
TOW	TOP OF WALL	SJ	SAW CUT JOINT
D/S	DOWNSTAND CONCRETE	MJ	MOVEMENT JOINT
U/S	UPSTAND CONCRETE	IJ	ISOLATION JOINT
RWP	RAINWATER PIPE	FB	FULL BORE OUTLET

KEY:

NEW WALL

EXISTING WALL TO REMAIN

EXISTING WALL TO BE DEMOLISHED

ALL DIMENSIONS TO BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES TO BE REPORTED TO THE AUTHOR IMMEDIATELY. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND STRUCTURAL DRAWINGS.

GENERAL NOTE:

1. ALL DIMENSIONS & LEVELS TO BE CHECKED ON SITE BEFORE CONSTRUCTION COMMENCES.
2. ALL DIMENSIONS & LEVELS TO BE CHECKED WITH ARCHITECTS DRAWINGS BEFORE CONSTRUCTION COMMENCES.
3. HORIZONTAL V-JOINT BETWEEN ALL BRICKWORK AND CONCRETE.
4. ALL NON-LOAD BEARING BRICKWORK TO STOP 10mm UNDER SLAB.
5. ALL LOAD BEARING BRICKWORK SHOWN WITH HATCHING.
6. ALL CONCRETE TO BE IN ACCORDANCE WITH SABS 1200 G.
7. ALL CONCRETE TO BE OF MIN GRADE 25MPa/20 FOR BEAMS AND SLABS
8. THE ENGINEER IS NOT RESPONSIBLE FOR THE ADEQUACY OF THE FOUNDATIONS, BRICKWORK OR STRUCTURAL ELEMENTS SUCH AS BRICK LINTOLS OVER OPENINGS, BEAMS, COLUMNS ETC.
9. ALL WORK TO BE DONE ACCORDING TO SABS 1200 AND THE RELEVANT BUILDING/ CONSTRUCTION CODES FOR NATIONAL AND LOCAL AUTHORITIES AS MAY BE APPLICABLE.
10. CURING OF ALL CONCRETE ELEMENTS IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND SHALL BE DONE ACCORDING TO SABS 1200 5.5.8
11. STRIPPING OF SHUTTERING AND REMOVAL OF PROPS ACCORDING TO SABS 1200G 5,4 & 5.2.5
12. 10mm SOFTBOARD TO BE PLACED VERTICALLY BETWEEN CONCRETE AND BRICKWORK FOR SLABS SUPPORTED ON HALF-WALL AT OUTSIDE WALLS.
13. HORIZONTAL SLIDING JOINTS:
    A. FLOOR SLABS: TWO LAYERS OF 250 MICRON PVC PLASTIC SHEETING HORZ. BETWEEN ALL CONCRETE AND BRICKWORK.
    B. ROOF SLABS: TWO LAYERS OF 3-PLY MALTHOID HORIZONTAL BETWEEN ALL CONCRETE AND BRICKWORK.
14. PREPARATION OF SUPPORTING SURFACE FOR SLAB ON LOAD BEARING BRICKWORK: BRICKWORK TO BE EVENLY LAYED AND TRUE HORIZONTAL WITH ALL JOINTS PROPERLY FILLED AND FLUSH WITH TOP SURFACE OF BRICKWORK. SURFACE TO BE PROPERLY CLEANED BEFORE PLACING OF SLIDING MATERIAL.
15. ALL LOAD BEARING BRICK WALLS TO RELEVENT BUILDING REGULATIONS AND CODES
16. ALL FOUNDATIONS TO BE ON SUITABLE SOIL CONDITIONS. (DISCUSS WITH ENGINEER)
17. MINIMUM NOMINAL BRICK STRENGH: 10,5 MPa.
18. MINIMUM MORTAR CLASS: CLASS II.
19. SPECIALISTS ELEMENTS TO BE VERIFIED BY SPECIALIST CONSULTANT OR SUPPLIER.
20. ALL STRUCTURAL COMPONENTS TO BE VERIFIED AND INSPECTED BY STRUCTURAL ENGINEER.
21. ALL ARCHITECTURAL MATERIALS AND SAMPLES TO BE APPROVED BY THE ARCHITECT.
22. ALL BUILDING WORK TO BE IN ACCORDANCE WITH NBR AND SABS OR THE RELEVANT LOCAL AUTHORITY
23. THE CONTRACTOR TO KEEP A FULL SET OF DRAWINGS ON SITE.
24. DIMENSIONS AND LEVELS MUST NOT BE SCALED OR ASSUMED. AFTER NOTIFICATION, DISCREPANCIES OR MISSING DIMENSIONS AND LEVELS WILL BE CORRECTED IN WRITTING BY THE ENGINEER.
25. ALL WORK SHALL BE EXECUTED IN STRICT ACCORDANCE WITH THE APPLICABLE PARTS OF THE LATEST EDITION OF SANS 10400, SANS 2001, SANS 1200 ,THE OSH ACT AND THE PROJECT SPECIFICATION IN THE CONTRACT DOCUMENTS.
26. THE CONTRACTOR SHALL CHECK ALL PROJECT DIMENSIONS ON SITE BEFOREHAND,ANY DICREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER.
27. ALL SANS SPECIFICATIONS MENTIONED IN THE NOTES,ON THE DRAWINGS AND IN PROJECT SPECIFICATIONS SHALL BE AVALAIBLE ON SITE AT ALL TIMES IN HARD COPY FORMAT.
28. ALL INSTRUCTIONS FROM THE ENGINEER TO BE WRITTEN IN THE SITE INSTRUCTION BOOK,THAT SHOULD BE PROVIDED BY THE CONTRACTOR.
29. PRODUCTS DIFFERENT TO THOSE SPECIFIED MAY BE USED WITH THE ENGINEER'S PRIOR APPROVAL.
30. UNLESS OTHERWISE INDICATED ON DRAWINGS, ALL WATERPROOFING,DRAINAGE FALLS AND FINISHES ARE ACCORDING TO THE ARCHITECT DETAILS AND SPECIFICATIONS.
31. THE CONTRACTOR SHALL DISCLOSE HIS PROPOSED BUILDING SEQUENCE IN BOARD TERMS BEFORE SITE ESTABLISHMENT.
32. ANY DEVIATIONS FROM THE CONSTRUCTION DRAWINGS PLANNED BY THE CONTRACTOR SHALL BE PROPOSED TO THE ENGINEER IN FULL DETAIL FOR A DECISION. THE ENGINEER IS UNDER NO OBLIGATION TO APPROVE SUCH DEVIATIONS,BUT IF APPROVED,THE APPROVAL SHALL BE IN WRITTING.
33. REFER TO ALL RELEVANT DRAWINGS BY:-
    - ARCHITECTS - STRUCTURAL ENGINEERS
    - ELECTRICAL ENGINEERS - MECHANICAL ENGINEERS
34. ALL COLUMNS, WALLS AND BEAMS TO BE PLACED CENTRALLY ON GRID/ CENTRE LINES UNLESS DIMENSIONED OTHERWISE.
35. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT HE UNDERSTANDS AND COMPLIES WITH ALL RELEVANT ENGINEERING DRAWINGS AND SPECIFICATIONS AND IS ADEQUATELY EXPERIENCED TO UNDERTAKE ALL ASPECTS OF THE WORK SAFELY.
36. THE CONTRACTOR IS TO COMPLY AT ALL TIMES WITH ALL RELEVANT MUNICIPAL REGULATIONS AND BYLAWS IN THE AREA OF THE SITE AND IS TO ENSURE THAT HE HAS A SET OF APPROVED BUILDING PLANS ON SITE AT ALL TIMES
37. ALL PRODUCTS SPECIFIED FOR USE ARE TO BE USED STRICTLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS AT ALL TIMES.
38. SHOULD THE ENGINEER BE REQUIRED ON SITE,48 HRS NOTICE SHOULD BE REQUESTED IN WRITTING,FAILURE TO DO SO,THE ENGINEER WILL NOT BE HELD RESPONSIBLE FOR ANY DELAYS OR COST IMPLICATIONS.
39. IN CASE OF THE FIELD ENGINEERING QUIRIES TO THE ENGINEER, IN WRITTING. THE CONTRACTOR SHALL HAVE A PROPOSED SOLUTION AND SUFFICIENT DIGITAL PHOTOGRAPHS TO SHOW THE PROBLEM.

FOR CONSTRUCTION

REVISIONS		
No.	Description	Date
00	Issued for Construction	25/01/2024

MOTAU ENGINEERS

MOTAU ENGINEERS

18 LOTTERING STREET, BENDOR PARK POLOKWANE.

DESIGNED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

DRAWN
NAME: D.G. MASHAVHA
SIGNATURE: DATE: JANUARY 2024

CHECKED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
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INFORMATION OFFICE CHECKED
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DESIGN OFFICE APPROVAL
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
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SERVICES SETA

SERVICES SETA

Project Description:

GA-PASHA VILLAGE SKILL CENTRE

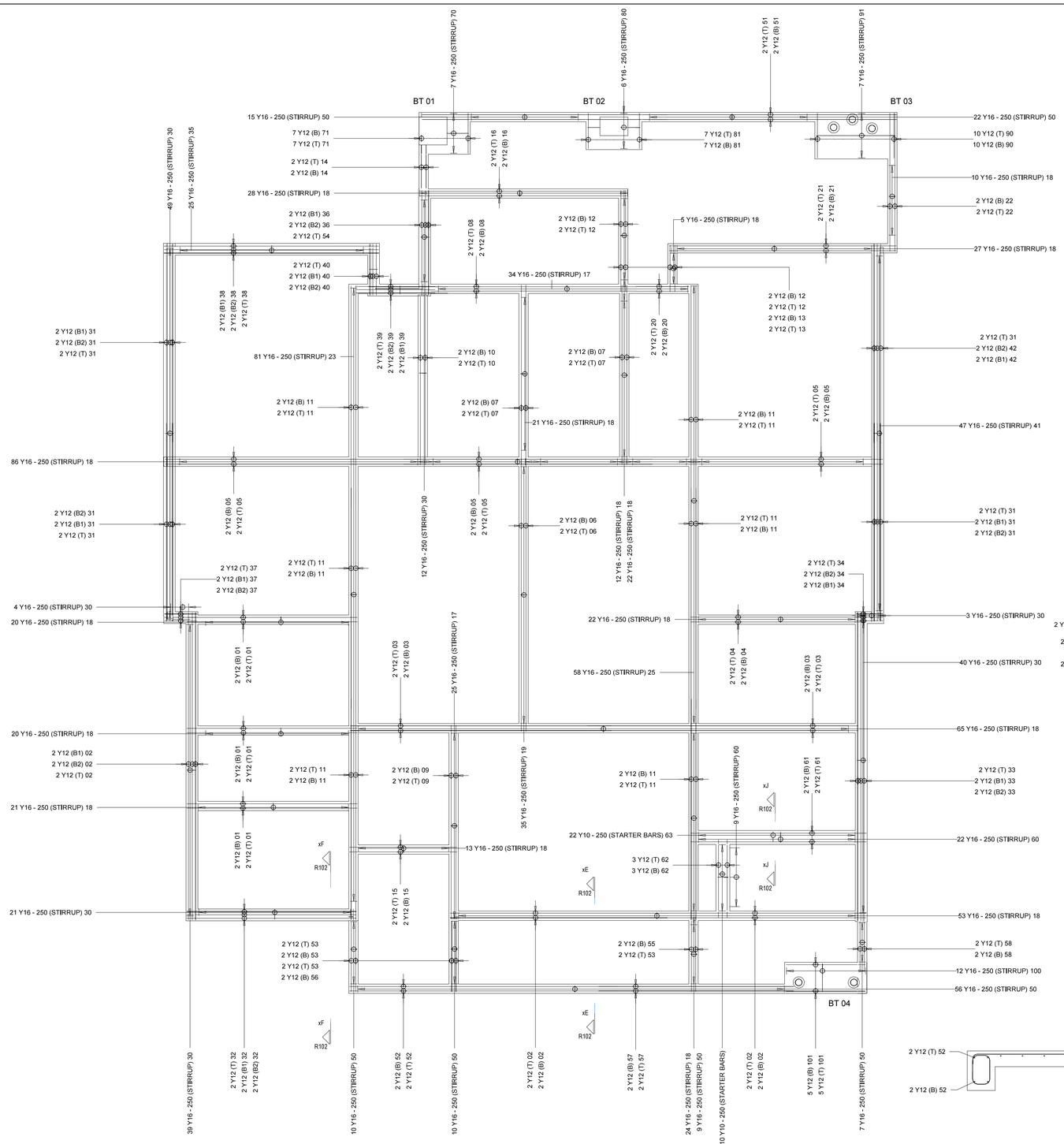
Drawing Description:

MAIN BUILDING - BENDING SCHEDULE

Project Number:	Drawing Number:
MOT2401	106
Date: JANUARY 2024	Scale: AS SHOWN
Sheet Size: A1	Revision: 00

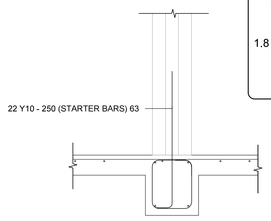
SHEET 1 OF 1

Discipline: **STRUCTURAL**



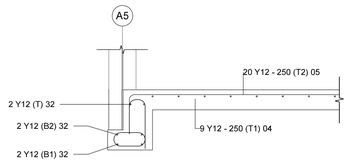
GROUND BEAM REINFORCEMENT LAYOUT

Scale 1 : 75



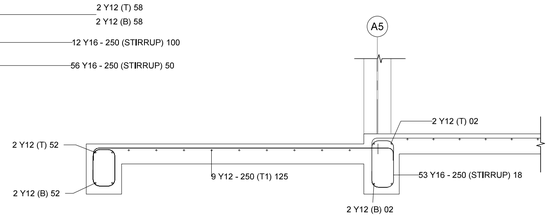
SECTION xJ-xJ

Scale 1 : 25



SECTION xF-xF

Scale 1 : 25



SECTION xE-xE

Scale 1 : 25

BEAM SCHEDULE

TYPE	DESCRIPTION
BR01	50x50x5 L
BR02	60.3x3.5 CHS
CB02	230x230 RC BEAM
CB03	230x765 RC BEAM
FR01	IPE 160
GB01	300x510 RC BEAM
GB02	525x250x380 RC L-BEAM
GB03	300x425 RC BEAM
GB04	450x510 RC BEAM
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RB01	230x425 RC BEAM
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TB10	CHS114x4,5

LEGEND

TOC	TOP OF CONCRETE	CJ	CONSTRUCTION JOINT
TOW	TOP OF WALL	SJ	SAW CUT JOINT
D/S	DOWNSTAND CONCRETE	MJ	MOVEMENT JOINT
U/S	UPSTAND CONCRETE	IJ	ISOLATION JOINT
RWP	RAINWATER PIPE	FB	FULL BORE OUTLET

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FOR CONSTRUCTION

REVISIONS

No.	Description	Date
00	Issued for Construction	25/01/2024

MOTAU ENGINEERS

18 LOTTERING STREET, BENDOR PARK
POLOKWANE.

DESIGNED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

DRAWN
NAME: D.G. MASHAVHA
SIGNATURE: DATE: JANUARY 2024

CHECKED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

INFORMATION OFFICE CHECKED
NAME: D.G. MASHAVHA
SIGNATURE: DATE: JANUARY 2024

DESIGN OFFICE APPROVAL
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

SERVICES SETA

Project Description:

GA-PASHA VILLAGE SKILL CENTRE

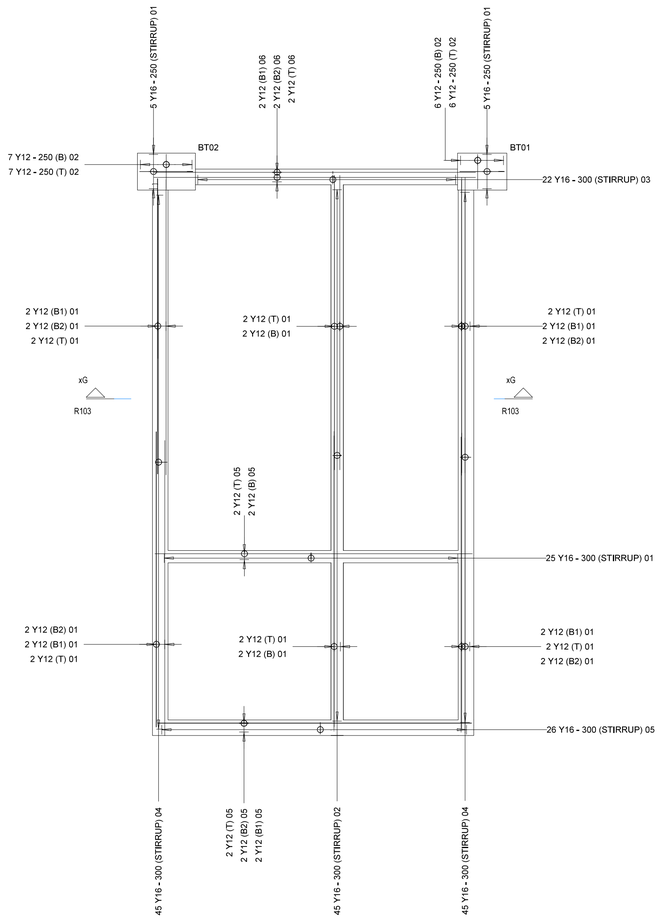
Drawing Description:

MAIN BUILDING - GROUND BEAM REINFORCEMENT LAYOUT AND SECTIONS

Project Number: MOT2401	Drawing Number: R102
Date: JANUARY 2024	Scale: AS SHOWN
Sheet Size: A1	Revision: 00
SHEET 1 OF 1	
Discipline: STRUCTURAL	

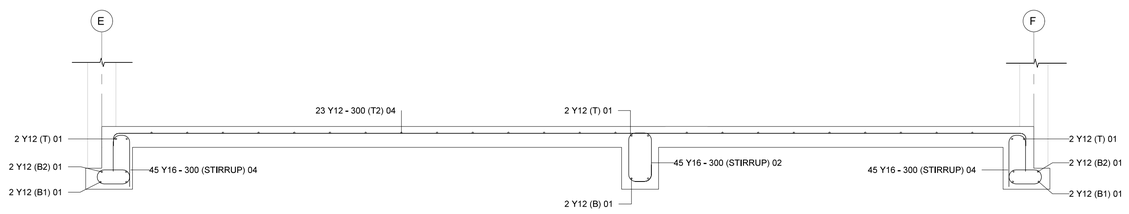
PLOT DATE: 26/01/2024 6:10 pm

C:\Users\dgmas\OneDrive\Documents\Hybrid Eng. Solutions\Ga-Phasha\Motau Drawings\CIVIL & STRUCTURAL\STRUCTURAL\MOT2401-SE-MB-R102- GROUND BEAM REINFORCEMENT LAYOUT & SECTIONS.dwg



GROUND BEAM REINFORCEMENT LAYOUT

Scale 1 : 75



SECTION xG-xG

Scale 1 : 25

Member	Bar Mark	Type & Size	No. of mbrs.	No. of Bars in Each	Total No.	Length of each bar t mm	Shape	A* mm	B* mm	C* mm	D* mm	E/R* mm
SIMULA. BASE TYPE 01												
	01	Y16	1	5	5	3100	60	410	1100	0	0	0
	02	Y12	1	12	12	850	20	850	0	0	0	0
SIMULA. BASE TYPE 02												
	01	Y16	1	5	5	3525	60	410	1310	0	0	0
	02	Y12	1	14	14	850	20	850	0	0	0	0

BASE REBAR WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
<varies>	Y12	78,84 kg
<varies>	Y16	204,36 kg
TOTAL		283,20 kg

GROUND BEAMS REBAR SCHEDULE.

MEMBER NAME	NUM	MARK	TYPE	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)		E/R (mm)
SIMULTA, AREA GROUNG BEAM	6	01	Y12	32	7200	20	7200	0	0	0		0
SIMULTA, AREA GROUNG BEAM	1	02	Y16	45	1310	60	200	410	0	0		0
SIMULTA, AREA GROUNG BEAM	1	03	Y16	22	1450	75	300	150	410	280		130
SIMULTA, AREA GROUNG BEAM	2	04	Y16	90	1460	75	300	150	410	280		130
SIMULTA, AREA GROUNG BEAM	3	05	Y12	10	7740	20	7735	0	0	0		0
SIMULTA, AREA GROUNG BEAM	2	06	Y12	6	7830	20	7835	0	0	0		0

RING BEAM WEIGHT SUMMARY.

MEMBER NAME	TYPE	WEIGHT
SIMULTA, AREA GROUNG BEAM	Y12	315 kg
SIMULTA, AREA GROUNG BEAM	Y16	351 kg
TOTAL		666 kg

1.0 EXCAVATIONS AND FOUNDATIONS

1.1 ALL EXCAVATIONS FOR FOUNDATIONS (WHERE NOT PILED) TO BE CHECKED AND APPROVED BY THE ENGINEER BEFORE ANY CONCRETE IS CAST.

1.2 ALL FOUNDATIONS TO BE BUILT ON FIRM IN-SITU MATERIAL (NOT ON FILL).

1.3 THE TOP LEVEL OF ALL FOUNDATIONS TO BE AT LEAST 300MM BELOW FINAL OUTSIDE GROUND LEVEL OR FINISHED FLOOR LEVEL, WHICHEVER IS THE LOWER.

1.4 ASSUMED SAFE BEARING CAPACITY OF SOIL UNDER FOUNDATIONS – 250KPA. (REFER TO GEOTECHNICAL REPORT)

1.5 ALL RISING FOUNDATION BRICKWORK TO HAVE CONTINUOUS BRICKFORCE EVERY 2ND COURSE AND CAVITY TO BE FILLED TO UNDERSIDE OF STEPPED DPC WITH 13MM AGGREGATE, 15MPA CONCRETE TAKING CARE NOT TO ALLOW ANY HONEYCOMBING

1.6 ALL FINAL FOUNDATION SIZES, DEPTH AND DETAILS ARE SUBJECT TO CONFIRMATION ON SITE BY ENGINEER.

1.7 THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE SAFETY OF ALL DEEP EXCAVATIONS AND FOR ERECTING READY FENCE AND OR HOARDING AROUND THE SITE TO PREVENT ENTRY AFTER WORKING HOURS AND THE GENERAL SAFETY OF THE SITE AT ALL TIMES.

1.8 ALL FOUNDATION EXCAVATIONS TO BE BELOW ANY SIGNS OF ORGANIC MATERIAL OR ROOTS ETC.

BEAM SCHEDULE.

TYPE	DESCRIPTION
	<varies>
BR01	50x50x5 L
BR02	60.3x3.5 CHS
CB02	230x230 RC BEAM
CB03	230x765 RC BEAM
FR01	IPE 160
PL01	75x50x20x2.5 CFLC
RB01	230x425 RC BEAM
SB01	203x133x30 UB
SB02	254x146x31 UB
TB10	CHS114x4,5

LEGEND

TOC	TOP OF CONCRETE	CJ	CONSTRUCTION JOINT
TOW	TOP OF WALL	SJ	SAW CUT JOINT
D/S	DOWNSTAND CONCRETE	MJ	MOVEMENT JOINT
U/S	UPSTAND CONCRETE	IJ	ISOLATION JOINT
RWP	RAINWATER PIPE	FB	FULL BORE OUTLET

KEY:

NEW WALL

EXISTING WALL TO REMAIN

EXISTING WALL TO BE DEMOLISHED

ALL DIMENSIONS TO BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES TO BE REPORTED TO THE AUTHOR IMMEDIATELY. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND STRUCTURAL DRAWINGS.

GENERAL NOTE:

1. ALL DIMENSIONS & LEVELS TO BE CHECKED ON SITE BEFORE CONSTRUCTION COMMENCES.
2. ALL DIMENSIONS & LEVELS TO BE CHECKED WITH ARCHITECTS DRAWINGS BEFORE CONSTRUCTION COMMENCES.
3. HORIZONTAL V-JOINT BETWEEN ALL BRICKWORK AND CONCRETE.
4. ALL NON-LOAD BEARING BRICKWORK TO STOP 10mm UNDER SLAB.
5. ALL LOAD BEARING BRICKWORK SHOWN WITH HATCHING.
6. ALL CONCRETE TO BE IN ACCORDANCE WITH SABS 1200 G.
7. ALL CONCRETE TO BE OF MIN GRADE 25MPa/20 FOR BEAMS AND SLABS
8. THE ENGINEER IS NOT RESPONSIBLE FOR THE ADEQUACY OF THE FOUNDATIONS, BRICKWORK OR STRUCTURAL ELEMENTS SUCH AS BRICK LINTOLS OVER OPENINGS, BEAMS, COLUMNS ETC.
9. ALL WORK TO BE DONE ACCORDING TO SABS 1200 AND THE RELEVANT BUILDING/ CONSTRUCTION CODES FOR NATIONAL AND LOCAL AUTHORITIES AS MAY BE APPLICABLE.
10. CURING OF ALL CONCRETE ELEMENTS IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND SHALL BE DONE ACCORDING TO SABS 1200 S.5.8
11. STRIPPING OF SHUTTERING AND REMOVAL OF PROPS ACCORDING TO SABS 1200G 5,4 & 5,2.5
12. 10mm SOFTBOARD TO BE PLACED VERTICALLY BETWEEN CONCRETE AND BRICKWORK FOR SLABS SUPPORTED ON HALF-WALL AT OUTSIDE WALLS.
13. HORIZONTAL SLIDING JOINTS:
    A. FLOOR SLABS: TWO LAYERS OF 250 MICRON PVC PLASTIC SHEETING HORZ. BETWEEN ALL CONCRETE AND BRICKWORK.
    B. ROOF SLABS: TWO LAYERS OF 3-PLY MALTHOID HORIZONTAL BETWEEN ALL CONCRETE AND BRICKWORK.
14. PREPARATION OF SUPPORTING SURFACE FOR SLAB ON LOAD BEARING BRICKWORK: BRICKWORK TO BE EVENLY LAYED AND TRUE HORIZONTAL WITH ALL JOINTS PROPERLY FILLED AND FLUSH WITH TOP SURFACE OF BRICKWORK. SURFACE TO BE PROPERLY CLEANED BEFORE PLACING OF SLIDING MATERIAL.
15. ALL LOAD BEARING BRICK WALLS TO RELEVENT BUILDING REGULATIONS AND CODES
16. ALL FOUNDATIONS TO BE ON SUITABLE SOIL CONDITIONS. (DISCUSS WITH ENGINEER)
17. MINIMUM NOMINAL BRICK STRENGH: 10,5 MPa.
18. MINIMUM MORTAR CLASS: CLASS II.
19. SPECIALISTS ELEMENTS TO BE VERIFIED BY SPECIALIST CONSULTANT OR SUPPLIER.
20. ALL STRUCTURAL COMPONENTS TO BE VERIFIED AND INSPECTED BY STRUCTURAL ENGINEER.
21. ALL ARCHITECTURAL MATERIALS AND SAMPLES TO BE APPROVED BY THE ARCHITECT.
22. ALL BUILDING WORK TO BE IN ACCORDANCE WITH NBR AND SABS OR THE RELEVANT LOCAL AUTHORITY
23. THE CONTRACTOR TO KEEP A FULL SET OF DRAWINGS ON SITE.
24. DIMENSIONS AND LEVELS MUST NOT BE SCALED OR ASSUMED. AFTER NOTIFICATION, DISCREPANCIES OR MISSING DIMENSIONS AND LEVELS WILL BE CORRECTED IN WRITTING BY THE ENGINEER.
25. ALL WORK SHALL BE EXECUTED IN STRICT ACCORDANCE WITH THE APPLICABLE PARTS OF THE LATEST EDITION OF SANS 10400, SANS 2001, SANS 1200 ,THE OSH ACT AND THE PROJECT SPECIFICATION IN THE CONTRACT DOCUMENTS.
26. THE CONTRACTOR SHALL CHECK ALL PROJECT DIMENSIONS ON SITE BEFOREHAND,ANY DICREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER.
27. ALL SANS SPECIFICATIONS MENTIONED IN THE NOTES,ON THE DRAWINGS AND IN PROJECT SPECIFICATIONS SHALL BE AVALAIBLE ON SITE AT ALL TIMES IN HARD COPY FORMAT.
28. ALL INSTRUCTIONS FROM THE ENGINEER TO BE WRITTEN IN THE SITE INSTRUCTION BOOK,THAT SHOULD BE PROVIDED BY THE CONTRACTOR.
29. PRODUCTS DIFFERENT TO THOSE SPECIFIED MAY BE USED WITH THE ENGINEER'S PRIOR APPROVAL.
30. UNLESS OTHERWISE INDICATED ON DRAWINGS, ALL WATERPROOFING,DRAINAGE FALLS AND FINISHES ARE ACCORDING TO THE ARCHITECT DETAILS AND SPECIFICATIONS.
31. THE CONTRACTOR SHALL DISCLOSE HIS PROPOSED BUILDING SEQUENCE IN BOARD TERMS BEFORE SITE ESTABLISHMENT.
32. ANY DEVIATIONS FROM THE CONSTRUCTION DRAWINGS PLANNED BY THE CONTRACTOR SHALL BE PROPOSED TO THE ENGINEER IN FULL DETAIL FOR A DECISION. THE ENGINEER IS UNDER NO OBLIGATION TO APPROVE SUCH DEVIATIONS,BUT IF APPROVED,THE APPROVAL SHALL BE IN WRITTING.
33. REFER TO ALL RELEVANT DRAWINGS BY:-
    - ARCHITECTS - STRUCTURAL ENGINEERS
    - ELECTRICAL ENGINEERS - MECHANICAL ENGINEERS
34. ALL COLUMNS, WALLS AND BEAMS TO BE PLACED CENTRALLY ON GRID/ CENTRE LINES UNLESS DIMENSIONED OTHERWISE.
35. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT HE UNDERSTANDS AND COMPLIES WITH ALL RELEVANT ENGINEERING DRAWINGS AND SPECIFICATIONS AND IS ADEQUATELY EXPERIENCED TO UNDERTAKE ALL ASPECTS OF THE WORK SAFELY.
36. THE CONTRACTOR IS TO COMPLY AT ALL TIMES WITH ALL RELEVANT MUNICIPAL REGULATIONS AND BYLAWS IN THE AREA OF THE SITE AND IS TO ENSURE THAT HE HAS A SET OF APPROVED BUILDING PLANS ON SITE AT ALL TIMES
37. ALL PRODUCTS SPECIFIED FOR USE ARE TO BE USED STRICTLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS AT ALL TIMES.
38. SHOULD THE ENGINEER BE REQUIRED ON SITE,48 HRS NOTICE SHOULD BE REQUESTED IN WRITTING,FAILURE TO DO SO,THE ENGINEER WILL NOT BE HELD RESPONSIBLE FOR ANY DELAYS OR COST IMPLICATIONS.
39. IN CASE OF THE FIELD ENGINEERING QUIRIES TO THE ENGINEER, IN WRITTING. THE CONTRACTOR SHALL HAVE A PROPOSED SOLUTION AND SUFFICIENT DIGITAL PHOTOGRAPHS TO SHOW THE PROBLEM.

FOR CONSTRUCTION

REVISIONS		
No.	Description	Date
00	Issued for Construction	25/01/2024

MOTAU ENGINEERS

MOTAU ENGINEERS

18 LOTTERING STREET, BENDOR PARK
POLOKWANE.

DESIGNED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

DRAWN
NAME: D.G. MASHAVHA
SIGNATURE: DATE: JANUARY 2024

CHECKED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
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INFORMATION OFFICE CHECKED
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DESIGN OFFICE APPROVAL
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

SERVICES SETA

SERVICES SETA

Project Description:

GA-PASHA VILLAGE SKILL CENTRE

Drawing Description:

MAIN BUILDING - GROUND BEAM REINFORCEMENT LAYOUT AND SECTIONS

Project Number: MOT2401	Drawing Number: R103
Date: JANUARY 2024	Scale: AS SHOWN
Sheet Size: A1	Revision: 00
SHEET 1 OF 1	
Discipline: STRUCTURAL	

PLOT DATE: 26/01/2024 6:15 pm

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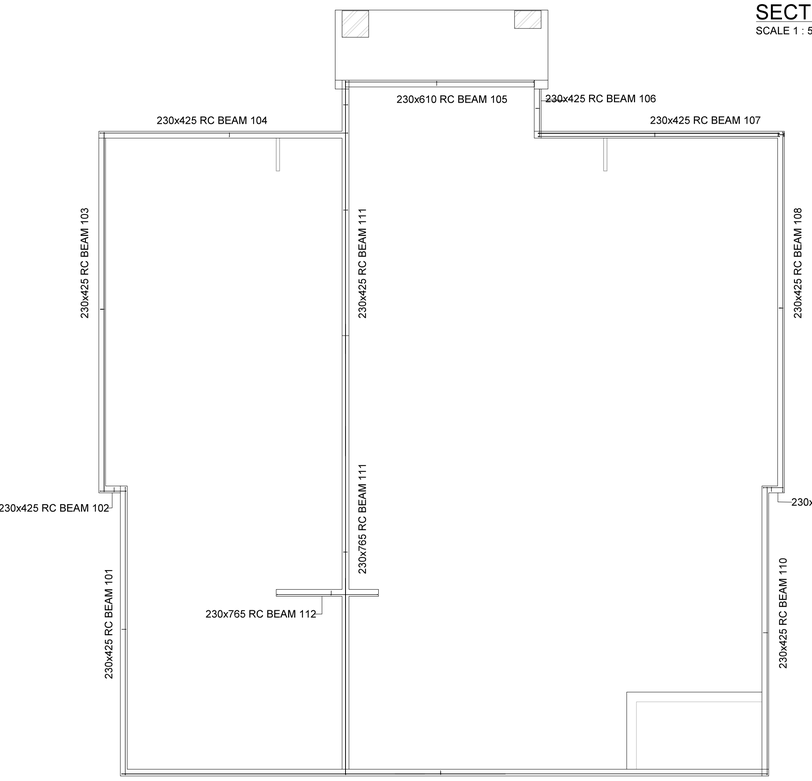
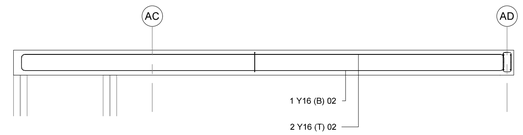
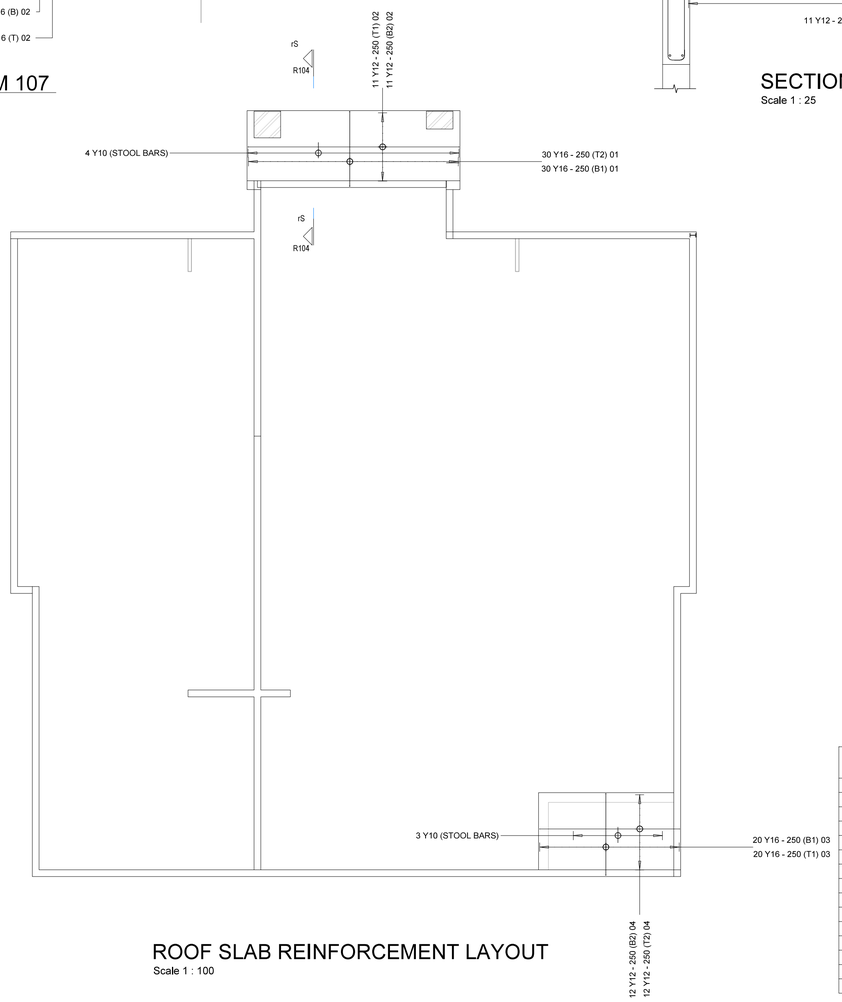


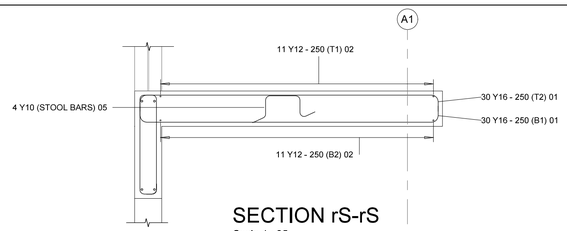
RING BEAM REINFORCEMENT LAYOUT
Scale 1 : 100



SECTION - BEAM 107
SCALE 1 : 50

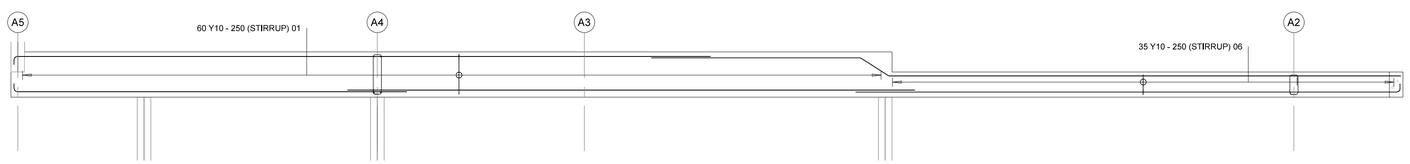


ROOF SLAB REINFORCEMENT LAYOUT
Scale 1 : 100



SECTION rS-rS
Scale 1 : 25

BEAM SCHEDULE	
TYPE	DESCRIPTION
BR01	50x50x5 L
BR02	60.3x3.5 CHS
CB02	230x230 RC BEAM
CB03	230x765 RC BEAM
FR01	IPE 160
GB01	300x510 RC BEAM
GB02	525x250x380 RC L-BEAM
GB03	300x425 RC BEAM
GB04	450x510 RC BEAM
PL01	75x50x20x2.5 CFLC
RB01	230x425 RC BEAM
SB01	203x133x30 UB
SB02	254x146x31 UB
TB10	CHS114x4.5



SECTION -BEAM 111
SCALE 1 : 50

LEGEND

TOC	TOP OF CONCRETE	CJ	CONSTRUCTION JOINT
TOW	TOP OF WALL	SJ	SAW CUT JOINT
D/S	DOWNSTAND CONCRETE	MJ	MOVEMENT JOINT
U/S	UPSTAND CONCRETE	IJ	ISOLATION JOINT
RWP	RAINWATER PIPE	FB	FULL BORE OUTLET

KEY:

NEW WALL

EXISTING WALL TO REMAIN

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RING BEAM WEIGHT SUMMARY..		
MEMBER NAME	TYPE	WEIGHT
.BEAM 111	Y10	63 kg
.BEAM 107	Y16	13 kg
TOTAL		76 kg

.RING BEAMS REBAR SCHEDULE											
MEMBERS				NUMBER		SHAPE					E/R
NAME	NUM	MARK	TYPE	TOTAL	LENGTH	CODE	A (mm)	B (mm)	C (mm)	D (mm)	(mm)
.BEAM 107	1	01	Y16	1	8380	35	8175	0	0	0	0
.BEAM 111	1	01	Y10	60	1700	60	145	675	0	0	0

ROOF SLAB WEIGHT SUMMARY		
MEMBER NAME	TYPE	WEIGHT
ROOF SLAB	Y10	3 kg
ROOF SLAB	Y12	248 kg
ROOF SLAB	Y16	443 kg
TOTAL		694 kg

Member	Bar Mark	Type & Size	No. of mbrs	No. of Bars in Each	Total No.	Length of each bar † mm	Shape	A* mm	B* mm	C* mm	D* mm	E/R* mm	Rev. No.
ROOF SLAB													
	01	Y16	1	60	60	2750	38	145	2535	145	0	0	
	02	Y12	1	22	22	7375	38	150	7140	150	0	0	
	03	Y16	1	40	40	2900	38	100	2770	100	0	0	
	04	Y12	1	24	24	4875	38	100	4745	100	0	0	
	05	Y10	1	4	4	850	83	300	185	125	125	0	
	06	Y10	1	3	3	650	83	300	85	125	125	0	

FOR CONSTRUCTION

REVISIONS		
No.	Description	Date
00	Issued for Construction	25/01/2024

MOTAU ENGINEERS
18 LOTTERING STREET, BENDOR PARK
POLOKWANE.

DESIGNED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

DRAWN
NAME: D.G. MASHAVHA
SIGNATURE: DATE: JANUARY 2024

CHECKED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
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INFORMATION OFFICE CHECKED
NAME: D.G. MASHAVHA
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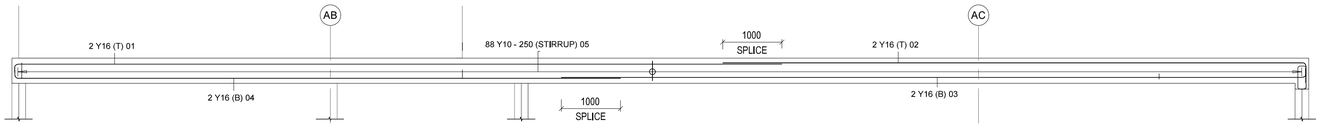
DESIGN OFFICE APPROVAL
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

SERVICES SETA

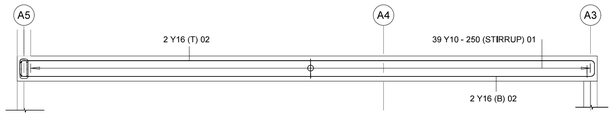
Project Description:
GA-PASHA VILLAGE SKILL CENTRE

Drawing Description:
MAIN BUILDING - RING BEAM REINFORCEMENT LAYOUT AND SECTIONS

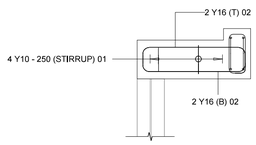
Project Number:	Drawing Number:
MOT2401	R104
Date: JANUARY 2024	Scale: AS SHOWN
Sheet Size: A1	Revision: 00
SHEET 1 OF 1	
Discipline: STRUCTURAL	



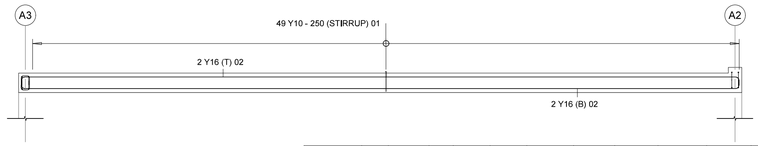
SECTION - BEAM 100
Scale 1 : 50



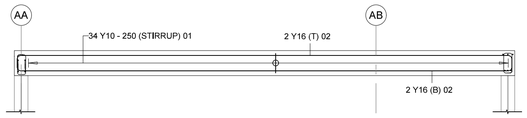
SECTION - BEAM 101
Scale 1 : 50



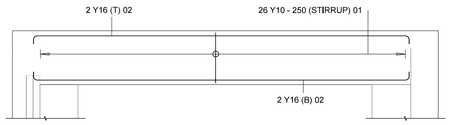
SECTION - BEAM 102
Scale 1 : 25



SECTION - BEAM 103
Scale 1 : 50



SECTION - BEAM 104
Scale 1 : 50



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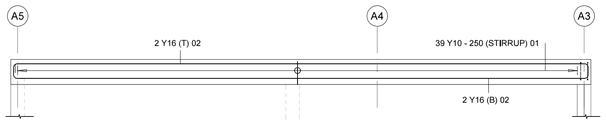
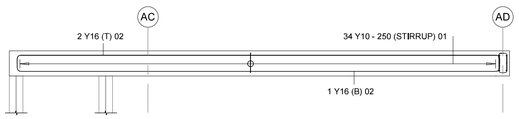
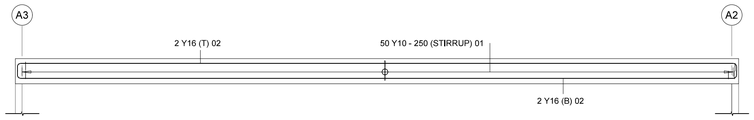


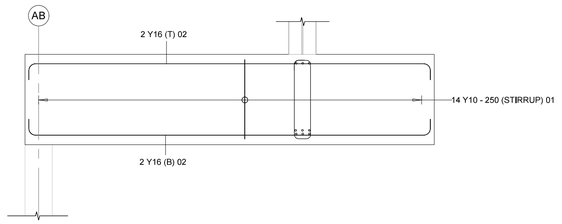
SECTION - BEAM 110
Scale 1 : 50



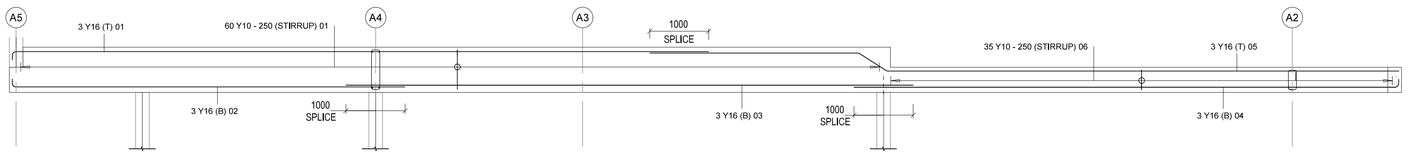
SECTION - BEAM 107
Scale 1 : 50



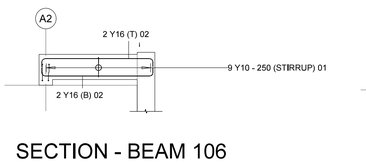
SECTION - BEAM 108
Scale 1 : 50



SECTION - BEAM 112
Scale 1 : 25



SECTION - BEAM 111
Scale 1 : 50



SECTION - BEAM 106
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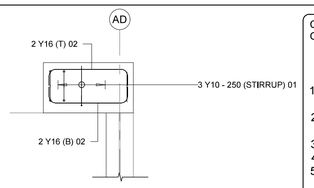


SECTION - BEAM 109
Scale 1 : 25

Member	Bar Mark	Type & Size	No. of mbrs.	No. of Bars in Each	Total No.	Length of each bar f mm	Shape	A* mm	B* mm	C* mm	D* mm	E/R* mm	Rev. No.
BEAM 100													
	01	Y16	1	2	2	13075	34	12980	0	0	0	0	
	02	Y16	1	2	2	9975	34	9870	0	0	0	0	
	03	Y16	1	2	2	12700	34	12600	0	0	0	0	
	04	Y16	1	2	2	10350	34	10250	0	0	0	0	
	05	Y10	1	88	88	1025	60	145	340	0	0	0	
BEAM 101													
	01	Y10	1	39	39	1025	60	145	340	0	0	0	
	02	Y16	1	4	4	9950	35	9730	0	0	0	0	
BEAM 102													
	01	Y10		0	4	850	60	150	250	0	0	0	
	02	Y16		0	4	1100	35	880	0	0	0	0	
BEAM 103													
	01	Y10	1	49	49	1050	60	150	345	0	0	0	
	02	Y16	1	4	4	12350	35	12150	0	0	0	0	
BEAM 104													
	01	Y10	1	34	34	1025	60	145	340	0	0	0	
	02	Y16	1	4	4	8600	35	8380	0	0	0	0	
BEAM 105													
	01	Y10	1	26	26	2050	60	150	845	0	0	0	
	02	Y16	1	4	4	6575	35	6365	0	0	0	0	
BEAM 106													
	01	Y10	1	9	9	1025	60	150	340	0	0	0	
	02	Y16	1	4	4	2100	35	1895	0	0	0	0	
BEAM 107													
	01	Y10	1	34	34	1025	60	340	145	0	0	0	
	02	Y16	1	3	3	8375	35	8175	0	0	0	0	
BEAM 108													
	01	Y10	1	50	50	1025	60	150	340	0	0	0	
	02	Y16	1	4	4	12375	35	12180	0	0	0	0	
BEAM 109													
	01	Y10	1	3	3	1050	60	150	340	0	0	0	
	02	Y16	1	4	4	900	35	680	0	0	0	0	
BEAM 110													
	01	Y10	1	39	39	1150	60	150	400	0	0	0	
	02	Y16	1	4	4	9950	35	9730	0	0	0	0	
BEAM 111													
	01	Y16	1	3	3	11900	34	11785	0	0	0	0	
	02	Y16	1	3	3	6750	34	6645	0	0	0	0	
	03	Y16	1	3	3	9600	20	9590	0	0	0	0	
	04	Y16	1	3	3	9325	34	9215	0	0	0	0	
	05	Y16	1	3	3	12750	41	3540	570	8660	320	0	
	06	Y10	1	35	35	1050	60	150	345	0	0	0	
BEAM 112													
	01	Y10	1	14	14	1725	60	150	680	0	0	0	
	02	Y16	1	4	4	3625	35	3410	0	0	0	0	

RING BEAM WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
<varies>	Y10	357 kg
<varies>	Y16	863 kg
TOTAL		1220 kg

BEAM SCHEDULE

TYPE	DESCRIPTION
BR01	50x50x5 L
BR02	60.3x3.5 CHS
CB02	230x230 RC BEAM
CB03	230x765 RC BEAM
FR01	IPE 160
GB01	300x510 RC BEAM
GB02	525x250x380 RC L-BEAM
GB03	300x425 RC BEAM
GB04	450x510 RC BEAM
PL01	75x50x20x2.5 CFLC
RB01	230x425 RC BEAM
SB01	203x133x30 UB
SB02	254x146x31 UB
TB10	CHS114x4.5

LEGEND

TOC	TOP OF CONCRETE	CJ	CONSTRUCTION JOINT
TOW	TOP OF WALL	SJ	SAW CUT JOINT
D/S	DOWNSTAND CONCRETE	MJ	MOVEMENT JOINT
U/S	UPSTAND CONCRETE	IJ	ISOLATION JOINT
RWP	RAINWATER PIPE	FB	FULL BORE OUTLET

KEY:

NEW WALL

EXISTING WALL TO REMAIN

EXISTING WALL TO BE DEMOLISHED

ALL DIMENSIONS TO BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES TO BE REPORTED TO THE AUTHOR IMMEDIATELY. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND STRUCTURAL DRAWINGS.

GENERAL NOTE:

1. ALL DIMENSIONS & LEVELS TO BE CHECKED ON SITE BEFORE CONSTRUCTION COMMENCES.
2. ALL DIMENSIONS & LEVELS TO BE CHECKED WITH ARCHITECTS DRAWINGS BEFORE CONSTRUCTION COMMENCES.
3. HORIZONTAL V-JOINT BETWEEN ALL BRICKWORK AND CONCRETE.
4. ALL NON-LOAD BEARING BRICKWORK TO STOP 10mm UNDER SLAB.
5. ALL LOAD BEARING BRICKWORK SHOWN WITH HATCHING.
6. ALL CONCRETE TO BE IN ACCORDANCE WITH SABS 1200 G.
7. ALL CONCRETE TO BE OF MIN GRADE 25MPa/20 FOR BEAMS AND SLABS
8. THE ENGINEER IS NOT RESPONSIBLE FOR THE ADEQUACY OF THE FOUNDATIONS, BRICKWORK OR STRUCTURAL ELEMENTS SUCH AS BRICK LINTOLS OVER OPENINGS, BEAMS, COLUMNS ETC.
9. ALL WORK TO BE DONE ACCORDING TO SABS 1200 AND THE RELEVANT BUILDING/ CONSTRUCTION CODES FOR NATIONAL AND LOCAL AUTHORITIES AS MAY BE APPLICABLE.
10. CURING OF ALL CONCRETE ELEMENTS IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND SHALL BE DONE ACCORDING TO SABS 1200 5.5.8
11. STRIPPING OF SHUTTERING AND REMOVAL OF PROPS ACCORDING TO SABS 1200G 5,4 & 5,2.5
12. 10mm SOFTBOARD TO BE PLACED VERTICALLY BETWEEN CONCRETE AND BRICKWORK FOR SLABS SUPPORTED ON HALF-WALL AT OUTSIDE WALLS.
13. HORIZONTAL SLIDING JOINTS:
    A. FLOOR SLABS:
       TWO LAYERS OF 250 MICRON PVC PLASTIC SHEETING HORZ. BETWEEN ALL CONCRETE AND BRICKWORK.
    B. ROOF SLABS:
       TWO LAYERS OF 3-PLY MALTHOID HORIZONTAL BETWEEN ALL CONCRETE AND BRICKWORK.
14. PREPARATION OF SUPPORTING SURFACE FOR SLAB ON LOAD BEARING BRICKWORK: BRICKWORK TO BE EVENLY LAYED AND TRUE HORIZONTAL WITH ALL JOINTS PROPERLY FILLED AND FLUSH WITH TOP SURFACE OF BRICKWORK. SURFACE TO BE PROPERLY CLEANED BEFORE PLACING OF SLIDING MATERIAL.
15. ALL LOAD BEARING BRICK WALLS TO RELEVENT BUILDING REGULATIONS AND CODES
16. ALL FOUNDATIONS TO BE ON SUITABLE SOIL CONDITIONS. (DISCUSS WITH ENGINEER)
17. MINIMUM NOMINAL BRICK STRENGH: 10,5 MPa.
18. MINIMUM MORTAR CLASS: CLASS II.
19. SPECIALISTS ELEMENTS TO BE VERIFIED BY SPECIALIST CONSULTANT OR SUPPLIER.
20. ALL STRUCTURAL COMPONENTS TO BE VERIFIED AND INSPECTED BY STRUCTURAL ENGINEER.
21. ALL ARCHITECTURAL MATERIALS AND SAMPLES TO BE APPROVED BY THE ARCHITECT.
22. ALL BUILDING WORK TO BE IN ACCORDANCE WITH NBR AND SABS OR THE RELEVANT LOCAL AUTHORITY
23. THE CONTRACTOR TO KEEP A FULL SET OF DRAWINGS ON SITE.
24. DIMENSIONS AND LEVELS MUST NOT BE SCALED OR ASSUMED. AFTER NOTIFICATION, DISCREPANCIES OR MISSING DIMENSIONS AND LEVELS WILL BE CORRECTED IN WRITTING BY THE ENGINEER.
25. ALL WORK SHALL BE EXECUTED IN STRICT ACCORDANCE WITH THE APPLICABLE PARTS OF THE LATEST EDITION OF SANS 10400, SANS 2001, SANS 1200 ,THE OSH ACT AND THE PROJECT SPECIFICATION IN THE CONTRACT DOCUMENTS.
26. THE CONTRACTOR SHALL CHECK ALL PROJECT DIMENSIONS ON SITE BEFOREHAND,ANY DICREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER.
27. ALL SANS SPECIFICATIONS MENTIONED IN THE NOTES,ON THE DRAWINGS AND IN PROJECT SPECIFICATIONS SHALL BE AVALAIBLE ON SITE AT ALL TIMES IN HARD COPY FORMAT.
28. ALL INSTRUCTIONS FROM THE ENGINEER TO BE WRITTEN IN THE SITE INSTRUCTION BOOK,THAT SHOULD BE PROVIDED BY THE CONTRACTOR.
29. PRODUCTS DIFFERENT TO THOSE SPECIFIED MAY BE USED WITH THE ENGINEER'S PRIOR APPROVAL.
30. UNLESS OTHERWISE INDICATED ON DRAWINGS, ALL WATERPROOFING,DRAINAGE FALLS AND FINISHES ARE ACCORDING TO THE ARCHITECT DETAILS AND SPECIFICATIONS.
31. THE CONTRACTOR SHALL DISCLOSE HIS PROPOSED BUILDING SEQUENCE IN BOARD TERMS BEFORE SITE ESTABLISHMENT.
32. ANY DEVIATIONS FROM THE CONSTRUCTION DRAWINGS PLANNED BY THE CONTRACTOR SHALL BE PROPOSED TO THE ENGINEER IN FULL DETAIL FOR A DECISION. THE ENGINEER IS UNDER NO OBLIGATION TO APPROVE SUCH DEVIATIONS,BUT IF APPROVED,THE APPROVAL SHALL BE IN WRITTING.
33. REFER TO ALL RELEVANT DRAWINGS BY:-
    - ARCHITECTS - STRUCTURAL ENGINEERS
    - ELECTRICAL ENGINEERS - MECHANICAL ENGINEERS
34. ALL COLUMNS, WALLS AND BEAMS TO BE PLACED CENTRALLY ON GRID/ CENTRE LINES UNLESS DIMENSIONED OTHERWISE.
35. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT HE UNDERSTANDS AND COMPLIES WITH ALL RELEVANT ENGINEERING DRAWINGS AND SPECIFICATIONS AND IS ADEQUATELY EXPERIENCED TO UNDERTAKE ALL ASPECTS OF THE WORK SAFELY.
36. THE CONTRACTOR IS TO COMPLY AT ALL TIMES WITH ALL RELEVANT MUNICIPAL REGULATIONS AND BYLAWS IN THE AREA OF THE SITE AND IS TO ENSURE THAT HE HAS A SET OF APPROVED BUILDING PLANS ON SITE AT ALL TIMES
37. ALL PRODUCTS SPECIFIED FOR USE ARE TO BE USED STRICTLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS AT ALL TIMES.
38. SHOULD THE ENGINEER BE REQUIRED ON SITE,48 HRS NOTICE SHOULD BE REQUESTED IN WRITTING,FAILURE TO DO SO,THE ENGINEER WILL NOT BE HELD RESPONSIBLE FOR ANY DELAYS OR COST IMPLICATIONS.
39. IN CASE OF THE FIELD ENGINEERING QUIRIES TO THE ENGINEER, IN WRITTING. THE CONTRACTOR SHALL HAVE A PROPOSED SOLUTION AND SUFFICIENT DIGITAL PHOTOGRAPHS TO SHOW THE PROBLEM.

FOR CONSTRUCTION

REVISIONS		
No.	Description	Date
00	Issued for Construction	25/01/2024

MOTAU ENGINEERS
MOTAU ENGINEERS
18 LOTTERING STREET, BENDOR PARK
POLOKWANE.

DESIGNED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

DRAWN
NAME: D.G. MASHAVHA
SIGNATURE: DATE: JANUARY 2024

CHECKED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

INFORMATION OFFICE CHECKED
NAME: D.G. MASHAVHA
SIGNATURE: DATE: JANUARY 2024

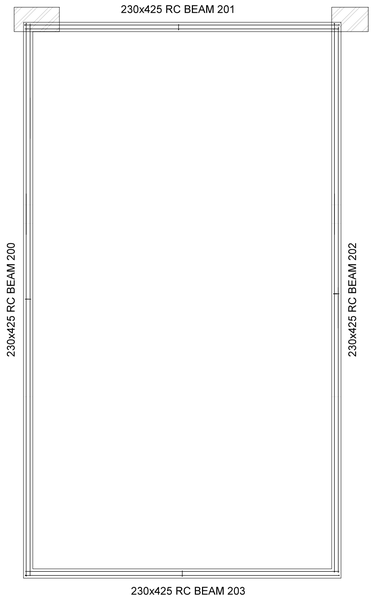
DESIGN OFFICE APPROVAL
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

SERVICES SETA
SERVICES SETA

Project Description:
GA-PASHA VILLAGE SKILL CENTRE

Drawing Description:
MAIN BUILDING - RING BEAM REINFORCEMENT BENDING SCHEDULE AND SECTIONS

Project Number:	Drawing Number:
MOT2401	R105
Date: JANUARY 2024	Scale: AS SHOWN
Sheet Size: A1	Revision: 00
SHEET 1 OF 1	
Discipline: STRUCTURAL	

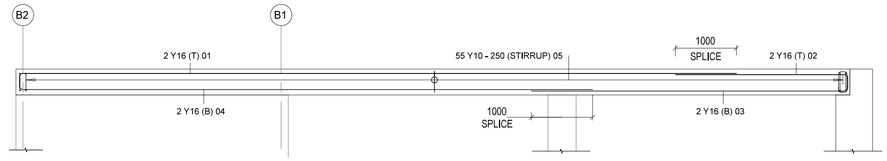


RING BEAM REINFORCEMENT LAYOUT
Scale 1 : 75

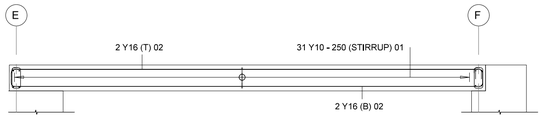
Member	Bar Mark	Type & Size	No. of mbrs.	No. of Bars in Each	Total No.	Length of each bar † mm	Shape	A* mm	B* mm	C* mm	D* mm	E/R* mm	Rev. No.
BEAM 200													
	01	Y16	1	2	2	11850	34	11755	0	0	0	0	
	02	Y16	1	2	2	2925	34	2830	0	0	0	0	
	03	Y16	1	2	2	5300	34	5190	0	0	0	0	
	04	Y16	1	2	2	9500	34	9395	0	0	0	0	
	05	Y10	1	55	55	1050	60	150	345	0	0	0	
BEAM 201													
	01	Y10	1	31	31	1050	60	145	345	0	0	0	
	02	Y16	1	4	4	7950	35	7735	0	0	0	0	
BEAM 202													
	01	Y16	1	2	2	7525	34	7415	0	0	0	0	
	02	Y16	1	2	2	7125	34	7020	0	0	0	0	
	03	Y16	1	2	2	9400	34	9295	0	0	0	0	
	04	Y16	1	2	2	5300	34	5190	0	0	0	0	
	05	Y10	1	54	54	1050	60	150	345	0	0	0	
BEAM 203													
	01	Y10	1	31	31	1050	60	150	345	0	0	0	
	02	Y16	1	4	4	7925	35	7720	0	0	0	0	

RING BEAM WEIGHT SUMMARY. Copy 1

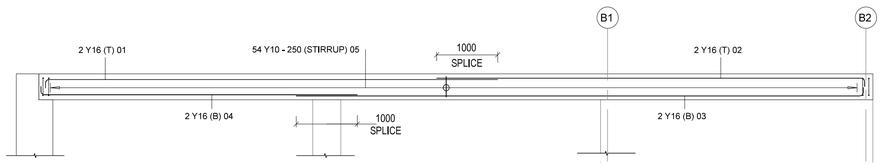
MEMBER NAME	TYPE	WEIGHT
<varies>	Y10	110 kg
<varies>	Y16	286 kg
TOTAL		396 kg



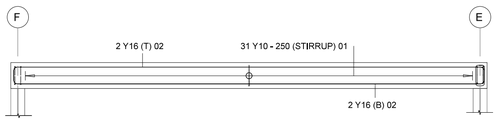
SECTION - BEAM 200
Scale 1 : 50



SECTION - BEAM 201
Scale 1 : 50



SECTION - BEAM 202
Scale 1 : 50



SECTION - BEAM 203
Scale 1 : 50

BEAM SCHEDULE

TYPE	DESCRIPTION
BR01	50x50x5 L
BR02	60.3x3.5 CHS
CB02	230x230 RC BEAM
CB03	230x765 RC BEAM
FR01	IPE 160
GB01	300x510 RC BEAM
GB02	525x250x380 RC L-BEAM
GB03	300x425 RC BEAM
GB04	450x510 RC BEAM
PL01	75x50x20x2.5 CFLC
RB01	230x425 RC BEAM
SB01	203x133x30 UB
SB02	254x146x31 UB
TB10	CHS114x4.5

LEGEND

TOC	TOP OF CONCRETE	CJ	CONSTRUCTION JOINT
TOW	TOP OF WALL	SJ	SAW CUT JOINT
D/S	DOWNSTAND CONCRETE	MJ	MOVEMENT JOINT
U/S	UPSTAND CONCRETE	IJ	ISOLATION JOINT
RWP	RAINWATER PIPE	FB	FULL BORE OUTLET

KEY:

NEW WALL

EXISTING WALL TO REMAIN

EXISTING WALL TO BE DEMOLISHED

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13. HORIZONTAL SLIDING JOINTS:
    A. FLOOR SLABS:
       TWO LAYERS OF 250 MICRON PVC PLASTIC SHEETING HORZ. BETWEEN ALL CONCRETE AND BRICKWORK.
    B. ROOF SLABS:
       TWO LAYERS OF 3-PLY MALTHOID HORIZONTAL BETWEEN ALL CONCRETE AND BRICKWORK.
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30. UNLESS OTHERWISE INDICATED ON DRAWINGS, ALL WATERPROOFING,DRAINAGE FALLS AND FINISHES ARE ACCORDING TO THE ARCHITECT DETAILS AND SPECIFICATIONS.
31. THE CONTRACTOR SHALL DISCLOSE HIS PROPOSED BUILDING SEQUENCE IN BOARD TERMS BEFORE SITE ESTABLISHMENT.
32. ANY DEVIATIONS FROM THE CONSTRUCTION DRAWINGS PLANNED BY THE CONTRACTOR SHALL BE PROPOSED TO THE ENGINEER IN FULL DETAIL FOR A DECISION. THE ENGINEER IS UNDER NO OBLIGATION TO APPROVE SUCH DEVIATIONS,BUT IF APPROVED,THE APPROVAL SHALL BE IN WRITTING.
33. REFER TO ALL RELEVANT DRAWINGS BY:-
    - ARCHITECTS - STRUCTURAL ENGINEERS
    - ELECTRICAL ENGINEERS - MECHANICAL ENGINEERS
34. ALL COLUMNS, WALLS AND BEAMS TO BE PLACED CENTRALLY ON GRID/ CENTRE LINES UNLESS DIMENSIONED OTHERWISE.
35. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT HE UNDERSTANDS AND COMPLIES WITH ALL RELEVANT ENGINEERING DRAWINGS AND SPECIFICATIONS AND IS ADEQUATELY EXPERIENCED TO UNDERTAKE ALL ASPECTS OF THE WORK SAFELY.
36. THE CONTRACTOR IS TO COMPLY AT ALL TIMES WITH ALL RELEVANT MUNICIPAL REGULATIONS AND BYLAWS IN THE AREA OF THE SITE AND IS TO ENSURE THAT HE HAS A SET OF APPROVED BUILDING PLANS ON SITE AT ALL TIMES
37. ALL PRODUCTS SPECIFIED FOR USE ARE TO BE USED STRICTLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS AT ALL TIMES.
38. SHOULD THE ENGINEER BE REQUIRED ON SITE,48 HRS NOTICE SHOULD BE REQUESTED IN WRITTING,FAILURE TO DO SO,THE ENGINEER WILL NOT BE HELD RESPONSIBLE FOR ANY DELAYS OR COST IMPLICATIONS.
39. IN CASE OF THE FIELD ENGINEERING QUIRIES TO THE ENGINEER, IN WRITTING. THE CONTRACTOR SHALL HAVE A PROPOSED SOLUTION AND SUFFICIENT DIGITAL PHOTOGRAPHS TO SHOW THE PROBLEM.

FOR CONSTRUCTION

REVISIONS

No.	Description	Date
00	Issued for Construction	25/01/2024

MOTAU ENGINEERS
18 LOTTERING STREET, BENDOR PARK
POLOKWANE.

DESIGNED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

DRAWN
NAME: D.G. MASHAVHA
SIGNATURE: DATE: JANUARY 2024

CHECKED
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

INFORMATION OFFICE CHECKED
NAME: D.G. MASHAVHA
SIGNATURE: DATE: JANUARY 2024

DESIGN OFFICE APPROVAL
NAME: L.M. PHAAHLA Pr Tech. Prof Reg No: 2019300372
SIGNATURE: DATE: JANUARY 2024

SERVICES SETA

Project Description:
GA-PASHA VILLAGE SKILL CENTRE

Drawing Description:
MAIN BUILDING - RING BEAM REINFORCEMENT LAYOUT AND SECTIONS (SIMULATION AREA)

Project Number:	Drawing Number:
MOT2401	R106
Date: JANUARY 2024	Scale: AS SHOWN
Sheet Size: A1	Revision: 00
SHEET 1 OF 1	
Discipline: STRUCTURAL	

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MULTI-DISCIPLINED CONSULTING ENGINEERS and PROJECT MANAGERS

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PRIVATE BAG X09
WELTEVREDEN
PARK, 1715

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FAX: 011 475 9140
EMAIL: admin@thembakele.co.za

CONSOLIDATED DRAWING REGISTER AND DISTRIBUTION LOG | **ISSUE LOG SHEET 1 OF 1**

PROJECT DESCRIPTION :	**GA-PHASHA SETA SKILLS DEVELOPMENT CENTRE ELECTRICAL SERVICES**	**ISSUED TO:**	**TENDERER**
PURPOSE OF ISSUE :	**TENDER**	**FOR ATTENTION:**	**TENDERER**
PROJECT NO. :	**TCE 1238**		
ISSUE DATE :	Tuesday, 26 November 2024	**Day**	26
ISSUED BY :	J Binda	**Month**	11
NOTES :	DRAWINGS FOR TENDER PURPOSES	**Year**	2024

ISSUE SET & DATE

1	2	3	4	5	6	7	8	9	10

DOCUMENT NO.	DESCRIPTION	DOC. TYPE	MEDIUM	LATEST REVISION	SIZE	ISSUE QUANTITY & REVISION NUMBER																	
DISCLAIMER:	*PARTIES TO WHOM THESE DOCUMENTS ARE ISSUED MUST ENSURE THAT ALL COPIES OF THE PREVIOUS REVISIONS ARE DESTROYED (IF DRAWINGS ON SITE) OR SUPERSEDED APPROPRIATELY IF FILED FOR RECORD KEEPING OR CO-ORDINATION PURPOSES*					QTY	REV	QTY	REV	QTY	REV	QTY	REV	QTY	REV	QTY	REV	QTY	REV	QTY	REV	QTY	REV
TCE-1238B-DD-EE-101	Ga-Phasha High level Reticulation Layout	DRAWING	ELECTRONIC	A	A0	1	A																
TCE-1238B-DD-EE-201	Ga-Phasha Lighting Layout (Skills Development centre)	DRAWING	ELECTRONIC	A	A0	1	A																
TCE-1238B-DD-EE-202	Ga-Phasha Lighting Layouts (Guard House)	DRAWING	ELECTRONIC	A	A0	1	A																
TCE-1238B-DD-EE-203	Ga-Phasha Power Layout (Skills Development Centre)	DRAWING	ELECTRONIC	A	A1	1	A																
TCE-1238B-DD-EE-204	Ga-Phasha Power Layouts (Guard House & Simulation Shed)	DRAWING	ELECTRONIC	A	A1	1	A																
TCE-1238B-DD-EE-301	Ga-Phasha Distribution Kiosk Single Line Diagram	DRAWING	ELECTRONIC	A	A1	1	A																
TCE-1238B-DD-EE-302	Ga-Phasha Main DB Single Line Diagram (DB-Main)	DRAWING	ELECTRONIC	A	A1	1	A																
TCE-1238B-DD-EE-303	Ga-Phasha Guard House Single Line Diagram (DB-GH)	DRAWING	ELECTRONIC	A	A1	1	A																
TCE-1238B-DD-EE-304	Ga-Phasha Simulation Shed Single Line Diagram (DB-SS)	DRAWING	ELECTRONIC	A	A1	1	A																
TCE-1238B-DD-EE-401	Ga-Phasha Lightning Protection Layouts	DRAWING	ELECTRONIC	A	A1	1	A																
TCE-1238B-DD-EE-402	Ga-Phasha Lightning Protection Layouts (Guard House)	DRAWING	ELECTRONIC	A	A1	1	A																

BY SIGNING ACCEPTANCE FOR THESE DOCUMENTS YOU ARE CONFIRMING COMPLIANCE AND AGREEMENT WITH THE DISCLAIMER ABOVE REGARDING REVISION CONTROL

RECEIVED BY:		SIGNATURE:		DATE:	

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MULTI-DISCIPLINED CONSULTING ENGINEERS and PROJECT MANAGERS

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CONSOLIDATED DRAWING REGISTER AND DISTRIBUTION LOG

ISSUE LOG SHEET 1 OF 1

PROJECT DESCRIPTION :	GA-PHASHA SETA SKILLS DEVELOPMENT CENTRE MECHANICAL SERVICES	ISSUED TO:	TENDERER
PURPOSE OF ISSUE :	TENDER	FOR ATTENTION:	TENDERER
PROJECT NO. :	TCE 1238		
ISSUE DATE :	Tuesday, 26 November 2024	Day	26
ISSUED BY :	J Binda	Month	11
NOTES :	DRAWINGS FOR TENDER PURPOSES	Year	2024

DISCLAIMER: *PARTIES TO WHOM THESE DOCUMENTS ARE ISSUED MUST ENSURE THAT ALL COPIES OF THE PREVIOUS REVISIONS ARE DESTROYED (IF DRAWINGS ON SITE) OR SUPERSEDED APPROPRIATELY IF FILED FOR RECORD KEEPING OR CO-ORDINATION PURPOSES*

DOCUMENT NO.	DESCRIPTION	DOC. TYPE	MEDIUM	LATEST REVISION	SIZE	ISSUE SET & DATE 1 QTY	1 REV	2 QTY	2 REV	3 QTY	3 REV	4 QTY	4 REV	5 QTY	5 REV	6 QTY	6 REV	7 QTY	7 REV	8 QTY	8 REV	9 QTY	9 REV	10 QTY	10 REV
TCE-1238-PD-M-AC-101	HEATING, VENTILATION & AIR-CONDITIONING LAYOUT	DRAWING	ELECTRONIC	A	A0	1	A																		
TCE-1238-PD-M-F-403	FIRE SITE PLAN	DRAWING	ELECTRONIC	A	A0	1	A																		
TCE-1238-PD-M-F-404	FIRE PROTECTION LAYOUT	DRAWING	ELECTRONIC	A	A0	1	A																		

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TCE-1238B

ALL DIMENSIONS AND HEIGHTS ARE TO BE CHECKED ON SITE BEFORE WORK IS PUT IN HAND.
ALL WORK AND MATERIAL ARE TO COMPLY TO RELEVENT SABS CODES WHERE APPLICABLE.
BRAND NAMES DENOTE SIMILAR OR EQUALY APPROVED.
ALL WORK TO BE IN ACCORDANCE TO N.R.B.
REPORT DISCREPANCIES TO ARCHITECT OR ENGINEER.

ELECTRICAL LEGEND

- ELECTRICAL DISTRIBUTION BOARD
- 3PH ISOLATOR (IP65 ENCLOSURE)
- INV — 5kVA SOLAR PV INVETOR
- OVER HEAD LINE POLE
- 22kV OVER HEAD LINE
- DK — DISTRIBUTION KIOSK
- 100kVA 22/0.4kV POLE MOUNTED TRANSFORMER
- HIGH MAST LIGHT
- 110mm uPVC SLEEVES

NOTES:

-

REV No	DATE	DESCRIPTION:
REVA	29/04/2024	ISSUED FOR TENDER

SIZE ON ORIGINAL DRAWING 100 mm

CLIENT LOGO

SERVICES SETA

PROJECT DETAILS

SKILLS DEVELOPMENT CENTRE
GA-PHASHA VILLAGE

CONTRACT No

DISCIPLINE

ELECTRICAL

DRAWING DESCRIPTION

SITE-RETICULATION-LAYOUT

DESIGNED BY	DRAWN BY	CHECKED BY
MN	MN	JB

DRAWING UNITS	MM	SCALE	1:150

RESPONSIBLE PROFESSIONAL

DATE	NAME	SIGNATURE	PR NUMBER
DATE	M NKGADIMA		20117030 6

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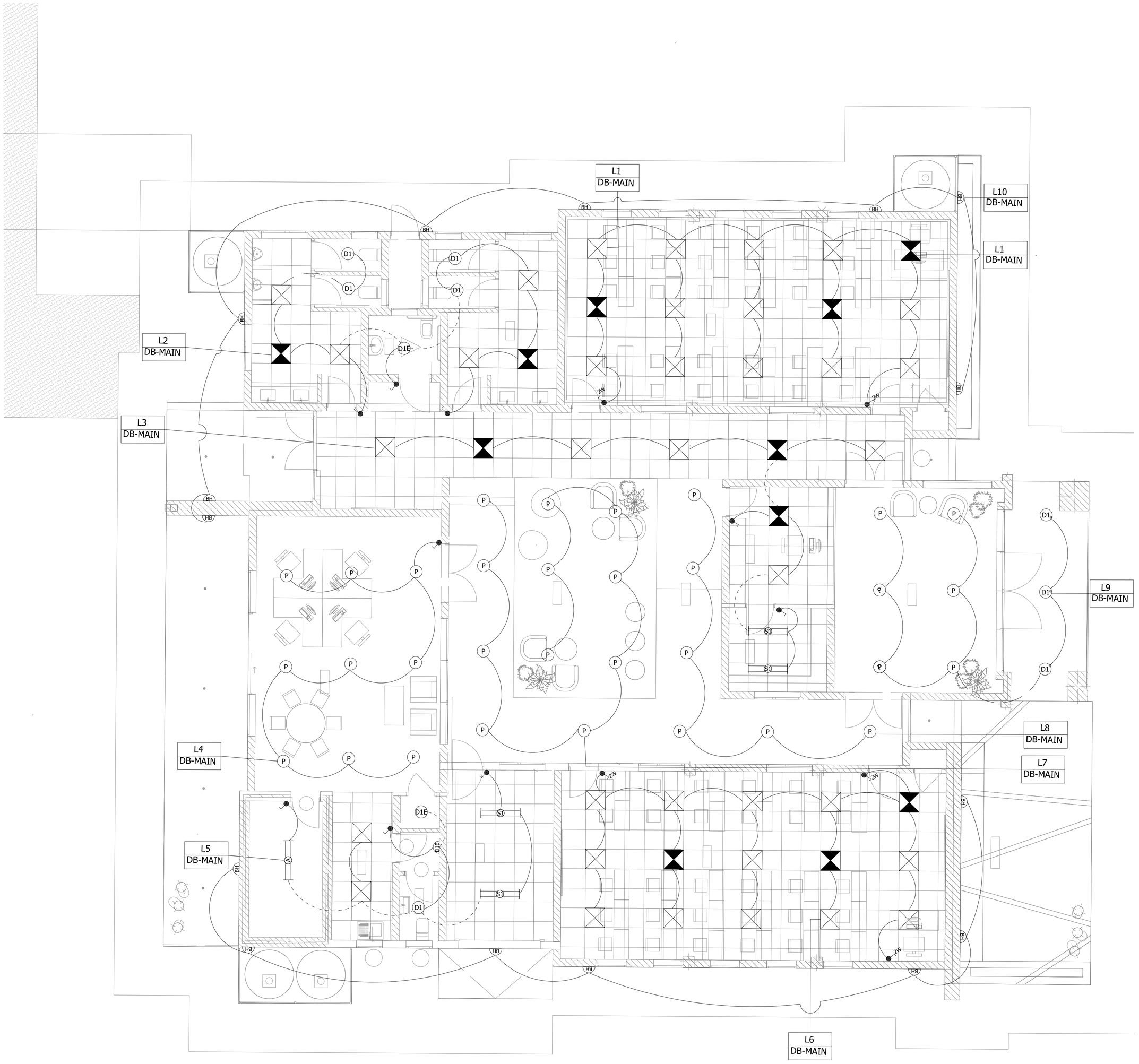
SIZE	DRAWING NUMBER	REV
A1	TCE1238B-DD-EE-101	A



ALL DIMENSIONS AND HEIGHTS ARE TO BE CHECKED ON SITE BEFORE WORK IS PUT IN HAND

TCE1238B

ALL WORK AND MATERIAL ARE TO COMPLY TO RELEVENT SABS CODES WHERE APPLICABLE.
BRAND NAMES DENOTE SIMILAR OR EQUALY APPROVED.
ALL WORK TO BE IN ACCORDANCE TO N.R.B.
REPORT DISCREPANCIES TO ARCHITECT OR ENGINEER.

- 39W LED 600 x 600 LIGHT FITTING COMPLETE WITH CABTREE AND DRIVE LIGHT EFFICACY 111.5 lm/W
- 39W LED 600 x 600 LIGHT FITTING COMPLETE WITH CABTREE AND DRIVE LIGHT EFFICACY 111.5 lm/W WITH 60MINUTES BATTERY BACKUP
- (P) 30W LED PENDANT LIGHT FITTING COMPLETE WITH POTHOOK AND A 3m CABLE LIGHT FITTING OF 57.2 lm/w
- (D1) 18W LED DOWNLIGHT COMPLETE WITH DRIVER AND CABTREE LIGHT EFFICACY OF 92.2lm/W
- (D1E) 18W LED DOWNLIGHT COMPLETE WITH DRIVER AND CABTREE LIGHT EFFICACY OF 92.2lm/W WITH 60MINUTES BATTERY BACKUP
- (D2) 18W LED WAL MOUNTED COMPLETE WITH DRIVER AND CABTREE LIGHT EFFICACY OF 92.2lm/W WITH (FOR INTERNAL USE)
- (BH) 26W LED BULKHEAD LIGHT FITTING
- (SD) 30W LED SURFACE MOUNTED VAPOUR PROOF LIGHT FITTING WITH EFFICACY OF 143lm/W

REV No	DATE	DESCRIPTION:
A	29-04-2024	ISSUED FOR TENDER

SIZE ON ORIGINAL DRAWING 100 mm

CLIENT LOGO

PROJECT DETAILS

SKILLS DEVELOPMENT CENTRE
GA-PHASHA VILLAGE

CONTRACT No

DISCIPLINE

ELECTRICAL

DRAWING DESCRIPTION

MAIN-BUILDING-LIGHTING-LAYOUT

DESIGNED BY	DRAWN BY	CHECKED BY
MN	MN	JB

DRAWING UNITS	MM	SCALE	1:50

RESPONSIBLE PROFESSIONAL

DATE	NAME	SIGNATURE	PR NUMBER
29-04-24	MNKGADIMA		201170306

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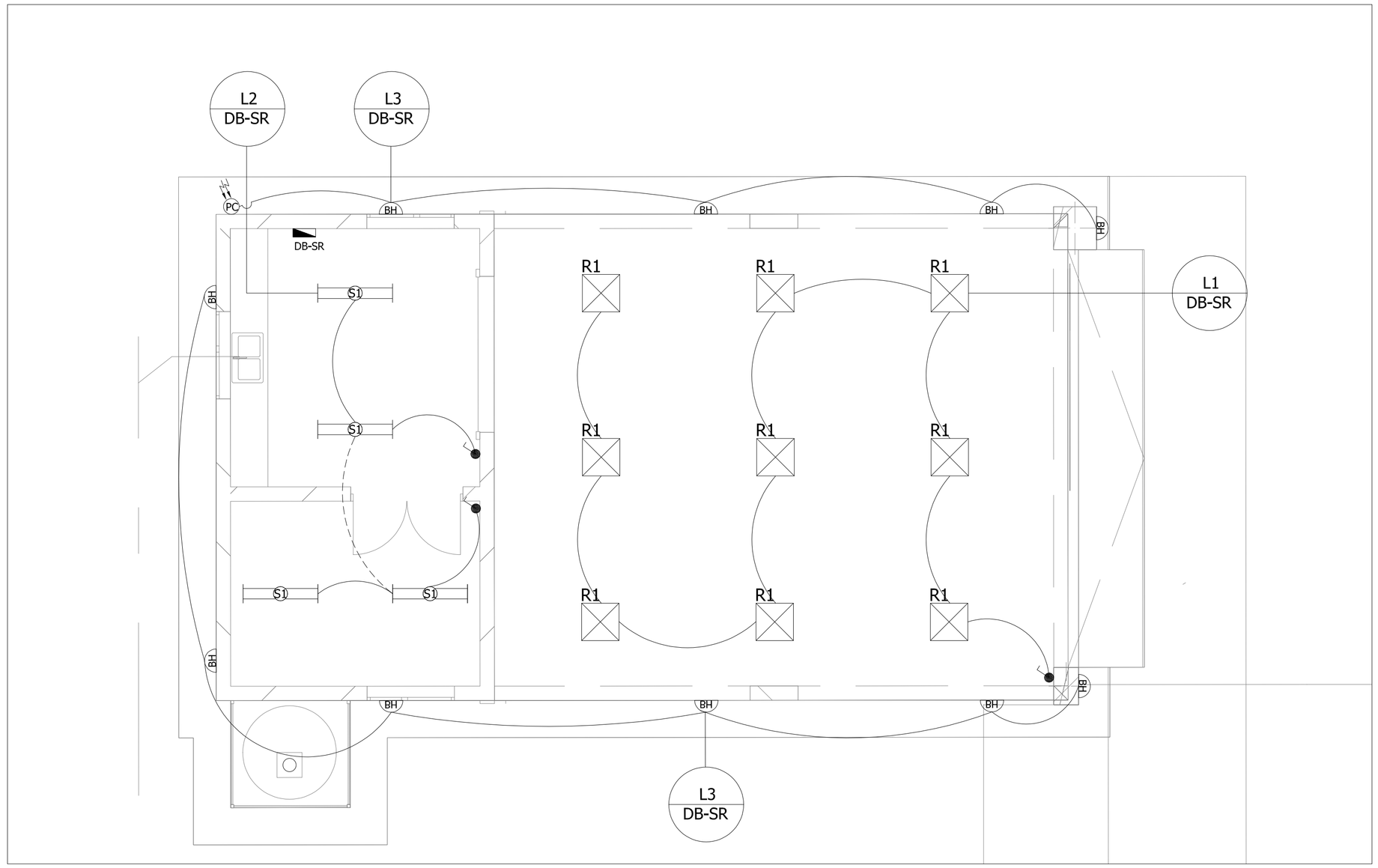
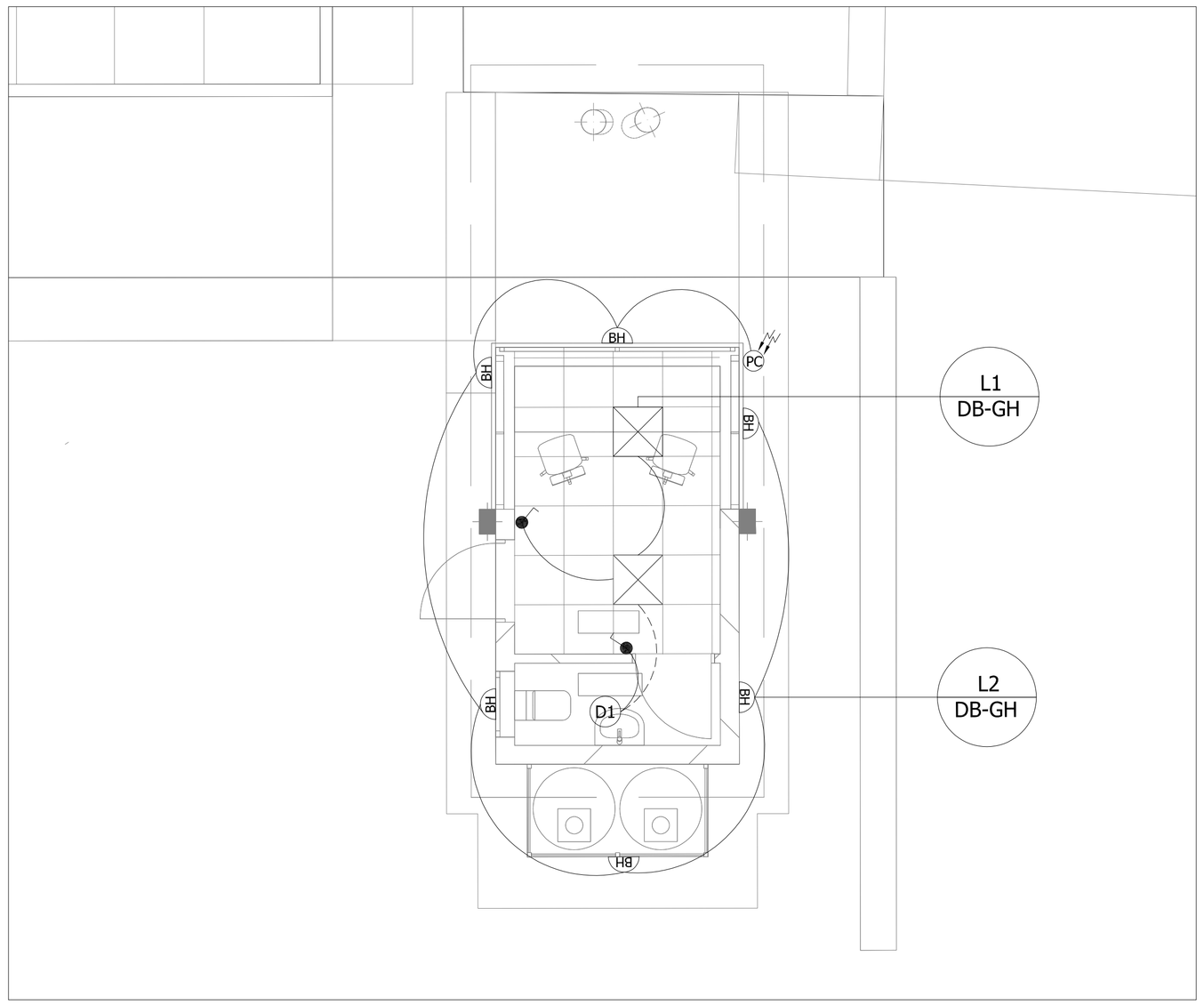
SIZE	DRAWING NUMBER	REV.
A1	TCE-1238B-DD-EE-201	A





TCE-1238B

ALL DIMENSIONS AND HEIGHTS ARE TO BE CHECKED ON SITE BEFORE WORK IS PUT IN HAND.
ALL WORK AND MATERIAL ARE TO COMPLY TO RELEVENT SABS CODES WHERE APPLICABLE.
BRAND NAMES DENOTE SIMILAR OR EQUALY APPROVED.
ALL WORK TO BE IN ACCORDANCE TO N.R.B.
REPORT DISCREPANCIES TO ARCHITECT OR ENGINEER.

ELECTRICAL LEGEND

- ELECTRICAL DISTRIBUTION BOARD
- RT — 39W LED 600 x 600 LIGHT FITTING COMPLETE WITH CABTREE AND DRIVE LIGHT EFFICACY 111.5 lm/W
- RTE — 39W LED 600 x 600 LIGHT FITTING COMPLETE WITH CABTREE AND DRIVE LIGHT EFFICACY 111.5 lm/W WITH 60MINUTES BATTERY BACKUP
- P — 30W LED PENDANT LIGHT FITTING COMPLETE WITH POTHOOK AND A 3m CABLE LIGHT FITTING OF 57.2 lm/w
- D1 — 18W LED DOWNLIGHT COMPLETE WITH DRIVER AND CABTREE LIGHT EFFICACY OF 92.5lm/W
- D1E — 18W LED DOWNLIGHT COMPLETE WITH DRIVER AND CABTREE LIGHT EFFICACY OF 92.5lm/W,WITH 60MINUTES BATTERY BACKUP
- D2 — 18W LED WAL MOUNTED COMPLETE WITH DRIVER AND CABTREE LIGHT EFFICACY OF 92.5lm/W,WITH (FOR INTERNAL USE)
- BH — 26W LED BULKHEAD LIGHT FITTING
- S1 — 30W LED SURFACE MOUNTED VAPOUR PROOF LIGHT FITTING WITH EFFICACY OF 148lm/W

REV No	DATE :	DESCRIPTION:
A	29-04-2024	ISSUED FOR TENDER

SIZE ON ORIGINAL DRAWING 100 mm

CLIENT LOGO

SERVICES SETA

PROJECT DETAILS

SKILLS DEVELOPMENT CENTRE

GA-PHASHA VILLAGE

CONTRACT No

DISCIPLINE

ELECTRICAL

DRAWING DESCRIPTION

SS-&-GH-LIGHTING-LAYOUT

DESIGNED BY	DRAWN BY	CHECKED BY
MN	JM	JB

DRAWING UNITS	MM	SCALE	1:50

RESPONSIBLE PROFESSIONAL

DATE	NAME	SIGNATURE	PR NUMBER
DATE	M. NKGADIMA		201170306

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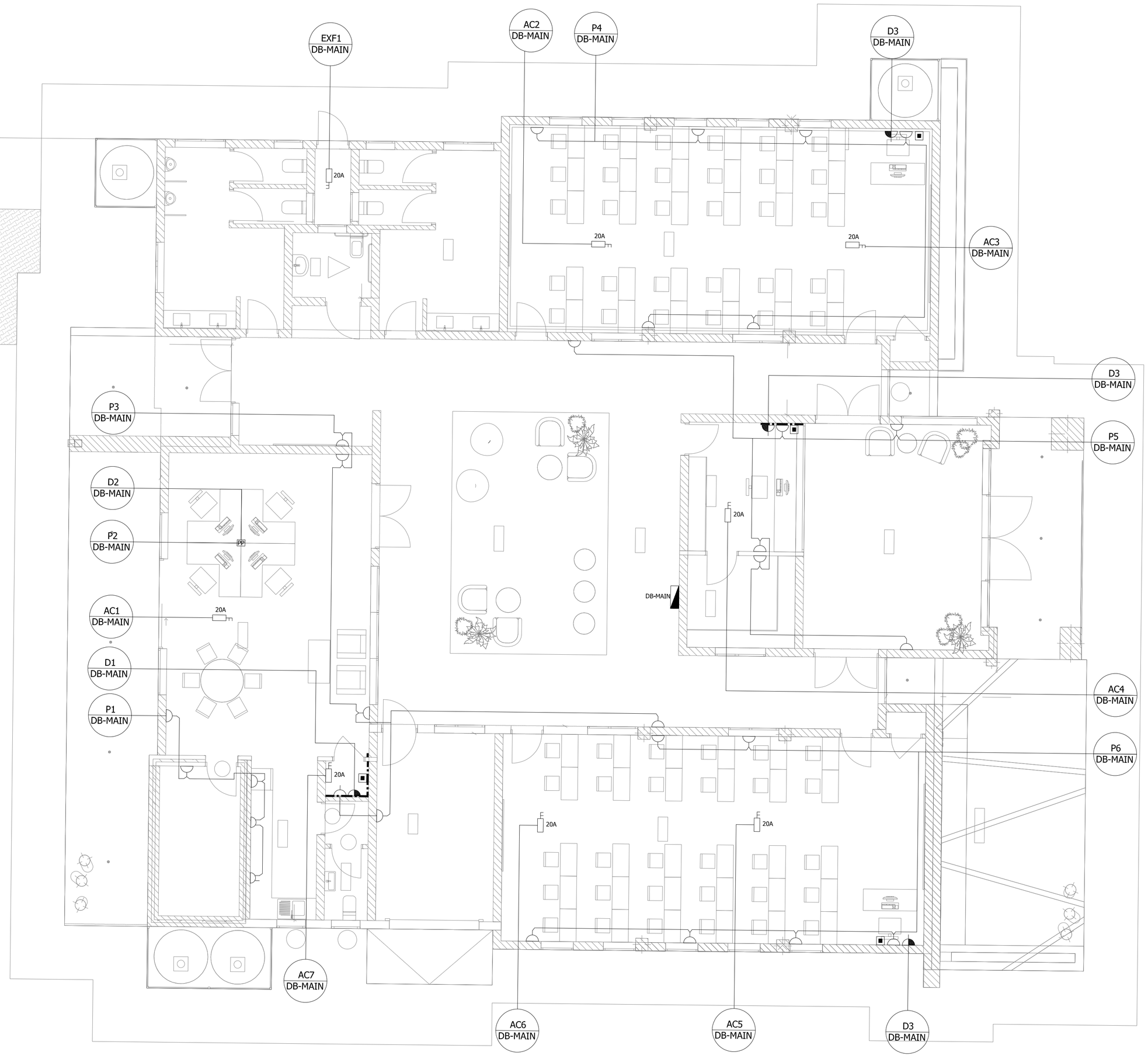
SIZE	DRAWING NUMBER	REV
A1	TCE-1238B-DD-EE-202	A



ALL DIMENSIONS AND HEIGHTS ARE TO BE CHECKED ON SITE BEFORE WORK IS PUT IN HAND

TCE-1238B

ALL WORK AND MATERIAL ARE TO COMPLY TO RELEVENT SABS CODES WHERE APPLICABLE.
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REPORT DISCREPANCIES TO ARCHITECT OR ENGINEER.

ELECTRICAL LEGEND

- ELECTRICAL DISTRIBUTION BOARD
- PP — POWER POLE PEDESTAL CONSISTS OF:
  - TELEPHONE OUTLET @300mm AFFL
  - DATA OUTLET @300mm AFFL
  - 16A 3-PIN DEDICATED SOCKET OUTLET @300mm AFFL
  - 16A 3-PIN NORMAL SOCKET OUTLET @300mm AFFL
- ZA — COMBINATION SWITCH SOCKET OUTLET c/w 1x NORMAL TRIANGULAR OUTLET & 1x 3-Pin C/W Earth Contact (Euro Socket) HEXAGONAL OUTLET @300mm AFFL
- ZA — 3-Pin C/W Earth Contact (Euro Socket) HEXAGONAL SWITCH SOCKET OUTLET & USB CHARGING PORT @1000mm AFFL (Above Counter Top)
- DOUBLE SWITCH SOCKET OUTLET @300mm AFFL
- DOUBLE SWITCH SOCKET OUTLET @1150mm AFFL
- WP — WEATHERPROOF SWITCH SOCKET OUTLET
- 16A 3-PIN DEDICATED SOCKET OUTLET @300mm AFFL
- PS D — DATA OUTLET IN POWERSKIRTING
- TELEPHONE OUTLET @300mm AFFL
- DATA OUTLET @300mm AFFL
- SINGLE PHASE ISOLATOR
- THREE PHASE ISOLATOR
- AC — AIR CONDITIONER CONTROL
- HEATER WITH 20A SINGLE ISOLATOR @ 300mm AFFL
- 3 COMPARTMENT POWERSKIRTING MOUNTED AT 300mm AFFL

REV No	DATE	DESCRIPTION
A	29-04-2024	ISSUED FOR TENDER

SIZE ON ORIGINAL DRAWING 100 mm

CLIENT LOGO

PROJECT DETAILS

SKILLS DEVELOPMENT CENTRE
GA-PHASHA VILLAGE

CONTRACT No

DISCIPLINE

ELECTRICAL

DRAWING DESCRIPTION

MAIN-BUILDING-POWER-LAYOUT

DESIGNED BY	DRAWN BY	CHECKED BY
MN	JM	JB

DRAWING UNITS	MM	SCALE	1:50

RESPONSIBLE PROFESSIONAL

DATE	NAME	SIGNATURE	PR NUMBER
29-04-24	M.NKGADIMA		201170306

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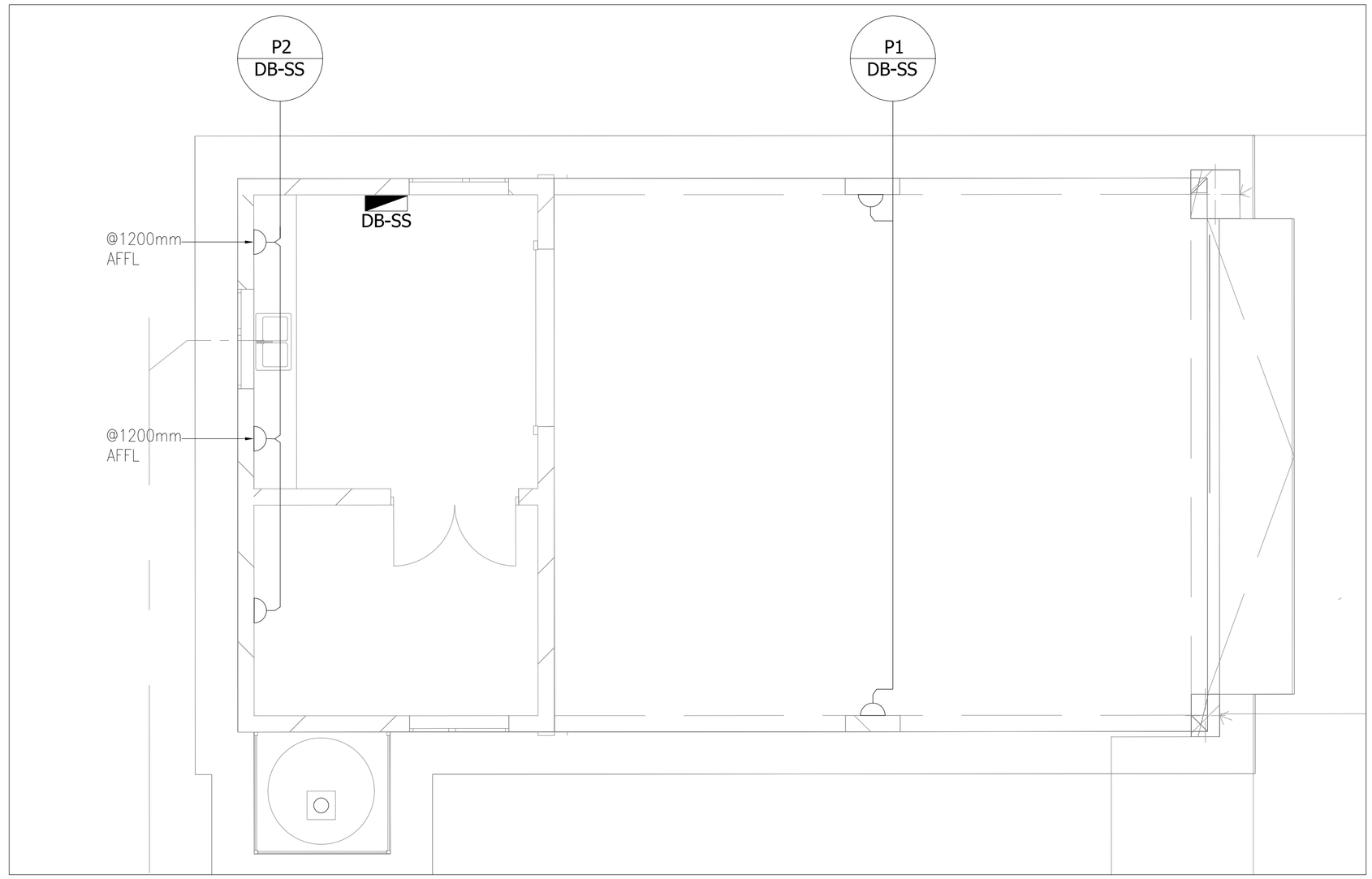
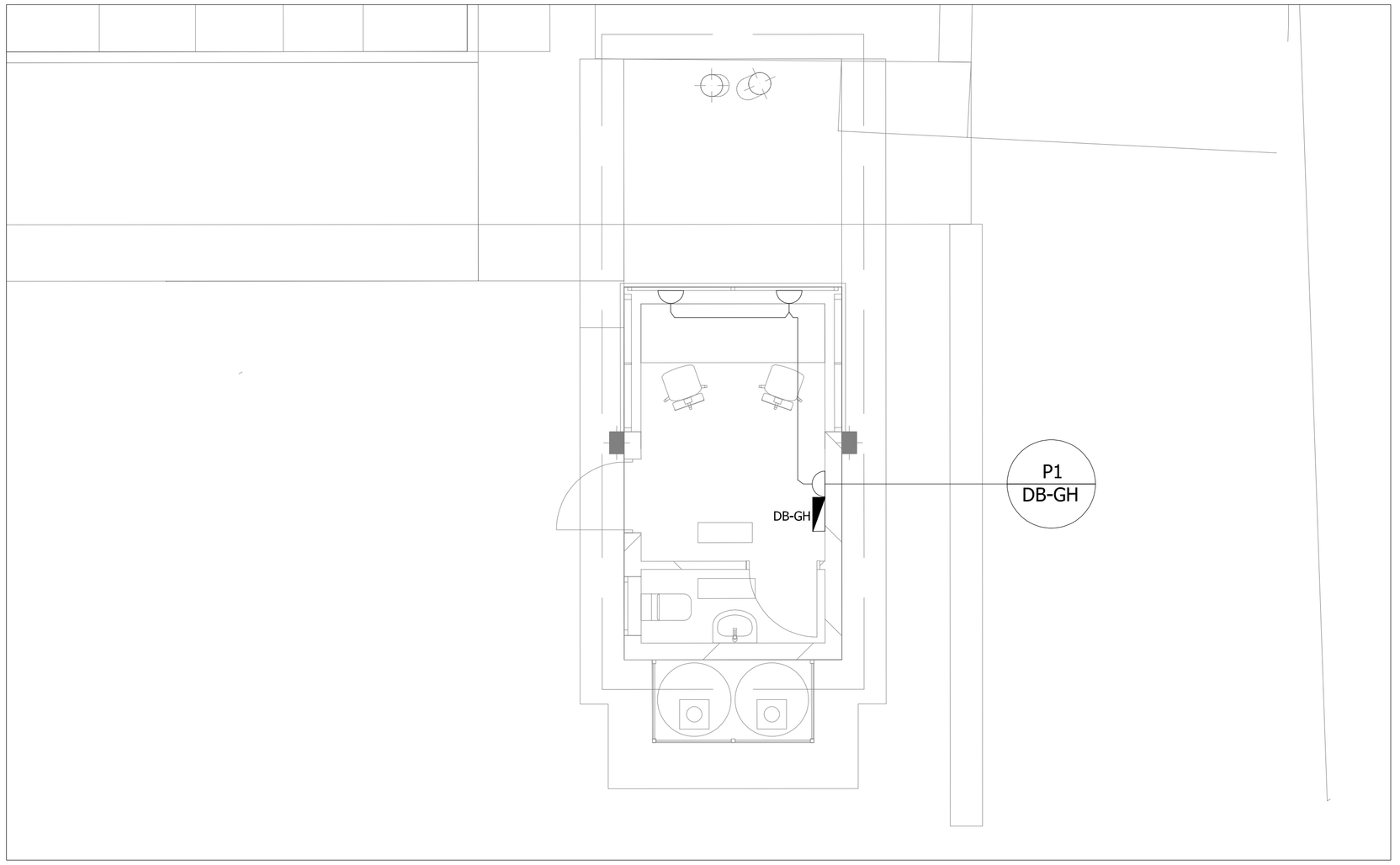
Telephone: 011 475 4560
Facsimile: 011 475 9140

SIZE	DRAWING NUMBER	REV
A1	TCE-1238B-DD-EE-203	A



SIMULATION SHED



GUARD HOUSE

TCE-1238B

ALL DIMENSIONS AND HEIGHTS ARE TO BE CHECKED ON SITE BEFORE WORK IS PUT IN HAND.
ALL WORK AND MATERIAL ARE TO COMPLY TO RELEVENT SABS CODES WHERE APPLICABLE.
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REPORT DISCREPANCIES TO ARCHITECT OR ENGINEER.

ELECTRICAL LEGEND

ELECTRICAL DISTRIBUTION BOARD

16A 3-PIN NORMAL SOCKET OUTLET @300mm AFFL

REV No	DATE	DESCRIPTION:
A	29-04-2024	ISSUED FOR TENDER

SIZE ON ORIGINAL DRAWING 100 mm

CLIENT LOGO

SERVICES SETA

PROJECT DETAILS

SKILLS DEVELOPMENT CENTRE

GA-PHASHA VILLAGE

CONTRACT No

DISCIPLINE

ELECTRICAL

DRAWING DESCRIPTION

SS-&-GH-POWER-LAYOUT

DESIGNED BY	DRAWN BY	CHECKED BY
MN	JM	JB

DRAWING UNITS	MM	SCALE	1:50

RESPONSIBLE PROFESSIONAL

DATE	NAME	SIGNATURE	PR NUMBER
29-04-24	M. NKGADIMA		201170306

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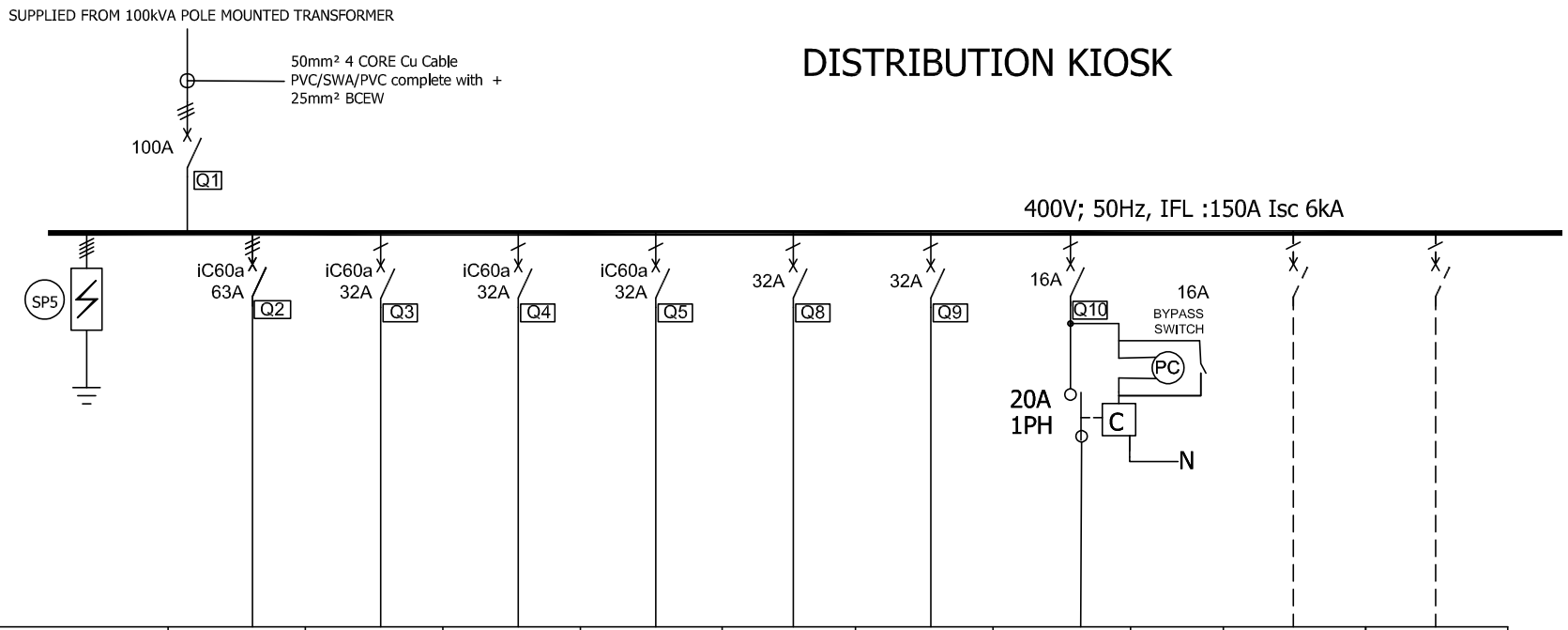
SIZE	DRAWING NUMBER	REV
A1	TCE-1238B-DD-EE-204	A

DISTRIBUTION KIOSK

DISTRIBUTION KIOSK										
BUS RATING	150A									
FAULT LEVEL	6kA									
TYPE	Floor Standing	√	Surface Mounted		Recessed					
ACCESS	Front		Back		Both	√				
CABLE ENTRY	Top		Bottom	√	Both					
BUSBAR ENTRY	-		Bottom		Both					
CABLE EXIT	Top		Bottom	√	Both					
CONSTRUCTION	With Doors		No Doors		Lockable Doors	√				
	Form of Separation	FORM 1								
LIMITING DIMS	1000mm (W); 600mm(D); 1500mm(H)									
COLOUR	Frame	TBC			Normal Panel		TBC			
	UPS Panels	-			Emergency Panel		-			
SWITCHGEAR	Manufacturer	Schneider or similar & equivalent								
	Type	Switchgear to be of fixed type								
		MCCBs: MCBs and Isolators								
PROTECTION	No Cascading		√	Cascading Warning Label						
METER	KWh meter									
OTHER	Door to be fitted with viewing window									
SPARE SPACE	20%									
IP	65									



CIRCUIT NUMBERING	Main DB	DB - SR	DB - GH	DB - HALL	SEWER PUMP	WATER PUMP	HIGH MAST		WORKSHOP (FUTURE)	WORKSHOP (FUTURE)
LOAD (kW)	32.2	6.2	3.1	1.13	1.5	1.5	1.2		-	-
CONDUCTOR /CABLE (mm²)	C-16	C-10	C-10	C-6	C-4	C-4	C-4		-	-
PHASE BALANCING	R;W;B	R	W	B	R;W;B	R;W;B	B		R;W;B	R;W;B
CIRCUIT DESCRIPTION	FEEDER		FEEDER		PLANT SUPPLY		LIGHTING		FUTURE	

TCE-1238B

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REPORT DISCREPANCIES TO ARCHITECT OR ENGINEER.

LEGEND:

- MINATURE CIRCUIT BREAKER / MOULDED CASE CIRCUIT BREAKER
- ISOLATOR
- FUSE SWITCH
- TIME-SWITCH WITH BYPASS SWITCH
- EARTH LEAKAGE
- MASTER SWITCH
- CONTACTOR
- EM — ELECTRONIC METER
- PC — PHOTOCELL
- OVERRIDE ROTARY SWITCH
- SP4 — CLASS 2 PROTECTION, NORTHERN TECHNOLOGIES SAD20PR WITH O/C PROTECTION CB
- SP5 — DEHNVENTI M TNS 255

NOTE:
1. C - X mm² - CABLE SUPPLY

REV No	DATE :	DESCRIPTION:
REVA	29/04/2024	ISSUED FOR TENDER

SIZE ON ORIGINAL DRAWING 100 mm

CLIENT LOGO

SERVICES SETA

PROJECT DETAILS

SKILLS DEVELOPMENT CENTRE
GA-PHASHA VILLAGE

CONTRACT No

DISCIPLINE

ELECTRICAL

DRAWING DESCRIPTION

DISTRIBUTION-KIOSK-SINGLE-LINE-DIAGRAM

DESIGNED BY	DRAWN BY	CHECKED BY
MN	MN	JB

DRAWING UNITS	-	SCALE	N.T.S

RESPONSIBLE PROFESSIONAL

DATE	NAME	SIGNATURE	PR NUMBER
29-04-2024	M. NKGADIMA		201170306

Thembakele CONSULTING ENGINEERS (PTY) LTD

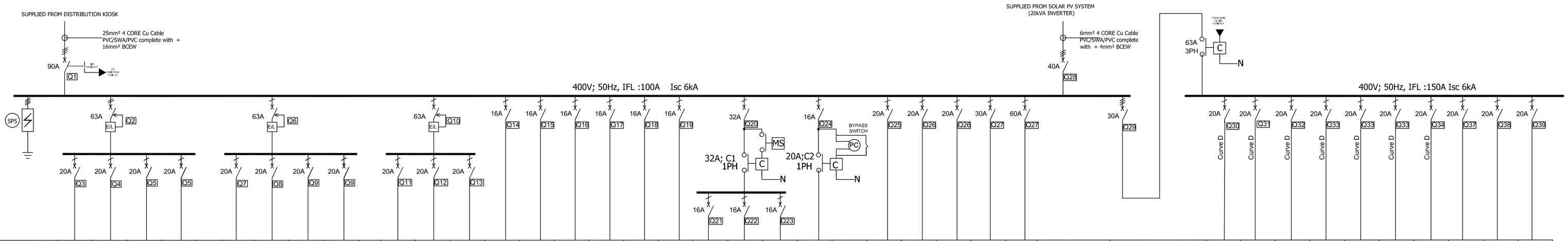
UNIT 6,
GARDENS BUSINESS PARK
ATELJEE STREET
RANDPARK RIDGE
2156

Web address: www.thembakele.co.za
Telephone: 011 475 4560
Facsimile: 011 475 9140

SIZE	DRAWING NUMBER	REV
A3	TCE1238B-DD-EE-301	A

MAIN BUILDING DB							
BUS RATING	150A						
FAULT LEVEL	6kA						
TYPE	Floor Standing		Surface Mounted		Recessed	√	
ACCESS	Front	√	Back		Both		
CABLE ENTRY	Top		Bottom		Both	√	
BUSBAR ENTRY	-		Bottom		Both		
CABLE EXIT	Top		Bottom		Both	√	
CONSTRUCTION	With Doors		No Doors		Lockable Doors	√	
	Form of Separation	FORM 1					
LIMITING DIMS	1000mm (W); 400mm(D); 1200mm(H)						
COLOUR	Frame	ORANGE		Normal Panel	WHITE		
	UPS Panels	-		Emergency Panel	-		
SWITCHGEAR	Manufacturer	Schneider or similar & equivalent					
	Type	Switchgear to be of fixed type					
		MCCBs; MCBs and Isolators					
PROTECTION	No Cascading		√	Cascading Warning Label			
METER	NO						
OTHER	-						
SPARE SPACE	20%						
IP	46						

DB-MAIN



CIRCUIT NUMBERING	P1	P2	P3	P4		P5	P6	P7	SP		SP	SP	SP	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10		D1	D2	D3	SP	SP	PV SUPPLY	NON-ESSENTIAL	AC1	AC2	AC3	AC4	AC5	AC6	AC7	SP	EXF1	EXF2
LOAD (kW)	1.5	1.4	1.5	1.1		1.8	1.5	1.2	-		-	-	-	0.5	0.35	0.24	0.27	0.23	0.5	0.27	0.21	0.4	0.39		1.4	1.4	1.4	-	-	15	16	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	0.25	0.25
CONDUCTOR /CABLE (mm²)	4	4	4	4		4	4	4	-		-	-	-	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		4	4	4	-	-	C-6	10	4	4	4	4	4	4	4		4	4
PHASE BALANCING	R	R	R	R		W	W	W	W		B	B	B	R	W	B	R	W	B	R	R	R	W		W	W	W	-	-	R;W;B	R;W;B	B	B	R	W	B	R	W	B	R	W
CIRCUIT DESCRIPTION	NORMAL SSO					NORMAL SSO					NORMAL SSO			LIGHTING			LIGHTING			LIGHTING				FEEDER TO GH					SUPPLY FROM PV	NON-ESSENTIAL SECTION	GEYSER	AIR CONDITIONER						EXTRACTION FAN	

TCE-1238B

ALL DIMENSIONS AND HEIGHTS ARE TO BE CHECKED ON SITE BEFORE WORK IS PUT IN HAND.
ALL WORK AND MATERIAL ARE TO COMPLY TO RELEVENT SABS CODES WHERE APPLICABLE,
BRAND NAMES DENOTE SIMILAR OR EQUALY APPROVED.
ALL WORK TO BE IN ACCORDANCE TO NRB.
REPORT DISCREPANCIES TO ARCHITECT OR ENGINEER.

LEGEND:

- MINATURE CIRCUIT BREAKER / MOULDED CASE CIRCUIT BREAKER
- ISOLATOR
- FUSE SWITCH
- TIME-SWITCH WITH BYPASS SWITCH
- EARTH LEAKAGE
- MASTER SWITCH
- CONTACTOR
- EM ELECTRONIC METER
- PC PHOTOCELL
- OVERRIDE ROTARY SWITCH
- SP4 CLASS 2 PROTECTION, NORTHERN TECHNOLOGIES SAD20PR WITH O/C PROTECTION CB
- SP5 DEHNVENTI M TNS 255

NOTE:
1. C - X mm² - CABLE SUPPLY

REV No	DATE :	DESCRIPTION:
REVA	29/04/2024	ISSUED FOR TENDER

SIZE ON ORIGINAL DRAWING 100 mm

CLIENT LOGO

SERVICES SETA

PROJECT DETAILS

SKILLS DEVELOPMENT CENTRE
GA-PHASHA VILLAGE

CONTRACT No

DISCIPLINE

ELECTRICAL

DRAWING DESCRIPTION

MAIN-BUILDING-SINGLE-LINE-DIAGRAM

DESIGNED BY	DRAWN BY	CHECKED BY
MN	MN	JB

DRAWING UNITS	-	SCALE	N.T.S

RESPONSIBLE PROFESSIONAL

DATE	NAME	SIGNATURE	PR NUMBER
29-04-24	M. NKGADIMA		201170306

Thembakele CONSULTING ENGINEERS (PTY) LTD

UNIT 6,
GARDENS BUSINESS PARK
ATELJEE STREET
RANDPARK RIDGE
2156

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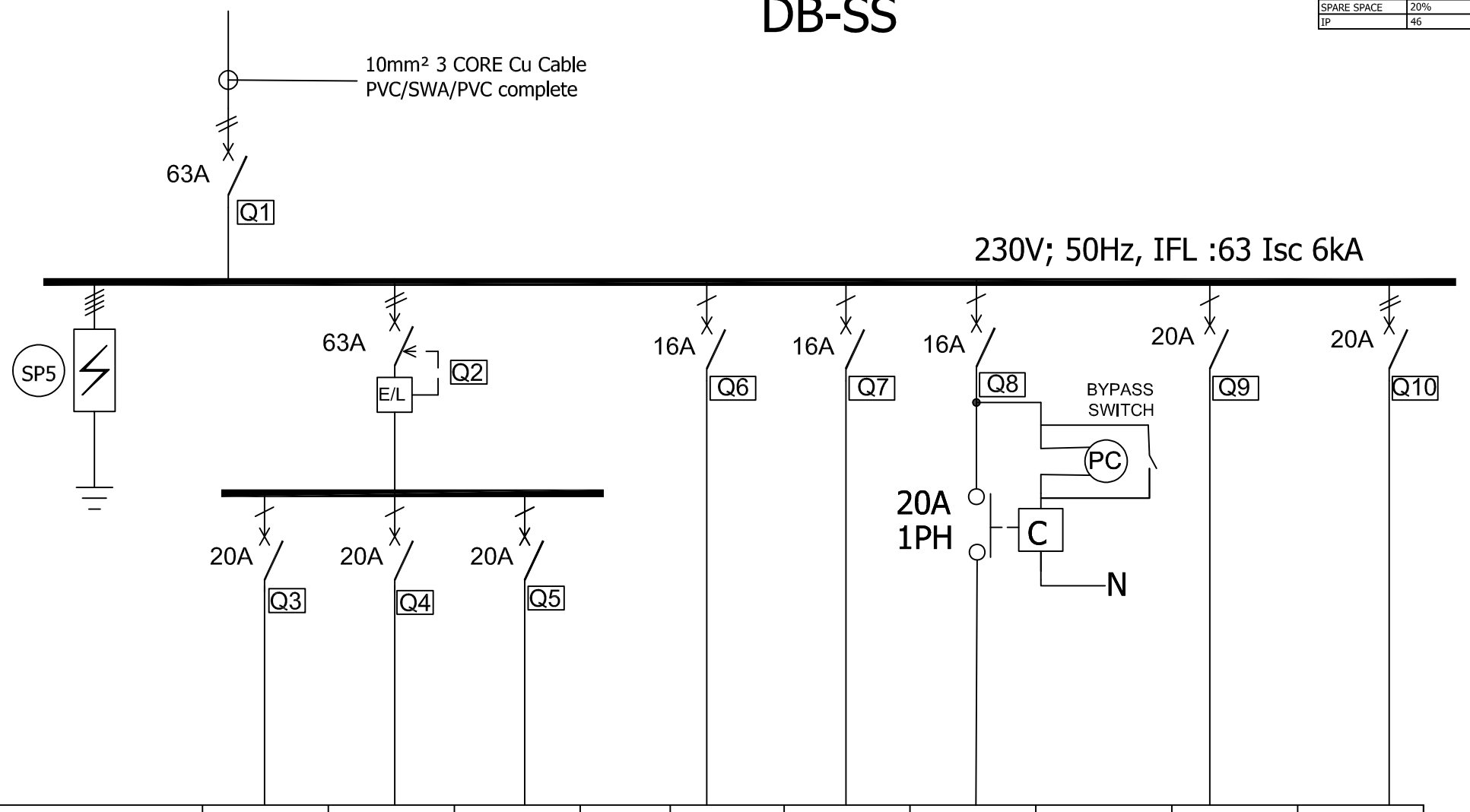
Facsimile: 011 475 9140

SIZE	DRAWING NUMBER	REV
A1	TCE1238B-DD-EE-302	A

DB-SS

SIMULATION SHED DB							
BUS RATING	63A						
FAULT LEVEL	6kA						
TYPE	Floor Standing		Surface Mounted		Recessed	✓	
ACCESS	Front	✓	Back		Both		
CABLE ENTRY	Top		Bottom		Both	✓	
BUSBAR ENTRY	-		Bottom		Both		
CABLE EXIT	Top		Bottom		Both	✓	
CONSTRUCTION	With Doors		No Doors		Lockable Doors	✓	
	Form of Separation	FORM 1					
LIMITING DIMS	600mm (W); 200mm(D); 1000mm(H)						
COLOUR	Frame	ORANGE		Normal Panel	WHITE		
	UPS Panels	-		Emergency Panel	-		
SWITCHGEAR	Manufacturer	Schneider or similar & equivalent					
	Type	Switchgear to be of fixed type					
		MCCBs; MCBs and Isolators					
PROTECTION	No Cascading		✓	Cascading Warning Label			
METER	NO						
OTHER	-						
SPARE SPACE	20%						
IP	46						

SUPPLIED FROM DISTRIBUTION KIOSK



CIRCUIT NUMBERING	P1	P2	SP		L1	L2	L3		SP	SP
LOAD (kW)	0.7	1.05	-		0.28	0.12	0.26		-	-
CONDUCTOR /CABLE (mm²)	4	4	-		2.5	2.5	-		-	-
PHASE BALANCING	R	R	R		R	R	R		R	R
CIRCUIT DESCRIPTION	NORMAL SSO				LIGHTING				SPARE	

TCE-1238B

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REPORT DISCREPANCIES TO ARCHITECT OR ENGINEER.

LEGEND:

- MINATURE CIRCUIT BREAKER / MOULDED CASE CIRCUIT BREAKER
- ISOLATOR
- FUSE SWITCH
- TIME-SWITCH WITH BYPASS SWITCH
- EARTH LEAKAGE
- MASTER SWITCH
- CONTACTOR
- ELECTRONIC METER
- PHOTOCELL
- OVERRIDE ROTARY SWITCH
- SP4 CLASS 2 PROTECTION. NORTHERN TECHNOLOGIES SAD20PR WITH O/C PROTECTION CB
- SP5 DEHNVENTI M TNS 255

NOTE:
1. C - X mm² - CABLE SUPPLY

REV No	DATE :	DESCRIPTION:
REVA	29/04/2024	ISSUED FOR TENDER

SIZE ON ORIGINAL DRAWING 100 mm

CLIENT LOGO

SERVICES SETA

PROJECT DETAILS

SKILLS DEVELOPMENT CENTRE
GA-PHASHA VILLAGE

CONTRACT No

DISCIPLINE

ELECTRICAL

DRAWING DESCRIPTION

SIMULATION-SHED-SINGLE-LINE-DIAGRAM

DESIGNED BY	DRAWN BY	CHECKED BY
MN	MN	JB

DRAWING UNITS	-	SCALE	N.T.S

RESPONSIBLE PROFESSIONAL

DATE	NAME	SIGNATURE	PR NUMBER
29-04-24	M. NKGADIMA		201170306

Thembakele CONSULTING ENGINEERS (PTY) LTD

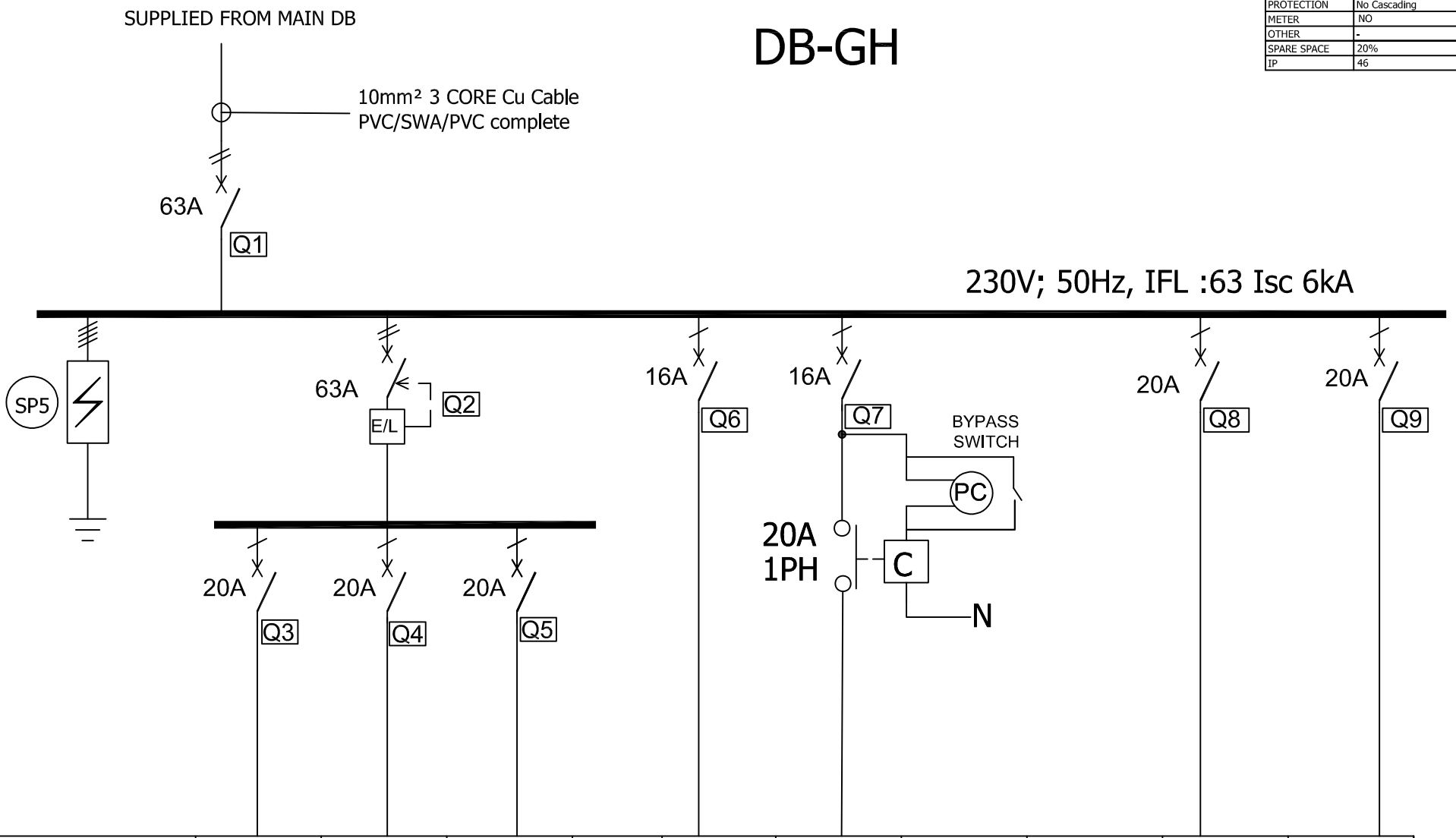
UNIT 6,
GARDENIS BUSINESS PARK
ATELJEE STREET
RANDPARK RIDGE
2156

Web address: www.thembakele.co.za
Telephone: 011 475 4560
Facsimile: 011 475 9140

SIZE	DRAWING NUMBER	REV
A3	TCE1238B-DD-EE-303	A

DB-GH

GUARD HOUSE DB						
BUS RATING	63A					
FAULT LEVEL	6kA					
TYPE	Floor Standing		Surface Mounted		Recessed	✓
ACCESS	Front	✓	Back		Both	
CABLE ENTRY	Top		Bottom		Both	✓
BUSBAR ENTRY	-		Bottom		Both	
CABLE EXIT	Top		Bottom		Both	✓
CONSTRUCTION	With Doors		No Doors		Lockable Doors	✓
	Form of Separation	FORM 1				
LIMITING DIMS	600mm (W); 200mm(D); 1000mm(H)					
COLOUR	Frame	ORANGE	Normal Panel	WHITE		
	UPS Panels	-	Emergency Panel	-		
SWITCHGEAR	Manufacturer	Schneider or similar approved				
	Type	Switchgear to be of fixed type				
		MCCBs; MCBs and Isolators				
PROTECTION	No Cascading		✓ Cascading Warning Label			
METER	NO					
OTHER	-					
SPARE SPACE	20%					
IP	46					



CIRCUIT NUMBERING	P1	SP	SP		L1	L2			Gate Motor	SP
LOAD (kW)	1.05	-	-		0.1	0.16			1.5	-
CONDUCTOR /CABLE (mm²)	4	-	-		2.5	2.5			4	-
PHASE BALANCING	W	W	W		W	W			W	
CIRCUIT DESCRIPTION	NORMAL SSO				LIGHTING					

TCE-1238B

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LEGEND:

- MINIATURE CIRCUIT BREAKER / MOULDED CASE CIRCUIT BREAKER
- ISOLATOR
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- EARTH LEAKAGE
- MASTER SWITCH
- CONTACTOR
- EM — ELECTRONIC METER
- PC — PHOTOCELL
- OVERRIDE ROTARY SWITCH
- SP4 — CLASS 2 PROTECTION. NORTHERN TECHNOLOGIES SAD20PR WITH O/C PROTECTION CB
- SP5 — DEHN/VENTI M TNS 255

NOTE:
1. C - X mm² - CABLE SUPPLY

REV No	DATE :	DESCRIPTION:
REVA	29/04/2024	ISSUED FOR TENDER

SIZE ON ORIGINAL DRAWING 100 mm

CLIENT LOGO

SERVICES SETA

PROJECT DETAILS
SKILLS DEVELOPMENT CENTRE
GA-PHASHA VILLAGE

CONTRACT No

DISCIPLINE
ELECTRICAL

DRAWING DESCRIPTION
GUARD-HOUSE-SINGLE-LINE-DIAGRAM

DESIGNED BY	DRAWN BY	CHECKED BY
MN	MN	JB

DRAWING UNITS	-	SCALE	N.T.S

RESPONSIBLE PROFESSIONAL

DATE	NAME	SIGNATURE	PR NUMBER
29-04-24	M. NKGADIMA		201170306

Thembakele CONSULTING ENGINEERS (PTY) LTD
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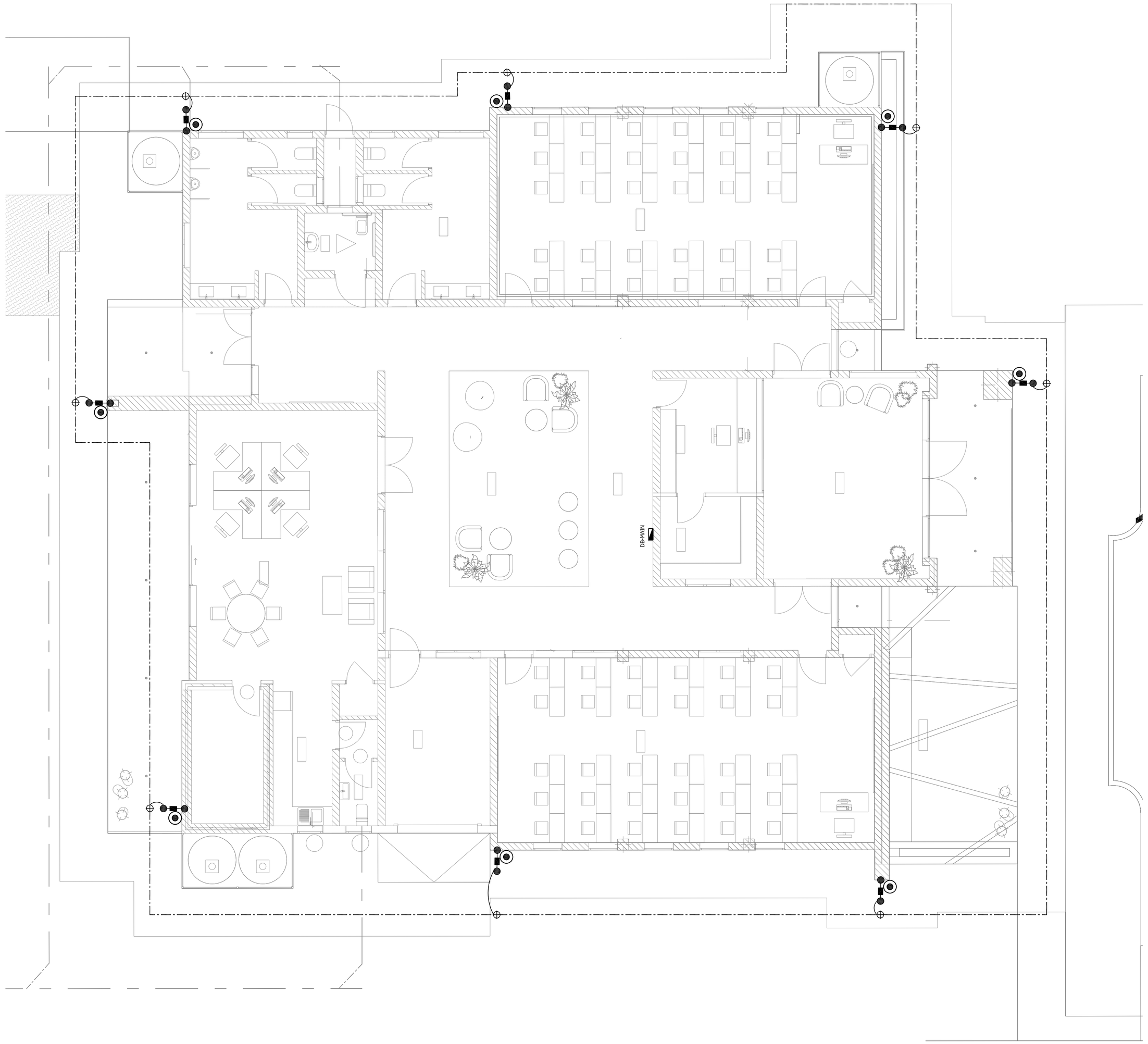
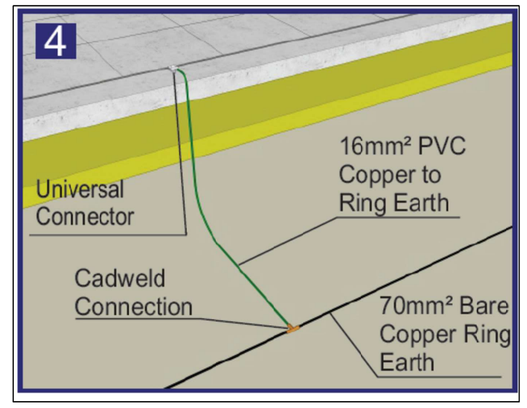
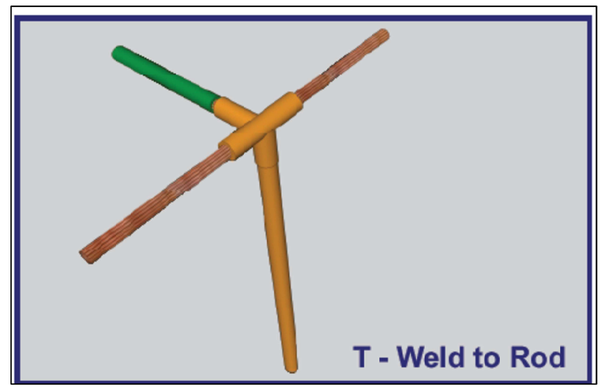
ATELIER STREET
RANDPARK RIDGE
2156
Web address: www.thembakele.co.za
Telephone: 011 475 4560
Facsimile: 011 475 9140

SIZE	DRAWING NUMBER	REV
A3	TCE1238B-DD-EE-304	A

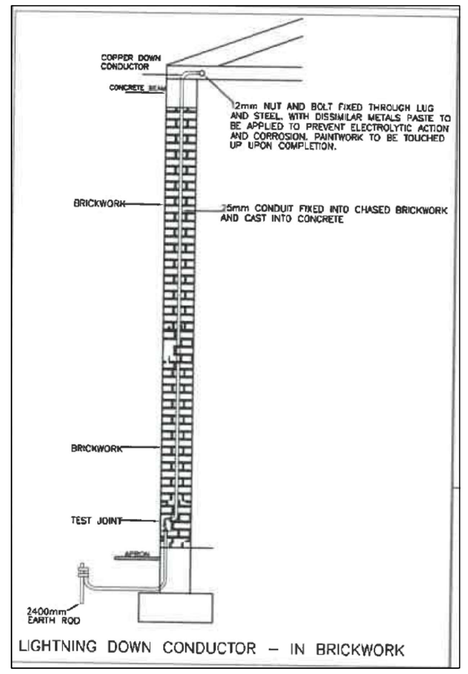




EXAMPLE OF A CADWELD



EXAMPLE OF A T WELDED ROD



EXAMPLE OF A DOWN CONDUCTOR

ALL DIMENSIONS AND HEIGHTS ARE TO BE CHECKED ON SITE BEFORE WORK IS PUT IN HAND

TCE-1238B

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REPORT DISCREPANCIES TO ARCHITECT OR ENGINEER.

LEGEND

- 1m STAINLESS STEEL FINIAL (AIR TERMINAL
- COPPER DOWN CONDUCTOR
- ALUMINIUM CONDUCTOR ø8mm (50mm²) FIXED ONTO CONDUCTOR HOLDER
- 70mm² BCEW BURRIED @ 500mm BELOW GROUND LEVEL. THE CONDUCTOR SHALL BE 1000mm AWAY FROM THE EDGE OF THE BUILDING.
- 16mm VERTICALLY DRIVEN 2.4m EXTENSIBLE EARTH ROD
- CAD WELD CONNECTION
- CAD WELD CONNECTION
- CAD WELD CONNECTION

NOTES:

1. EARTHING AND LIGHTNING PROTECTION SHALL BE IN ACCORDANCE WITH SANS 10313,PROTECTION AGAINST LIGHTING.
2. SHEET METAL ROOF STRUCTURE TO BE USED AS NATURAL AIR TERMINAL.
3. CAD WELDING METHOD SHALL BE USED IN ALL CONNECTION.
4. BONDING OF ISOLATED ROOF STRUCTURE TO BE ALLOWED FOR.
5. LIGHTNING PROTECTION CONDUCTOR TO BE INSTALLED ON THE APEX OF THE ROOF.

REV No	DATE	DESCRIPTION
A	29-04-2024	ISSUED FOR TENDER

SIZE ON ORIGINAL DRAWING 100 mm

CLIENT LOGO

SERVICES SETA

PROJECT DETAILS

SKILLS DEVELOPMENT CENTRE
GA-PHASHA VILLAGE

CONTRACT No

DISCIPLINE

ELECTRICAL

DRAWING DESCRIPTION

MAIN-BUILDING-LIGHTNING-PROTECTION

DESIGNED BY	DRAWN BY	CHECKED BY
MN	JM	JB

DRAWING UNITS	MM	SCALE	1:50

RESPONSIBLE PROFESSIONAL

DATE	NAME	SIGNATURE	PR NUMBER
29-04-24	M.NKGADIMA		201170306

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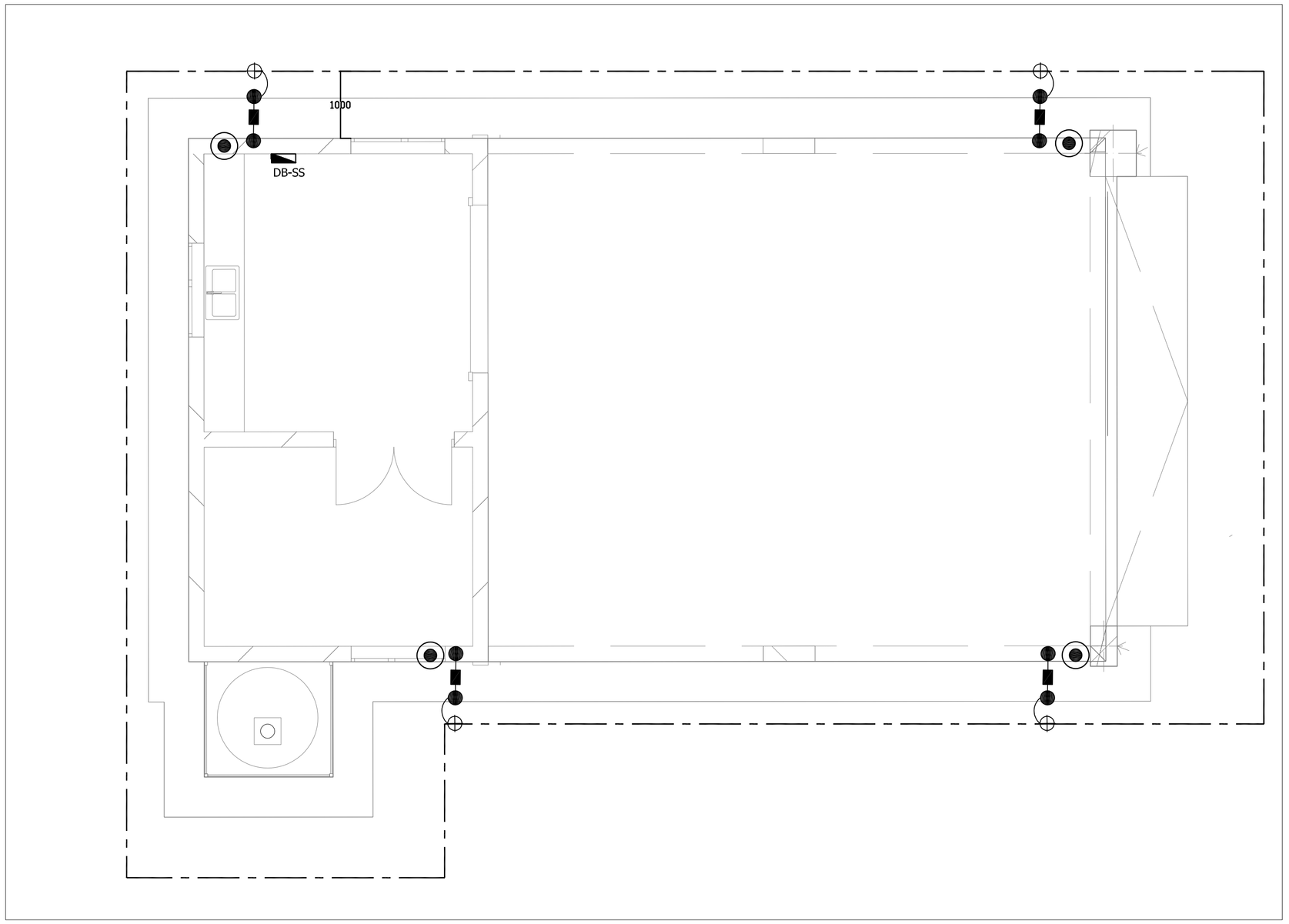
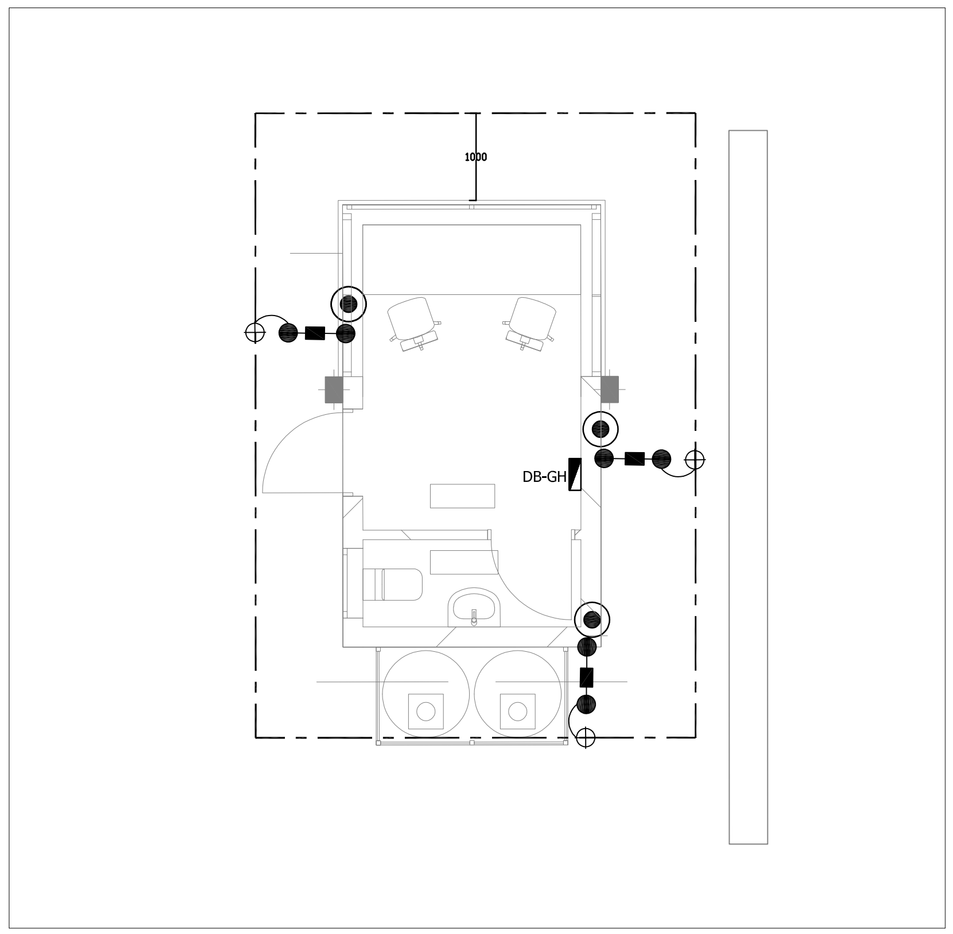
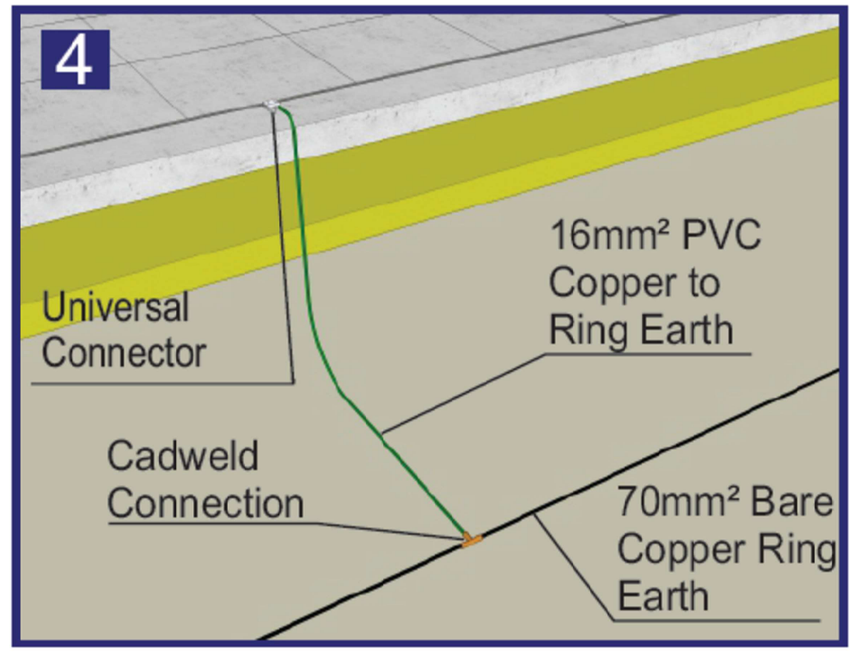
SIZE	DRAWING NUMBER	REV
A1	TCE-1238B-DD-EE-401	A



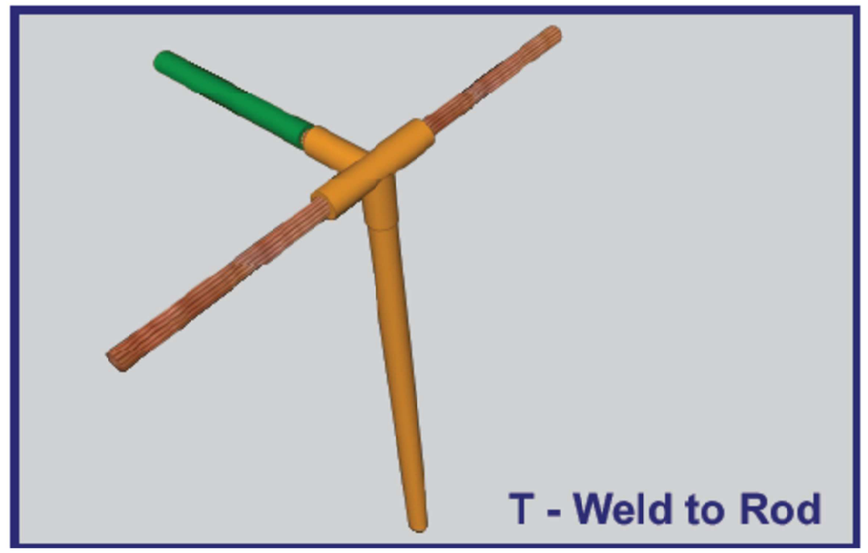
SIMULATION SHED EARTHING TERMINATION AND DOWN CONDUCTORS SYSTEMS



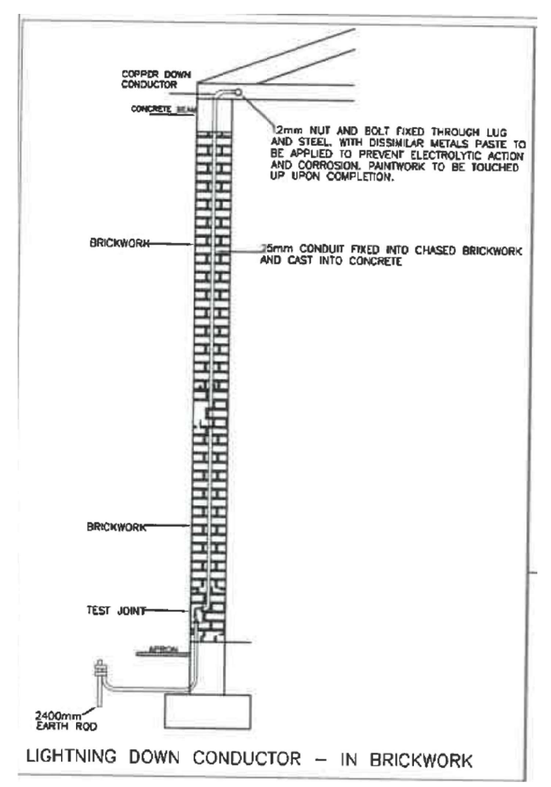
GUARD HOUSE EARTHING TERMINATION AND DOWN CONDUCTORS SYSTEMS



EXAMPLE OF A CADWELD



EXAMPLE OF A T WELDED ROD



EXAMPLE OF A DOWN CONDUCTOR

TCE-1238B

ALL DIMENSIONS AND HEIGHTS ARE TO BE CHECKED ON SITE BEFORE WORK IS PUT IN HAND.
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REPORT DISCREPANCIES TO ARCHITECT OR ENGINEER.

LEGEND

- 1m STAINLESS STEEL FINIAL (AIR TERMINAL
- COPPER DOWN CONDUCTOR
- ALUMINIUM CONDUCTOR ø8mm (50mm²) FIXED ONTO CONDUCTOR HOLDER
- 70mm² BCEW BURRIED @ 500mm BELOW GROUND LEVEL.THE CONDUCTOR SHALL BE 1000mm AWAY FROM THE EDGE OF THE BUILDING.
- 16mm VERTICALLY DRIVEN 2.4m EXTENSIBLE EARTH ROD
- CAD WELD CONNECTION
- CAD WELD CONNECTION
- CAD WELD CONNECTION

NOTES:

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REV No	DATE	DESCRIPTION
A	29-04-2024	ISSUED FOR TENDER

SIZE ON ORIGINAL DRAWING 100 mm

CLIENT LOGO

SERVICES SETA

PROJECT DETAILS

SKILLS DEVELOPMENT CENTRE

GA-PHASHA VILLAGE

CONTRACT No

DISCIPLINE

ELECTRICAL

DRAWING DESCRIPTION

GH-LIGHTNING-PROTECTION-LAYOUT

DESIGNED BY	DRAWN BY	CHECKED BY
MN	JM	JB

DRAWING UNITS	MM	SCALE	1:50

RESPONSIBLE PROFESSIONAL

DATE	NAME	SIGNATURE	PR NUMBER
29-04-24	M. NKGADIMA		201170306

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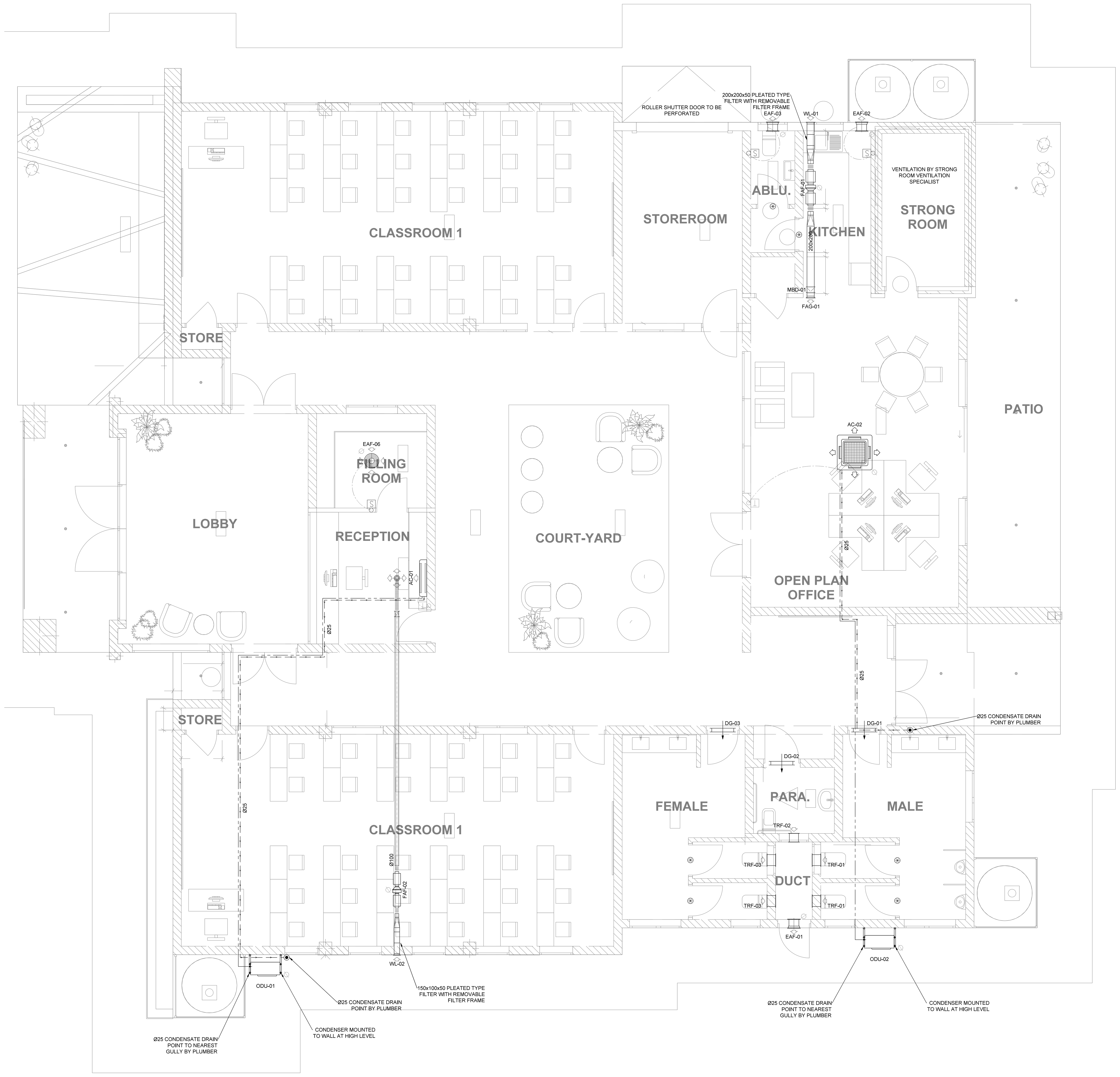
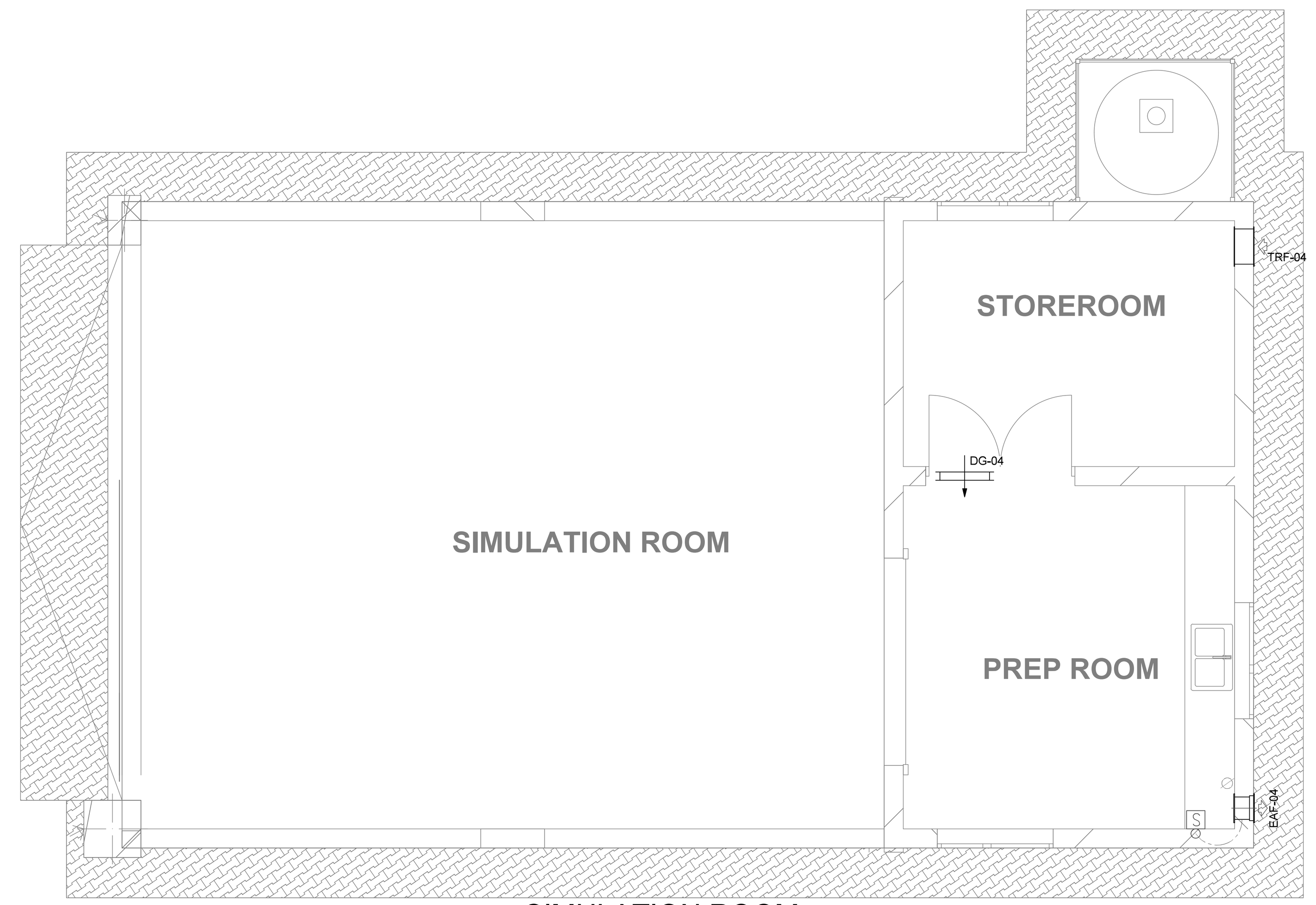
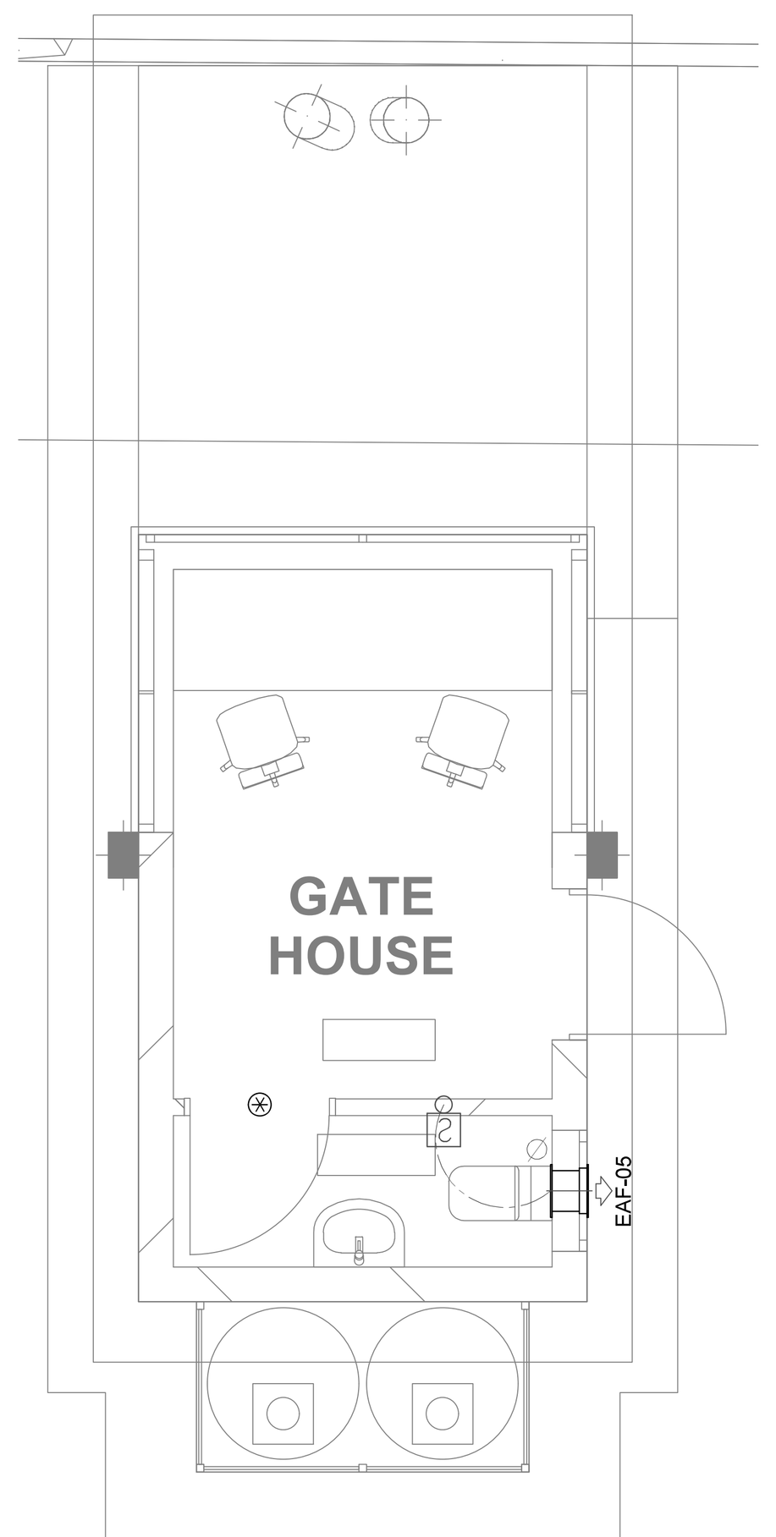
SIZE	DRAWING NUMBER	REV
A1	TCE-1238B-DD-EE-402	A



SKILLS DEVELOPMENT CENTRE



SIMULATION ROOM



GUARD HOUSE

FAN SCHEDULE

UNIT REF.	No. OF	DESCRIPTION	VARIABLE SPEED	AIR QTY. (L/s) EACH	ESP (Pa)	FAN SPEED (RPM)	POWER REQUIREMENTS (V / Ph / Hz)	RATED INPUT POWER (kW)	RATED CURRENT (A)	START UP CURRENT (A)
FAF-01	01	* HIT150 IN-LINE TUBE FAN c/w 2 OF SONEX SOUND ATTENUATORS - FRESH AIR	SPEED CONTROLLER	45.00	200	----	230 / 1 / 50	0.110	0.510	----
FAF-02	01	* HIT100 IN-LINE TUBE FAN c/w 2 OF SONEX SOUND ATTENUATORS - FRESH AIR	SPEED CONTROLLER	15.00	200	----	230 / 1 / 50	0.070	0.300	----
EAF-01	01	** WX12 WALL MOUNTED FAN - EXTRACT AIR	SPEED CONTROLLER	412.50	10	----	230 / 1 / 50	0.085	0.370	----
EAF-02	01	** WX6 WALL MOUNTED FAN - EXTRACT AIR	SPEED CONTROLLER	68.00	----	----	230 / 1 / 50	0.034	0.150	----
EAF-03	01	** WX6 WALL MOUNTED FAN - EXTRACT AIR	SPEED CONTROLLER	68.00	----	----	230 / 1 / 50	0.034	0.150	----
EAF-04	01	** WX12 WALL MOUNTED FAN - EXTRACT AIR	SPEED CONTROLLER	213.75	45	----	230 / 1 / 50	0.085	0.370	----
EAF-05	01	** WX6 WALL MOUNTED FAN - EXTRACT AIR	SPEED CONTROLLER	68.00	----	----	230 / 1 / 50	0.034	0.150	----
EAF-06	01	** VX150 CEILING MOUNTED FAN - EXTRACT AIR	SPEED CONTROLLER	62.00	----	----	230 / 1 / 50	0.025	0.110	----

*AMS OR SIMILAR APPROVED
**XPELAIR OR SIMILAR APPROVED

AIR CONDITIONING - INDOOR UNIT SCHEDULE

UNIT REF.	No. OF	DESCRIPTION	MODEL No.	AIR QTY. (L/s) EACH	CAPACITY(kW) COOLING	CAPACITY(kW) HEATING	POWER REQUIREMENTS (V / Ph / Hz)	POWER REQUIREMENTS ABSORBED (kW)
AC-01	01	*4-WAY CASSETTE SLIT UNIT	PLA-RP125BA	517.00	12.30	14.00	---	---
AC-02	01	* MIDWALL SPLIT UNIT	MSZ-DM25VA	158.00	2.50	3.15	---	---

*MITSUBISHI OR SIMILAR APPROVED

AIR CONDITIONING - OUTDOOR UNIT SCHEDULE

UNIT REF.	No. OF	DESCRIPTION	MODEL No.	UNIT WEIGHT (kg)	(V / Ph / Hz)	INPUT (kW)
ODU-01	01	* SPLIT CONDENSER UNIT	PUHZ-P125VHA3	99	230 / 1 / 50	4.11
ODU-02	01	* SPLIT CONDENSER UNIT	MUZ-DM25VA	24	230 / 1 / 50	0.85

*MITSUBISHI OR SIMILAR APPROVED

AIR TERMINAL SCHEDULE

UNIT REF.	No. OF	DESCRIPTION	AIR QTY. (L/s) EACH
FAG-01	01	*FRESH AIR DISC VALVE - 200x200 NECK SIZE	45.00
FAD-01	01	*FRESH AIR DISC VALVE - Ø100 NECK SIZE	15.00
MBD-01	01	*MANUAL BALANCING DAMPER - Ø200x200 NECK SIZE	45.00
MBD-02	01	*MANUAL BALANCING DAMPER - Ø100 NECK SIZE	15.00
WL-01	01	*WEATHER LOUVRE - 200x200 NECK SIZE	45.00
WL-02	01	*WEATHER LOUVRE - 150x100 NECK SIZE	15.00
TRF-01	02	*TRANSFER GRILLE - 550x200 NECK SIZE	96.00
TRF-02	01	*TRANSFER GRILLE - 350x200 NECK SIZE	60.00
TRF-03	02	*TRANSFER GRILLE - 550x200 NECK SIZE	81.00
TRF-04	01	*TRANSFER GRILLE - 450x200 NECK SIZE	213.75
DG-01	01	*DOOR GRILLE - 550x400 NECK SIZE	192.00
DG-02	01	*DOOR GRILLE - 300x300 NECK SIZE	60.00
DG-03	01	*DOOR GRILLE - 550x200 NECK SIZE	162.00
DG-04	01	*DOOR GRILLE - 550x350NECK SIZE	213.75

*TROX / RICKARD OR SIMILAR APPROVED

ALL DIMENSIONS AND HEIGHTS ARE TO BE CHECKED ON SITE BEFORE WORK IS PUT IN HAND.
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BRAND NAMES DENOTE SIMILAR &/OR EQUALY APPROVED.
ALL WORK TO BE IN ACCORDANCE TO N.R.B.
REPORT DISCREPANCIES TO ARCHITECT OR ENGINEER.

GENERAL NOTES:
- ALL DIMENSIONS TO BE CHECKED ON SITE BEFORE ANY WORK IS PUT IN HAND.
- ALL WORK TO COMPLY TO LOCAL MUNICIPAL BY- LAWS.
- HVAC SUB-CONTRACTOR IS RESPONSIBLE TO ENSURE ALL CO-ORDINATION & CORRECT DIMENSIONING OF DRAWINGS IS DONE WITH ALL OTHER RESPECTIVE CONTRACTORS PRIOR TO PROCUREMENT & INSTALLATION.
- QUALITY MUST BE ADHERED TO ALL STANDARDS AS PER TENDER SPECIFICATIONS

HVAC NOTES:
1. THIS DRAWING FORMS PART OF THE SPECIFICATION AND MUST BE READ IN CONJUNCTION WITH THE SAME.
2. ALL DUCTWORK TO BE MANUFACTURED IN ACCORDANCE WITH ABS-1238-1979 LOW VELOCITY DUCT STANDARDS.
3. ALL DUCT SIZES SHOWN ARE ACTUAL SHEETMETAL SIZES.
4. SUPPLY DUCTS TO BE EXTERNALLY INSULATED WITH 25mm FRK INSULATION - UNLESS OTHERWISE SPECIFIED.
5. ALL OTHER DUCTS TO BE UNINSULATED, UNLESS SPECIFIED.
6. ALL EXPOSED DUCTS TO BE PAINTED TO SPECIFICATION.
7. ALL DUCTS WITH SEMI-PERIMETER OF 1150mm OR LESS TO BE "S & DRIVE" JOINTS, AND DUCTS ABOVE TO BE MEZZ FLANGED.
8. ALL BENDS TO HAVE INTERNAL RADIUS OF 150mm AND SPLITTERS UNLESS OTHERWISE SPECIFIED.
9. ALL ROUND DUCT BENDS UP TO Ø500mm TO HAVE A RADIUS OF 200mm - OVER Ø500mm TO HAVE A RADIUS OF 300mm.
10. DUCT SHOES TO BE 150mm LONG @ 45°.
11. SPIGOTS TO BE 100mm LONG, UNLESS OTHERWISE STATED.

HVAC BUILDERSWORK:

12. ALL OPENINGS TO BE 100mm BIGGER THAN DUCT SIZES SHOWN (BUILDER TO MAKE GOOD AFTER DUCTS ARE INSTALLED).
13. ALL OPENINGS TO BE 50mm BIGGER THAN GRILLE SIZES SHOWN WHICH INCLUDES A 25mm THK. TIMBER FRAME ALL AROUND OPENING - BY BUILDER.
14. SLEEVES IN WALLS, SLABS & BEAMS (SIZE SHOWN ON DRAWING) (BUILDER TO MAKE GOOD AFTER DUCTS ARE INSTALLED).

LEGEND:

(symbol)	400V / 3PH / 50HZ POWER SUPPLY TERMINATING IN ISOLATOR WITHIN ONE METER OF EQUIPMENT - BY ELECTRICIAN.
Ø	230V / 1PH / 50HZ POWER SUPPLY TERMINATING IN ISOLATOR WITHIN ONE METER OF EQUIPMENT - BY ELECTRICIAN.
•	DOOR TO BE UNDERCUT BY 25mm MINIMUM - BY BUILDER
T	WALL MOUNTED THERMOSTAT AT 1350 AFFL. (c/w Ø25mm CONDUIT AND 4x4 BOX IN WALL) - BY ELECTRICIAN AND BUILDER)
S	WALL MOUNTED ON/OFF SWITCH AT 1350 AFFL. (c/w Ø25mm CONDUIT AND 4x4 BOX IN WALL) - BY ELECTRICIAN AND BUILDER)

ABBREVIATIONS:

DG	DOOR GRILLE
EAD / G	EXTRACT AIR DIFFUSER OR GRILLE
TG	TRANSFER GRILLE
WL	WEATHER LOUVRE
MOS	MEASURE ON SITE
NTS	NOT TO SCALE
TRF	TRANSFORMATION OF DUCT
WMS	WIRE MESH SCREEN
c/w	COMPLETE WITH

LINE TYPE LEGEND:
- CONDENSATE DRAIN PIPE
- REFRIGERATION PIPE
- CENTRE LINE
- FLEXIBLE DUCT
- ELECTRICAL CABLE

PRELIM DESIGN

REV No	DATE :	DESCRIPTION:
A	25.06.2024	ISSUED FOR INFORMATION

SIZE ON ORIGINAL DRAWING 100 mm

CLIENT LOGO

PROJECT DETAILS
GA-PHASHA SETA SKILLS DEVELOPMENT CENTRE
GROUND FLOOR
HVAC SERVICES

CONTRACT No
TCE 1238

DISCIPLINE
MECHANICAL

DRAWING DESCRIPTION
HEATING, VENTILATION &
AIR-CONDITIONING LAYOUT

DESIGNED BY	DRAWN BY	CHECKED BY
HN	KO	HN

DRAWING UNITS	mm	SCALE	1:50

RESPONSIBLE PROFESSIONAL

DATE	NAME	SIGNATURE	PR NUMBER
25.06.2024	DLB	(signature)	20027010 9

Thembakele CONSULTING ENGINEERS (PTY) LTD
UNIT 6, GARDENS BUSINESS PARK
ATELJEE STREET
RANDPARK RIDGE, 2156
Web address: www.thembakele.co.za
Telephone: 011 475 4560
Facsimile: 011 475 9140

SIZE	DRAWING NUMBER	REV
A0	TCE-1238-PD-M-AC-101	A

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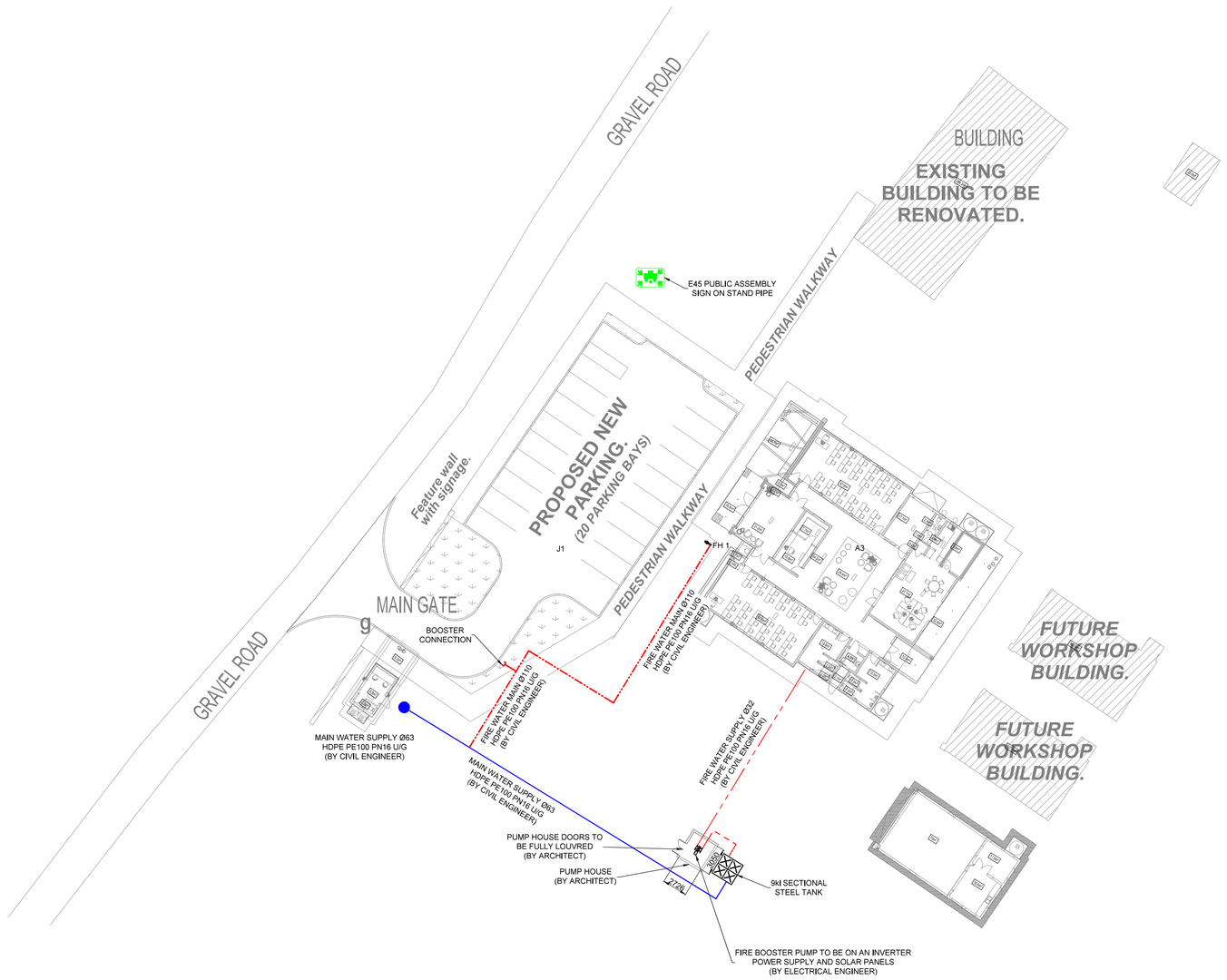
LEGEND

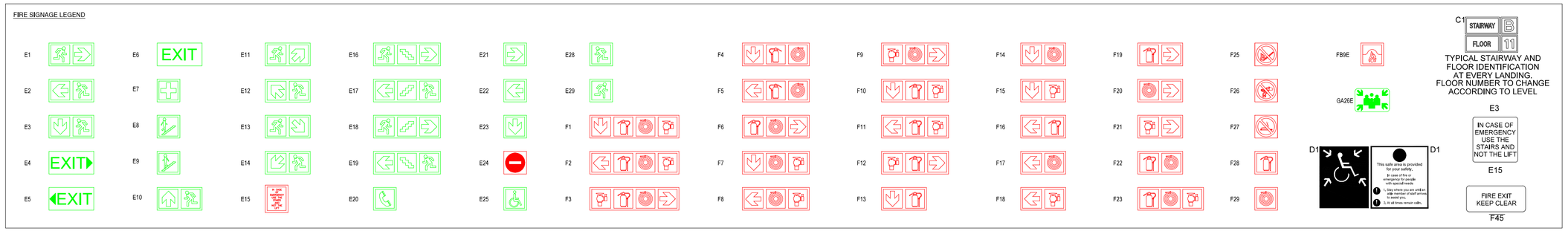
- ESCAPE ROUTES
- FIRE WALL (120 MINUTES)
- FIRE WALL (60 MINUTES)
- FIRE WALL (30 MINUTES)

'A' - CLASS A 60mm SELF CLOSING FIRE DOOR
'B' - CLASS B 120mm SELF CLOSING FIRE DOOR
'D' - CLASS D 120mm WITH IMPACT TEST SELF CLOSING FIRE DOOR
'E' - CLASS E 30mm SELF CLOSING FIRE DOOR
- 4.5 kg DCP FIRE EXTINGUISHER
- 9 kg DCP FIRE EXTINGUISHER
- 9kg CO_2 FIRE EXTINGUISHER
- FIRE HYDRANT
- FIRE HOSE REEL

IV		ISOLATING VALVE
PRV		PRESSURE REDUCING VALVE
M		WATER METER
DI		NON-RETURN VALVE
		Y STRAINER
P		PRESSURE GAUGE
		PUMP
NTS		NOT TO SCALE



FIRE SIGNAGE LEGEND



FIRE SIGNAGE NOTES:

1. ALL FIRE AND DIRECTIONAL SIGNAGE MUST BE PHOTOLUMINESCENT AND COMPLY WITH SANS 1186 – 1 & 5
2. ALL SIGNAGE TO BE INSTALLED IN ACCORDANCE WITH SANS 10400 PART T.
3. ALL PHOTOLUMINESCENT FIRE AND DIRECTIONAL SIGNS ARE TO BE FRAMED WITH MITRED CORNERS AND CONCEALED ELBOW JOINTS. FRAMES MUST BE MANUFACTURED FROM ALUMINUM.
4. ALL WALL-MOUNTED FIRE AND DIRECTIONAL SIGNAGE TO BE CONCEALED SCREWED TO BRICKWORK, NO DOUBLE-SIDED TAPE.
5. ALL SUSPENDED FIRE AND DIRECTIONAL SIGNAGE TO BE HUNG ON STAINLESS STEEL WIRE.
6. SIGNAGE IN OFFICE AREAS TO BE 150mm x150mm SINGLE PICTOGRAM SIZE COMBINATIONS.
7. SIGNAGE EXTERNAL TO BUILDING TO BE ABS IN NON- PHOTOLUMINESCENT.
8. ALL FINAL SIGNAGE DETAILS AND POSITIONS TO BE AS PER ARCHITECT'S SPECIFICATIONS.

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PROJECT DETAILS

GA-PHASHA SETA SKILLS DEVELOPMENT CENTRE
GROUND FLOOR
FIRE SERVICES

CONTRACT No

TCE 1238

DISCIPLINE

MECHANICAL

DRAWING DESCRIPTION

FIRE SITE PLAN

DESIGNED BY	DRAWN BY	CHECKED BY
HN	KO	HN

DRAWING UNITS	mm	SCALE	1:300

RESPONSIBLE PROFESSIONAL

DATE	NAME	SIGNATURE	PR NUMBER
25.06.2024	DLB		200270109

Thembakele CONSULTING ENGINEERS (PTY) LTD
UNIT 6, GARDENS BUSINESS PARK
ATELIER STREET
RANDPARK RIDGE, 2156
Web address: www.thembakele.co.za
Telephone: 011 475 4560
Facsimile: 011 475 9140

SIZE	DRAWING NUMBER	REV
A0	TCE-1238-PD-F-AC-403	A

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	NON-RETURN VALVE
	Y STRAINER
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	PUMP
NTS	NOT TO SCALE

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GA-PHASHA SETA SKILLS DEVELOPMENT CENTRE
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FIRE SERVICES

CONTRACT No
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DISCIPLINE
MECHANICAL

DRAWING DESCRIPTION
FIRE SITE PLAN

DESIGNED BY	DRAWN BY	CHECKED BY
HN	KO	HN

DRAWING UNITS	mm	SCALE	1:300

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