

GOVERNMENT OF BHUTAN.
FOOD SECURITY AND AGRICULTURE PRODUCTIVITY PROJECT (FSAPP)

REQUEST FOR BIDS (RFB)
(One-Envelope Bidding Process without e-Procurement)

NATIONAL OPEN COMPETITIVE PROCUREMENT
FOR SMALL WORKS

Date: 10th December 2022

RFB No. BT-MOAF-329318-CW-RFB & BT-MOAF-329321-CW-RFB

1. The Government of Bhutan has received financing from the World Bank toward the cost of the Food Security and Agriculture Productivity Project and intends to apply a part of the funds to cover eligible payments under the contracts for construction of works as detailed below. Bidding is open to all bidders from eligible source countries as defined in the "Procurement Regulations for IPF Borrowers, July 2016, revised August 2018" ("Procurement Regulations"). Bidders from Bhutan should, however, be registered with the Government of Bhutan. **Bidders are advised to note the minimum qualification criteria specified in Clause 3 of the Instructions to Bidders to qualify for the award of the contract.** In addition, please refer to paragraphs 3.14 and 3.15 of the "Procurement Regulations" setting forth the World Bank's policy on conflict of interest.
2. The Department of Agricultural Marketing & Cooperatives (DAMC), MoAF, Thimphu (Implementing Agency) invites sealed bids for the construction of works detailed in the table below. **The bidders are allowed to submit bids for only one package/works indicated therein.**
3. Interested eligible Bidders may obtain further information from the office of the DAMC, MoAF, Thimphu, Bhutan, during office hours.
4. A complete set of bidding document can be downloaded from the ministry's website, www.moaf.gov.bt, free of cost.
5. Bids must be accompanied by a bid security of the amount specified for the work in the table below, drawn in favour of Director, DAMC, MoAF, Thimphu. Bid security will have to be in any one of the forms as specified in the bidding document and shall have to be valid for 45 days beyond the validity of the bid. Bids should be valid for 45 days after the deadline date specified for bid submission.
6. Bids must be delivered to DAMC, MoAF, Thimphu on or before 10.00 hours on January 11, 2023 and will be publicly opened on the same day at 10.30 hours, in the presence of the bidders who wish to attend. If the office happens to be closed on the date of receipt of the bids as specified, the bids will be received and opened on the next working day at the same time and venue. Late Bids will be rejected.
7. Other details can be seen in the bidding document.

TABLE

Package No.	Name of work	Bid Security (BTN.)	Period of completion
1	Construction of Centralized Packhouse with office including site development and construction of water supply at Samtse Dzongkhag.	BTN. 121, 000.00	6 Months
2	Construction of Centralized Packhouse with office including site development and dismantling of existing structure at Dagana Dzongkhag Dzongkhag.	BTN. 122, 000.00	6 Months

Seal of office

(Employer)



✓ Name: Kinlay Tshering
Address: Director, DAMC, MoAF, Thimphu
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Instructions to Bidders

SECTION - A

1. Scope of Works

The Department of Agricultural Marketing & Cooperatives (DAMC), MoAF, Thimphu (Employer) invites bids for the construction of works as detailed in the table given below

Package No.	Brief Description of the Works	Period of Completion
1	Construction of Centralized Packhouse with office including site development and construction of water supply at Samtse Dzongkhag	6 Months
2	Construction of Centralized Packhouse with office including site development and dismantling of existing structure at Dagana Dzongkhag.	6 Months

The successful bidder will be expected to complete the works by the intended completion date specified above.

2. **Qualification of the bidder:** The bidder shall provide qualification information which shall include:-

- a) total monetary value of construction works performed for each year of the last 5 years;
- b) Report on his financial standing; and
- c) Details of any litigation, current or during the last 3 years in which the bidder is involved, the parties concerned and disputed amount or awards in each case.

3. **To qualify for award of the contract (Package wise) the bidder:-**

- (a) should have satisfactorily completed as a prime contractor at least one similar work of value not less than BTN.5.00 million (Ngultrum Five Million) for Package 1 and BTN. 5.00 million (Ngultrum Five Million) for Package 2 in the last five years;
- (b) should have achieved in at least five years an average annual financial turnover (in civil engineering construction works of similar nature only) of value not less than BTN 12.00 million (Ngultrum Twelve Million) for Package 1 & BTN.12.00 million (Ngultrum Twelve Million) for Package 2 in the last five years;
- (c) should possess valid electrical license for executing building electrification works (in the event of the works being sub-contracted, the sub-contractor should have the necessary license) for both the Packages;

- (d) should possess required valid license for executing the water supply/sanitary works (in the event of the works being sub-contracted, the sub-contractor should have the necessary license) for Package 1 only;
- (e) should not have been debarred or suspended on the date of bid opening by the World Bank Group.
- (f) no contract should have been suspended or terminated and/or performance security called by an employer(s) for reasons related to Environmental, Social (including sexual exploitation and abuse (SEA) and gender based violence (GBV)), Health, or Safety (ESHS) requirements or safeguards in the past five years.
- (g) availability of liquid assets and/or credit facilities, net of other contractual commitments and exclusive of any advance payments which may be made under the Contract, of not less than BTN 3.00 million (Ngultrum Three Million) for Package 1 & BTN.3.00 million (Ngultrum Three Million) for Package 2.

3.1 Eligibility - Conflict of Interest*

Any Bidder found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest for the purpose of this bidding process, if the Bidder:

- i. directly or indirectly controls, is controlled by or is under common control with another Bidder; or
- ii. receives or has received any direct or indirect subsidy from another Bidder; or
- iii. has the same legal representative as another Bidder; or
- iv. has a relationship with another Bidder, directly or through common third parties, that puts it in a position to influence the bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or
- v. any of its affiliates has been hired (or is proposed to be hired) by the Employer or Borrower as Engineer for the Contract implementation;
- vi. has a close business or family relationship with the concerned professional staff of the Borrower or of the project implementing agency.

(* for further details refer to paragraphs 3.14 and 3.15 of the "Procurement Regulations" setting forth the World Bank's policy on conflict of interest)

4. Bid Price

- a) The contract shall be for the whole works as described in drawings and technical specifications. Corrections, if any, shall be made by crossing out, initialing, dating, and rewriting.
- b) All duties, taxes and other levies payable by the contractor under the contract shall be included in the total price.

- c) The rates quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
- d) The Bidder shall fill in the prices for the Works in conformity with the Bidding Documents, both in figures and words.

5. Clarification of Bidding Documents

- 5.1 A prospective Bidder requiring any clarification of the Bidding Documents may notify the Employer in writing, including electronic mail, at the Employer's address indicated above. The Employer shall respond to any request for clarification received earlier than fifteen (15) days prior to the deadline for submission of bids. Copies of the Employer's response shall be forwarded to all purchasers of the Bidding Documents, including a description of the inquiry, but without identifying its source. Should the clarification result in changes to the essential elements of the Bidding Documents, the Employer shall amend the Bidding Documents, following the procedure in Clause 6 below.

6. Amendment of Bidding Documents

- 6.1 Before the deadline for submission of Bids, the Employer may modify the Bidding Documents by issuing addenda.
- 6.2 Any addendum thus issued shall be part of the Bidding Documents, shall be binding on all Bidders and shall be communicated in writing, including electronic mail, to all purchasers of the Bidding Documents. Prospective Bidders shall acknowledge receipt of each addendum in writing, including by electronic mail, to the Employer.
- 6.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, the Employer shall extend, as necessary, the deadline for submission of Bids, in accordance with Clause 7 below

7 Submission of Bids

- 7.1 The bidder is advised to visit the site of works at his own expense and obtain all information that may be necessary for preparing the bid.
- 7.2 **Bidders are allowed to quote for only one Package and each bidder shall submit only one bid.** Bidders should not contact other competing bidders in matters relating to this bid.
- 7.3 The set of bidding document comprise of the following:
 - i. Layout Drawings of the works;
 - ii. Structural Details;
 - iii. Bill of Quantities & Technical Specifications;
 - v. Instructions to Bidders; and

- vi. Draft Contract Agreement format which will be used for finalizing the agreement for this Contract.

7.4 The bid submitted by the bidder shall comprise the following:-

- (a) Bid in the format given in Section B.
- (b) Completed Bill of Quantities;
- (c) Qualification information form given in Section B duly completed.
- (d) Bidder's confirmation to comply with (i) the applicable Laws/ Rules/ Regulations for protection of environment, public health and safety; (ii) the regulatory authority conditions (if any) attached to any permits or approvals for the project; and (iii) the Management Strategies and Implementation Plan (MSIP) to manage the Environmental, Social (including sexual exploitation and abuse (SEA) and gender based violence (GBV)), Health and Safety (ESHS) risks, and ESHS Code of Conduct, (if any prescribed by the Employer), that will apply to its employees and all subcontractors.
- (e) Bid Security, in original form for the amount BTN. 121,000.00 (Ngultrum One Hundred Twenty One Thousand) for Package 1 and BTN. 122,000.00 (Ngultrum One Hundred Twenty Two Thousand) for Package 2, in one of the following forms:
 - A bank guarantee issued by a Nationalized/Scheduled bank located in Bhutan in the form given in Section B; or
 - Certified cheque or Bank draft payable to Director, DAMC, MoAF, Thimphu.
 - Fixed Deposit/Time Deposit certificates issued by a Nationalized/Scheduled Bank located in Bhutan for equivalent or higher values are acceptable provided it is pledged in favour of Director, DAMC, MoAF, Thimphu, and such pledging has been noted and suitably endorsed by the bank issuing the deposit certificate.

7.5 The bidder shall seal the bid in an envelope addressed to the Director, DAMC, MoAF, Thimphu (Purchaser).

The envelope will also bear the following identification:-

- RFB for Package 1- Construction of Centralized Packhouse with office including site development and construction of water supply at Samtse Dzongkhag and Package 2- Construction of Centralized Packhouse with office including site development and dismantling of existing structure at Dagana Dzongkhag.
- Do not open before 10.30 hours on 11th January 2023.

7.6 Bids must be received in the office of the Director, DAMC, MoAF, Thimphu (Employer) not later than the deadline for submission of bids specified in the RFB viz. time 10.00 hours

and 11th January 2023. If the specified date is declared a holiday, bids shall be received upto the appointed time on the next working day.

7.7 Any bid received by the Director, DAMC, MoAF, Thimphu (Employer) after the deadline for submission of bids will be rejected and returned unopened to the bidder.

8. Validity of Bid

Bid shall remain valid for a period not less than 45 days after the deadline date specified for submission. If a Bidder withdraws/modifies/substitutes its bid during the period of bid validity specified by the Bidder on the Letter of Bid, the Bid Security may be forfeited.

9. Public Opening of Bids

Bids will be publicly opened in the presence of bidders or their representatives who choose to attend, on the date and time, and at the place specified in sub-clause 7.5 above.

10. Information relating to evaluation of bids and recommendations for the award of contract shall not be disclosed to bidders or any other persons not officially concerned with the process until the award to the successful bidder is announced.

11. Evaluation of Bids

11.1 Correction of Arithmetical Errors

Bids determined to be substantially responsive shall be checked for any arithmetic errors. Errors shall be corrected as follows:

- (a) where there is a discrepancy between the amounts in figures and in words, the amount in words shall govern;
- (b) where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, unit rate as quoted shall govern; and
- (c) the amount stated in the Bid shall be adjusted in accordance with the above procedure for the correction of errors

If the Bidder does not accept the corrected amount, the Bid shall be rejected, and the Bid Security may be forfeited.

11.2 The Employer will evaluate and compare the bids determined to be substantially responsive i.e. which

- (a) meet the qualification criteria specified in clause 3 above;
- (b) are properly signed; and
- (c) conform to the terms and conditions, specifications and drawings without material deviations.

- 11.3** The evaluation will be carried out Package wise and contract will be awarded package wise.
- 11.4** To assist in the examination, evaluation and comparison of Bids, the Employer may, at the Employer's discretion, ask any Bidder for clarification of the Bidder's Bid, including breakdowns of unit rates. The request for clarification and the response shall be in writing, including by electronic mail, but no change in the price or substance of the Bid shall be sought, offered or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Bids in accordance with ITB Clause 11.

12. Award of contract

The Employer will award the contract (Package wise) to the successful bidder whose bid has been determined to be the Most Advantageous Bid. This is the bid that meets the specified Qualification Criteria and has been determined to be (a) substantially responsive to the bidding document; and (b) the lowest evaluated cost.

- 12.1** Notwithstanding the above, the Employer reserves the right to accept or reject any Bid and to cancel the bidding process and reject all Bids at any time prior to the award of contract.
- 12.2** The successful bidder will be notified of the award of contract by the Employer prior to expiration of the bid validity period.
- 12.3** The Bid security of unsuccessful bidders will be returned as promptly as possible upon the successful Bidder's signing the contract and furnishing the performance security pursuant to ITB 13.

13. Performance Security

Within 15 days of receiving letter of acceptance, the successful bidder shall deliver to the Director, DAMC, MoAF, Thimphu (Employer) the performance security (either a bank guarantee or a bank draft in favour of the Employer) for an amount equivalent of 5% of the contract price. The Performance Security shall be valid until a date 28 days after the date of issue of the Certificate of Completion. Failure of the successful Bidder to furnish performance security and sign the agreement within the period stipulated shall constitute sufficient grounds for annulment of award and forfeiture of the Bid Security, in which case the Employer may make the award to the Bidder offering the next Most Advantageous Bid or issue a new RFB.

14. Defects Liability:

The "Defects Liability Period" for the work is six months from the date of taking over possession or one full monsoon season whichever occurs later. During this period, the contractor will be responsible for rectifying any defects in construction free of cost to the Employer.

- 15.** Supply of all construction materials including cement and steel as per the specifications (ISI certification marked goods wherever available) shall be the responsibility of the contractor.

16. Fraud and Corruption

The World Bank requires compliance with the Bank's Anti-Corruption Guidelines and its prevailing sanctions policies and procedures as set forth in the WBG's Sanctions Framework, as set forth in Section C. In further pursuance of this policy, bidders shall permit and shall cause their agents (whether declared or not), sub-contractors, sub-consultants, service providers, suppliers and their personnel, to permit the Bank to inspect all accounts, records and other documents relating to any initial selection process, prequalification process, bid submission, proposal submission, and contract performance (in the case of award), and to have them audited by auditors appointed by the Bank.

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SECTION - B

- 1. Format for Qualification Information.**
- 2. Format for Submission of Bid.**
- 3. Format of Letter of Acceptance.**

QUALIFICATION INFORMATION

1 For Individual Bidders

1.1 Principal place of business: _____

Power of attorney of signatory of Bid.

[Attach copy]

1.2 Total value of Civil Engineering construction work performed in the last three years (in BTN. Lakhs)

	20	
	20	
	20	

1.3 Work performed as prime contractor (in the same name) on works of a similar nature over the last three years.

Project Name	Name of Employer	Description of work	Contract No.	Value of contract (BTN. Lakhs)	Date of issue of work order	Stipulated period of completion	Actual date of completion	Remarks explaining reasons for delay and work completed

Existing commitments and on-going works:

Description of Work	Place & State	Contract No. & Date	Value of Contract (BTN. Lakh)	Stipulated period of completion	Value of works* remaining to be completed (BTN. Lakhs)	Anticipated date of completion
(1)	(2)	(3)	(4)	(5)	(6)	(7)

* Enclose a certificate from Engineer concerned.

1.4 Proposed subcontracts and firms involved.

Sections of the works	Value of Sub-contract	Sub-contractor (name & address)	Experience in similar work

1.5 Evidence of access to financial resources to meet the requirement of working capital: cash in hand, lines of credit, etc. List them below and attach copies of supporting documents.

1.6 Name, address, and telephone, telex, and fax numbers of the Bidders' bankers who may provide references if contacted by the Employer.

1.7 Information on litigation history in which the Bidder is involved.

Other party(ies)	Employer	Cause of dispute	Amount involved	Remarks showing present status

1.8 Contract(s) suspended or terminated and/or Performance Security called by an employer(s) for reasons related to Environmental, Social (including sexual exploitation and abuse (SEA) and gender based violence (GBV)), Health, or Safety (ESHS) performance during the last five years.

Contract(s) suspended or terminated by an Employer(s)			
Year	Contract Identification, Name and address of the Employer, and reasons for suspension or termination	Amount of suspended or terminated portion of contract (BTN)	Total Contract Amount (BTN)
Performance Security called by an employer(s)			
Year	Contract Identification, Name and address of the Employer, and reasons for calling of performance security	Total Contract Amount (BTN)	

LETTER OF BID

RFB No:

Date of Bid Submission:

To:

Subject : Construction of
.....

Sir,

We have no reservations to the Bidding Document, and offer to execute the Works referred above in accordance with the Conditions of Contract enclosed therewith at a total Fixed Contract Price of
—

BTN.** _____ [in figures]
BTN. _____ [in words].

This bid and your written acceptance of it shall constitute a binding contract between us. We understand that you are not bound to accept the lowest or any bid you receive.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf engages in any type of Fraud and Corruption.

We hereby confirm that this bid is valid for 45 days as required in Clause 6 of the Instructions to Bidders.

We meet the eligibility requirements and have no conflict of interest in accordance with ITB 3.1

We have not been currently debarred or suspended by the World Bank Group.

Yours faithfully,

Authorized Signature : Date signed: _____

Name & Title of Signatory : _____

Name of Bidder : _____

Address : _____

** To be filled in by the Bidder, together with his particulars and date of submission at the bottom of this Form.

**LETTER OF ACCEPTANCE
CUM NOTICE TO PROCEED WITH THE WORK**

(LETTERHEAD OF THE EMPLOYER)

Dated: _____

To : _____ [Name and address of the Contractor]

Dear Sirs,

This is to notify you that your Bid dated _____ for execution of the _____ for the contract price of Ngultrum _____ [amount in words and figures], is hereby accepted by us.

You are hereby requested to furnish performance security for an amount of BTN. _____ (equivalent to 5% of the contract price) within 15 days of the receipt of the letter. The Performance Security in the form of Bank guarantee or a Bank draft in favour of(Employer) shall be valid until a date 28 days after the date of issue of the Certificate of Completion i.e. upto _____. Failure to furnish the Performance Security will entail cancellation of the award of contract.

You are also requested to sign the agreement form and proceed with the work not later than _____ under the instructions of the Engineer, _____ and ensure its completion within the contract period.

With the issuance of this acceptance letter and your furnishing the Performance Security, contract for the above said work stands concluded.

Yours faithfully,

**Authorized Signature
Name and title of Signatory**

**Draft Agreement form for
Construction through Lump Sum Contract**

ARTICLES OF AGREEMENT

1. This deed of agreement is made in the form of agreement on _____ day _____ month _____ 20 __, between the _____ (Employer) or his authorized representative (hereinafter referred to as the first party) and _____ (Name of the Contractor), S/O _____ resident of _____¹ (hereinafter referred to as the second party), to execute the work of construction of _____ (hereinafter referred to as works) on the following terms and conditions.

2. Cost of the Contract

The total cost of the works (hereinafter referred to as the "total cost") is Rs. _____ as reflected in Annexure - 1.

3. Payments under the contract:

3.1 Payments to the second party for the construction work will be released by the first party in the following manner:-

- On Signing of Agreement: 10% of the contract price on receipt of unconditional bank guarantee in the format attached (The Guarantee shall remain effective until the advance payment has been repaid).
- Balance payment will be based on the physical progress.

3.2 The Employer shall retain (Retention Money) 6% of the amount from each payment due to the Contractor subject to the maximum of 5% of final contract price. Half of the amount retained shall be repaid upon completion of the works, and other half shall be repaid when the Defects Liability Period has passed and the Engineer has certified that all Defects notified to the Contractor before the end of this period have been corrected. On completion of the whole works the Contractor may substitute the balance retention money with an "on demand" Bank guarantee.

3.3 Payments at each stage will be made by the first party:

- (a) on the second party submitting an invoice for an equivalent amount;
- (b) on certification of the invoice (except for the first installment) by the engineer nominated by the first party with respect to quality of works in the format in Annexure - 2; and

¹ In case of a firm insert 'complete address of the firm'. In case of an individual contractor insert identification like 'son of and resident of' etc.

- (c) upon proper and justified utilization of at least 50 % of the previous installment and 100 % of any prior installment.

4. Notice by Contractor to Engineer

The second party, on the works reaching each stage of construction, shall issue a notice to the first party or the Engineer nominated by the first party [who is responsible for supervising the contractor, administering the contract, certifying payments due to the contractor, issuing and valuing variations to the contract, awarding extension of time etc.] to visit the site for certification of stage completion. Within 15 days of the receipt of such notice, the first party or the engineer nominated by it, will ensure issue of stage completion certificate after due verification.

5. Completion time

The works should be completed in Six months from the date of this Agreement. In exceptional circumstances, the time period stated in this clause may be extended in writing by mutual consent of both the parties.

- 6. If any of the compensation events mentioned below would prevent the work being completed by the intended completion date, the first party will decide on the intended completion date being extended by a suitable period:
 - a) The first party does not give access to the site or a part thereof by the agreed period.
 - b) The first party orders a delay or does not issue completed drawings, specifications or instructions for execution of the work on time.
 - c) Ground conditions are substantially more adverse than could reasonably have been assumed before issue of letter of acceptance and from information provided to second party or from visual inspection of the site.
 - d) Payments due to the second party are delayed without reason.
 - e) Certification for stage completion of the work is delayed unreasonably.
- 7. Any willful delay on the part of the second party in completing the construction within the stipulated period will render him liable to pay liquidated damages of BTN. **0.05 % of the contract value of the works** per week which will be deducted from payments due to him. The first party may cancel the contract and take recourse to such other action as deemed appropriate once the total amount of liquidated damages exceeds 5 % of the contract amount.
- 8. **Duties and responsibilities of the first party**
 - 8.1 The first party shall be responsible for providing regular and frequent supervision and guidance to the second party for carrying out the works as per specifications. This will include written guidelines and regular site visit of the authorized personnel of the first party, for checking quality of material and construction to ensure that it is as per the norms.

- 8.2 The first party shall supply 3 sets of drawings, specifications and guidelines to the second party for the proposed works.
- 8.3 Possession of the site will be handed over to the second party within 10 days of signing of the agreement.
- 8.4 The Engineer or such other person as may be authorized by the first party shall hold meeting once in a month where the second party or his representative at site will submit the latest information including progress report and difficulties if any, in the execution of the work. The whole team may jointly inspect the site on a particular day to take stock of activities.
- 8.5 The Engineer shall record his observations/instructions at the time of his site visit in a site register maintained by the second party. The second party will carry out the instructions and promptly rectify any deviations pointed out by the engineer. If the deviations are not rectified, within the time specified in the Engineer's notice, the first party as well as the engineer nominated by it, may instruct stoppage or suspension of the construction. It shall thereupon be open to the first party or the engineer to have the deviations rectified at the cost of the second party.
- 8.6 The Engineer shall issue a Certificate of Completion of the Works on the request of the second party, and upon deciding that the whole of the Works is completed.

9. Duties and responsibilities of the second party

9.1 The second party shall:

- a) take up the works and arrange for its completion within the time period stipulated in clause 5;
- b) employ suitable skilled persons to carry out the works;
- c) regularly supervise and monitor the progress of work;
- d) abide by the technical suggestions/ direction of supervisory personnel including engineers etc. regarding building construction;
- e) be responsible for bringing any discrepancy to the notice of the representative of the first party and seek necessary clarification;
- f) ensure that the work is carried out in accordance with specifications, drawings and within the total of the contract amount without any cost escalation;
- g) keep the first party informed about the progress of work;
- h) correct the notified defects within the length of time specified by the Engineer;
- i) be responsible for all security and watch and ward arrangements at site till handing over of the works to the first party;

- j) maintain necessary insurance against loss of materials/cash, etc. or workman disability compensation claims of the personnel deployed on the works as well as third party claims from the start date to the end of defect liability period;
- k) pay all duties, taxes and other levies payable by construction agencies as per law under the contract (First party will effect deduction from running bills in respect of such taxes as may be imposed under the law);
- l) abide by the regulatory authority conditions (if any) attached to any permits or approvals for the project; and the ESHS Management Strategies and Implementation Plan and ESHS Code of Conduct, if any prescribed by the Employer;
- m) abide by all labour enactments and rules made there under, regulations, notifications and bye laws of the State or Central Government or local authorities;
- n) abide by all enactments on environmental protection and rules made there under, regulations, notifications and by-laws of the State or Central Government, or local authorities;
- o) be responsible for the safety of all activities on the Site.

10. Variations / Extra Items

The works shall be executed by the second party in accordance with the approved drawings and specifications. No variation in cost is acceptable. However, if the Engineer issues instructions for execution of extra items, the following procedure shall be followed:-

- a) The second party shall provide the Engineer with a quotation for carrying out the extra items when requested to do so by the Engineer. The Engineer shall assess the quotation, which shall be given within seven days of the request before the extra items are ordered.
- b) If the quotation given by the second party is unreasonable, the Engineer may order the extra items and make a change to the Contract Price which shall be based on Engineer's own forecast of the effects of the extra items on the Contractor's costs.
- c) The second party shall not be entitled to additional payment for costs, which could have been avoided by giving early warning.

11. Securities

The Performance Security shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in an amount and form and by a bank acceptable to the Employer. The Performance Security shall be valid until a date 28 days from the date of issue of the Certificate of Completion in the case of a Bank Guarantee.

12. Termination

12.1 The Employer may terminate the Contract if the other party causes a fundamental breach of the Contract.

12.2 Fundamental breaches of Contract include, but shall not be limited to the following:

- (a) the contractor stops work for 28 days and the stoppage has not been authorized by the Engineer;
- (b) the Contractor has become bankrupt or goes into liquidation other than for a reconstruction or amalgamation;
- (c) the Engineer gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer;
- (d) the Contractor does not maintain a security which is required;
- (e) the Contractor has engaged in Fraud and Corruption as defined in Section C, in competing for or in executing the Contract; and
- (f) the contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid

12.3 Notwithstanding the above, the Employer may terminate the Contract for convenience.

12.4 If the Contract is terminated the Contractor shall stop work immediately, make the Site safe and secure and leave the Site as soon as reasonably possible.

13. Payment upon Termination

13.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Engineer shall issue a certificate for the value of the work done less advance payments received up to the date of the issue of the certificate, less other recoveries due in terms of the contract, less taxes due to be deducted at source as per applicable law.

13.2 If the Contract is terminated at the Employer's convenience, the Engineer shall issue a certificate for the value of the work done, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works and less advance payments received up to the date of the certificate, less other recoveries due in terms of the contract and less taxes due to be deducted at source as per applicable law.

14. Dispute settlement

If over the works, any dispute arises between the two parties, relating to any aspects of this Agreement, the parties shall first attempt to settle the dispute through mutual and amicable consultation.

In the event of agreement not being reached, the matter will be referred for arbitration by a Sole Arbitrator not below the level of retired Chief Engineer / Superintending Engineer, (not connected in part or whole with this Project in his service) to be appointed by the first party. The Arbitration will be conducted in accordance with the Arbitration and Conciliation Act, 1996. The decision of the Arbitrator shall be final and binding on both the parties.

15. Fraud and Corruption

The World Bank requires compliance with the Bank's Anti-Corruption Guidelines and its prevailing sanctions policies and procedures as set forth in the WBG's Sanctions Framework, as set forth in Section C. In further pursuance of this policy, the Contractor shall permit and shall cause its sub-contractors, sub-consultants, service providers, suppliers, agents personnel, to permit the Bank to inspect all accounts, records, and other documents relating to the procurement process, selection and/or contract execution, and to have them audited by auditors appointed by the Bank.

BILL OF QUANTITIES & TECHNICAL SPECIFICATIONS

The approximate Bill of Quantities is indicated below to give an idea of the work which should be executed in accordance with the approved drawings and specifications to enable the bidder to furnish the lump sum price. Bidders may, however, note that no variations in the lump sum cost is acceptable (except where extra items are ordered by the Engineer).

Sl.No.	Description of Work	Unit	Qty.

We agree to execute the works in accordance with the approved drawings and technical specifications at a total fixed contract price of BTN..... (amount in figures) (BTN..... amount in words).

Signature of Contractor

Format of certificate

Certified that the works upto ----- level in respect of construction of ----- at ----- have been executed in accordance with the approved drawings and technical specifications.

Signature
Name & Designation (Official

address)
Place:
Date:

Office seal

Drawings

Form of Bid Security - Bank Guarantee

[Guarantor letterhead or SWIFT identifier code]

Bid Guarantee No.....*[insert guarantee reference number]*

Date.....*[insert date of issue of the guarantee]*

WHEREAS, _____ *[name of Bidder]*² (hereinafter called "the Bidder") has submitted his Bid dated _____ *[date]* or will submit his Bid for the construction of _____ *[name of Contract]* (hereinafter called "the Bid") under Request for Bids No.....*[insert number]* (hereinafter called "the RFB")

KNOW ALL PEOPLE by these presents that We _____ *[name of bank]* of _____ *[name of country]* having our registered office at _____ (hereinafter called "the Bank") are bound unto _____ *[name of Employer]* (hereinafter called "the Employer") in the sum of _____³ for which payment well and truly to be made to the said Employer the Bank binds itself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this _____ day of _____ 20____.

THE CONDITIONS of this obligation are:

- (1) If after Bid opening the Bidder (a) withdraws his bid during the period of Bid validity specified in the Letter of Bid, or any extension thereto provided by the Bidder; or (b) does not accept the correction of the Bid Price pursuant to ITB 9.1;
- or
- (2) If the Bidder having been notified of the acceptance of his Bid by the Employer during the period of Bid validity:
- (a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders, if required; or
 - (b) fails or refuses to furnish the Performance Security, in accordance with the Instruction to Bidders.

we undertake to pay to the Employer up to the above amount upon receipt of his first written demand, without the Employer having to substantiate his demand, provided that in his demand the Employer will note that the amount claimed by him is due to him owing to the occurrence of one or any of the four conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date _____⁴ days after the deadline for submission of Bids as such deadline is stated in the Instructions to Bidders or as it

² Insert name of the Bidder, which in the case of a joint venture shall be (a) the name of the joint venture that submits the bid if the JV has been constituted into a legally enforceable JV, or (b) the names of all future members of the JV as named in the letter of intent to execute the JV Agreement submitted by the bidder alongwith its bid.

³ The Guarantor should insert the amount of the guarantee in words and figures denominated in Bhutann Rupees. This figure should be the same as shown in Clause 5.5 of the Instructions to Bidders.

⁴ 45 days after the end of the validity period of the Bid.

may be extended by the Employer, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this guarantee should reach the Bank not later than the above date.

DATE _____ SIGNATURE OF THE BANK _____

WITNESS _____ SEAL _____

[signature, name, and address]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

Performance Security - Bank Guarantee

[Guarantor letterhead or SWIFT identifier code]

Performance Guarantee No.....[insert guarantee reference number]

Date.....[insert date of issue of the guarantee]

To: _____ [name of Employer]
_____ [address of Employer]

WHEREAS _____ [name and address of Contractor] (hereinafter called "the Contractor") has undertaken, in pursuance of Contract No. _____ dated _____ to execute _____ [name of Contract and brief description of Works] (hereinafter called "the Contract");

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, up to a total of _____ [amount of guarantee⁵] _____ [in words], such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of _____ [amount of guarantee] as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed thereunder or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until (i.e.) 28 days after the date of issue of the Certificate of Completion, and any demand for payment under it must be received by us at this office on or before that date.

Signature and seal of the guarantor _____
Name of Bank _____
Address _____
Date _____

⁵ An amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract and denominated in Bhutan Rupees.

Advance Payment Security

Demand Guarantee

[Guarantor letterhead or SWIFT identifier code]

Advance Payment Guarantee No.....[insert guarantee reference number]

Date.....[insert date of issue of the guarantee]

To: _____ [name of Employer]
_____ [address of Employer]
_____ [name of Contract]

Gentlemen:

In accordance with the provisions of the Articles of Agreement, Sub-clause 3 ("Advance Payment") of the above-mentioned Contract, _____ [name and address of Contractor] (hereinafter called "the Contractor") shall deposit with _____ [name of Employer] a bank guarantee to guarantee his proper and faithful performance under the said Clause of the Contract in an amount of _____ [amount of guarantee⁶] _____ [in words].

We, the _____ [bank or financial institution], as instructed by the Contractor, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to _____ [name of Employer] on his first demand without whatsoever right of objection on our part and without his first claim to the Contractor, in the amount not exceeding _____ [amount of guarantee] _____ [in words].

We further agree that no change or addition to or other modification of the terms of the Contract or of Works to be performed thereunder or of any of the Contract documents which may be made between _____ [name of Employer] and the Contractor, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until _____ [name of Employer] receives full repayment of the same amount from the Contractor. Consequently any demand for payment under this guarantee must be received by us at this office on or before that date.

Yours truly,

Signature and seal: _____
Name of Bank: _____
Address: _____
Date: _____

⁶ An amount shall be inserted by the bank representing the amount of the Advance Payment, and denominated in Bhutann Rupees.

Retention Money Security

Demand Guarantee

[Guarantor letterhead or SWIFT identifier code]

_____ *[Bank's name and address of issuing branch or office]*

Beneficiary: _____ *[Name and Address of Employer]*

Date: _____

RETENTION MONEY GUARANTEE NO.: _____

We have been informed that _____ *[name of contractor]* (hereinafter called "the Contractor") has entered into Contract No. _____ *[reference number of the contract]* dated _____ with you, for the execution of _____ *[name of contract and brief description of Works]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, when the Taking-Over Certificate has been issued for the Works and the first half of the Retention Money has been certified for payment, payment of _____ *[insert the second half of the Retention Money]* is to be made against a Retention Money guarantee.

At the request of the contractor, we _____ *[name of Bank]* hereby irrevocably undertake to pay you the sum or sums not exceeding in total an amount of _____ *[amount in Ngultrum]* (_____) *[amount in words⁷]* upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation under the Contract without cavil or argument.

It is a condition for any claim and payment under this guarantee to be made that the payment of the second half of the Retention Money referred to above must have been received by the Contractor on its account number _____ at _____ *[name and address of Bank]*.

This guarantee shall expire, at the latest, 21 days after the date when the Employer has received a copy of the Defects Liability Certificate issued by the Engineer. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

[Signature(s) and seal of the guarantor]

⁷ The Guarantor shall insert an amount representing the amount of the second half of the Retention Money.

Section C. Fraud and Corruption

(Text in this Section shall not be modified)

1. Purpose

- 1.1 The Bank's Anti-Corruption Guidelines and this annex apply with respect to procurement under Bank Investment Project Financing operations.

2. Requirements

- 2.1 The Bank requires that Borrowers (including beneficiaries of Bank financing); bidders (applicants/proposers), consultants, contractors and suppliers; any sub-contractors, sub-consultants, service providers or suppliers; any agents (whether declared or not); and any of their personnel, observe the highest standard of ethics during the procurement process, selection and contract execution of Bank-financed contracts, and refrain from Fraud and Corruption.

2.2 To this end, the Bank:

- a. Defines, for the purposes of this provision, the terms set forth below as follows:

- i. "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
- ii. "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;
- iii. "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
- iv. "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- v. "obstructive practice" is:
 - (a) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
 - (b) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under paragraph 2.2 e. below.

- b. Rejects a proposal for award if the Bank determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

- c. In addition to the legal remedies set out in the relevant Legal Agreement, may take other appropriate actions, including declaring misprocurement, if the Bank determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement process, selection and/or execution of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;
- d. Pursuant to the Bank's Anti- Corruption Guidelines and in accordance with the Bank's prevailing sanctions policies and procedures, may sanction a firm or individual, either indefinitely or for a stated period of time, including by publicly declaring such firm or individual ineligible (i) to be awarded or otherwise benefit from a Bank-financed contract, financially or in any other manner;⁸ (ii) to be a nominated⁹ sub-contractor, consultant, manufacturer or supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract; and (iii) to receive the proceeds of any loan made by the Bank or otherwise to participate further in the preparation or implementation of any Bank-financed project;
- e. Requires that a clause be included in bidding/request for proposals documents and in contracts financed by a Bank loan, requiring (i) bidders (applicants/proposers), consultants, contractors, and suppliers, and their sub-contractors, sub-consultants, service providers, suppliers, agents personnel, permit the Bank to inspect¹⁰ all accounts, records and other documents relating to the procurement process, selection and/ or contract execution, and to have them audited by auditors appointed by the Bank.

⁸ For the avoidance of doubt, a sanctioned party's ineligibility to be awarded a contract shall include, without limitation, (i) applying for pre-qualification, expressing interest in a consultancy, and bidding, either directly or as a nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.

⁹ A nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider (different names are used depending on the particular bidding document) is one which has been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

¹⁰ Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Bank or persons appointed by the Bank to address specific matters related to investigations/audits, such as evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copy or electronic format) deemed relevant for the investigation/audit, and making copies thereof as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.

Package 1- Construction of Centralized Packhouse with office including site development and construction of water supply at Samtse Dzongkhag Dzongkhag.

- **BOQ for Construction of Centralized Pack house**
- **BOQ for Electrification of Centralized Pack house**
- **BOQ for Office (Civil & Electrical)**
- **BOQ for Site development**

Package 1- Bill of Quantities (BoQ)

Name of Work		:- Construction of Centralized packhouse			
Location		:- Samtse Dzongkhag			
SL. No.	Description of Works	Quantity	Unit	Rate	Amount
1	Earth works in excavation in foundation trenches width > 1.5 m, area 10 sqm. on plan, including dressing & ramming, disposal and neat dressing of excavated earth within 50 m lead and 1.5 m lift. In ordinary Soil.	118.80	m3		
2	Excavation in foundation trenches or drains not exceeding 1.5m in width or area 10 sq.m on plan, including dressing & ramming, disposal of surplus soil within 50m lead & 1.5m lift. In Ordinary Soil. Long Walls	26.34	m3		
3	Filling of trenches, sides of foundations etc. in layers <200mm using selected excavated earth, ramming etc. within lead 50 m & lift 1.5m	5.60	m3		
4	Providing and laying Hand packed stone filling or soling with stones.	17.45	m3		
5	Providing and laying in position plain cement concrete excluding the cost of centering and shuttering - All work upto plinth level. 1:3:6 (1 cement : 3 sand : 6 graded crushed rock 20 mm nominal size). 75mm thick	2.02	m3		

6	Providing and laying in position plain cement concrete excluding the cost of centering and shuttering - All work upto plinth level. 1:2:4 (1 cement : 2 sand : 4 graded crushed rock 20 mm nominal size). Vertical main Posts	1.25	m3		
7	Providing and laying cement concrete flooring 1:2:4, finished with floating coat of neat cement 20mm aggregates, 100mm thick in rooms.($75+125/2=100$)	89.38	m2		
8	Providing & fixing centering and shuttering (formwork), including strutting, propping etc. and removal of formwork. Wall Top Main Posts foundations.	9.00	m2		
9	One - Brick Masonry (250mm). Providing & laying Second-Class Brick work in Foundation & Plinth. In cement mortar 1:5. Long Walls	8.38	m3		
10	Providing and laying Random Rubble Masonry with hard stone in foundation & plinth: In cement mortar 1:5.	16.81	m3		
11	Providing and laying Plinth Protection and grouted with fine sand mix including well rammed, finishing the top smooth. With 50mm thick cement concrete 1:3:6, 20mm aggregates, laid over 75mm thick layer of compacted gravel (40mm) in complete.	46.12	m2		

12	Roof Drain -Constructing second class brick masonry open surface drain in cement mortar 1:4 including earth work in excavation 100 mm thick concrete bed 1:5:10, 40mm aggregate and 25mm thick cement concrete 1:2:4, 12 mm aggregate for filling haunches including 12mm cement plastering 1:4 with a floating coat of neat cement and disposal of surplus earth etc. complete. 150mm wide x 200mm depth.	55.00	m1		
13	Steel work welded, in built up sections, trusses, frame-works including cutting, hoisting, fixing and appl. priming coat of red paint. In Tubular Sections. Main Vertical Posts.	2485.35	Kgs		
14	Providing & fixing Eaves board (225x25mm) with moulding fitted and fixed with necessary screws. Class 'B' (conifer).	49.20	m1		
15	Steel work welded, in built up sections, trusses, frame-works including cutting, hoisting, fixing and appl. priming coat of red paint. In Tees, angles, flats and channels. MS Flats for Eaves Board 150x50x4mm.	30.91	Kgs		
16	Steel work riveted or bolted, in built up sections, trusses, frame-works, including cutting, hoisting, fixing and appl. Priming. In Tees, angles, flats and channels. MS Flats 30x6mm for bolting Chain Link Mesh onto Posts/Beams.	433.93	Kgs		

17	Providing & fixing G.I chain-link mesh including fixing onto tubular posts/beams by spot welding in complete (excluding the cost of posts/struts, earthwork, concrete etc.). 4mm (8 SWG) x 50mm. Long Walls.	88.46	m2		
18	Providing & fixing 40mmx3mm M.S hold fast 400mm long/ as per instruction of competent authority embedded to concrete 1:3:6 block 300mmx100mmx150mm.	6.00	each		
19	Providing & fixing MS sliding door bolts fabricated in situ including welding of MS Flats as required in complete.	2.00	each		
20	Providing & fixing MS handle 150mm welded onto steel door in complete.	4.00	each		
21	Providing & fixing Pre Painted Steel Corrugated Roofing sheets, including bolts, hooks and nuts 8mm dia. with bitumen and G.I limpet washers filled with white lead for connection, excluding the cost of purlins, rafter and trusses. 25g (0.50mm).	146.15	m2		
22	Providing & fixing 600mm ridges or hips in Pre Painted Steel sheets, including bolts, hooks and nuts 8mm dia G.I limpet and bitumen washers for connection.. 25g. (0.50mm).	16.06	m1		
23	Providing & laying 20mm cement plaster in Cement Mortar 1:4.	70.02	m2		
24	Providing & laying cement plaster, finished with floating coat of neat cement 20mm plaster in C.M 1:4. Plinth Protection Height.	23.86	m2		

25	Providing and applying Neat Cement Punning over the plastered surface in two internal Drains.	16.50	m2		
26	Providing & fixing G.I. pipes including G.I. fittings & clamps & repair walls. 15mm.	30.00	m1		
27	Providing & fixing H.D.P.E pipes including clamps & repair walls etc. complete. 50mm as Waste Pipe.	3.00	m1		
28	Providing & fixing c.p. brass stop cock 15mm, standard, c.p knob in complete.	1.00	each		
29	Providing & fixing c.p. brass bibcock . 15mm, standard vertical, c.p knob.	1.00	each		
30	Providing & fixing white vitreous china wash basin, including C.I brackets, 15mm C.P. brass pillar taps, c.p. chain & rubber plug, 32mm pvc waste, 32mm dia. trap & union, repair walls. Flat back wash basin 630x450mm with single 15mm c.p. brass pillar taps in complete.	1.00	each		
31	Providing & fixing pedestals for basins, white vitreous china, recessed back for pipes and necessary fittings in complete.	1.00	each		
32	Providing & applying one coat of primers Wood work - pink primer. Eaves Boards	11.07	m2		
33	Providing and applying finishing coats Synthetic enamel, for steel & wood work, two coats on new work. Qty. same as above.	11.07	m2		
	Total Amount				

Package -1

Name of Work: Electrification of Centralised Pack House

Location : Samtse

S/No.	Description of Works	Quantity	Unit	Rate	Amount
1	Wiring for light, fans, call bell and 2 pin light socket outlet with 1.5 sq.mm 1.1kV grade, PVC insulated copper conductor cable in PVC surface casing capping/conduit including connections, painting, testing and commissioning etc. as required				
a	short point	2.00	point		
b	medium point	6.00	point		
c	Long point	20.00	point		
2	Wiring for 3 pin, 16 ampere plug point with 4 sq.mm 1.1kV grade, PVC insulated copper conductor cable in PVC surface casing capping/conduit with providing and fixing 3 pin, 16 ampere socket outlet and switch including earthing the third pin, connections, painting, testing and commissioning etc. as required				
a	short point	1.00	point		
b	medium point	1.00	point		
c	long point	10.00	point		
3	Wiring for lighting circuit with 1.1kV grade, PVC insulated copper conductor cable in PVC surface casing capping/conduit including connections, painting, testing and commissioning etc. as required				
a	2x2.5 sq.mm	120.00	m		
4	Wiring for points in excess length above long points with 1.1kV grade, PVC insulated copper conductor cable in PVC casing capping/conduit including connections, painting, testing and commissioning etc. as required				
a	2x1.5sq.mm	100.00	m		
b	2x4sq.mm	100.00	m		
5	Wiring for sub-main(three phase machines) with 1.1kV grade, PVC insulated copper conductor cable in PVC surface conduit including connections, painting, testing and commissioning etc. as required				
a	4x6 sq.mm	25.00	m		
6	P/F LED tube sets1x18/20W, 1200mm single rod with lamp, suitable for surface or pendant mounting	18.00	each		
a	P/F LED bulb 15Watt, 230V	10.00	each		
7	P/F MCB 6/10A SP, 240v AC with all accessories suitable to fix on din bar.	4.00	Nos.		
	16A SP for power	10.00	Nos.		
8	Supply of TPN distribution board (DIN type) with metal door, 415 volt A.C complete with all accessories without MCB/isolator/RCCB out going or incoming etc. as required				
a	6Way	1.00	each		

9	Providing and fixing earthing including all accessories, machinery enclosure, C.I cover having locking arrangement, watering pipe with excavation and refilling work including charcoal & salt complete as per the standard design. G.I earth plate (1.2x700x6mm)	1.00	each		
10	P/F connection to earth plate in 15mm G.I pipe from earth electrode as required as per guidance of standard earthing drawing. 4.06mm (8SWG) G.I wire	12.00	m		
11	P/F of wire on surface or in recessed for looping earthing as required. 1sq.mm	80.00	m		
12	P/F of 63A, 4 pole metal clad commercial/industrial type plug & socket outlet with earth terminal and incoming control gear 3phase 4p MCB etc as required, 415 volt A.C	1.00	each		
a	P/F of 20A double pole metal clad commercial/industrial type plug & socket outlet with earth terminal and incoming control gear MCB etc as required, 230 volt A.C	1.00	each		
13	Providing and fixing Wooden Board for main panel board complete including hinges, shutters etc (1.2x1.00x0.35)m	1.00	each		
14	P/F of 16sq.mm 4- Core 1.1KV grade PVC insulated and sheathed Aluminium conductor armoured power cables	30.00	m		
a	Laying of one number PVC insulated and sheathed power cable copper/aluminium, armoured/ un-armoured 1.1KV single core to four core direct in the ground including excavation, sand cushioning, protective covering and refilling the trenches etc. as required				
	Above 25sq.mm to 70sq.mm	30.00	m		
15	P/F of panel moulded case circuit breaker (MCCB) with electronic release, breaking capacity 16KA, 4 pole 415 volt A.C complete with all accessories etc. as required				
	125A	1.00	each		
16	P/F MCB 63Amps TPN, 415v AC with all accessories suitable to fix on din bar.	1.00	each		
17	Providing and fixing aluminium lugs for cable, 50sqmm	8.00	each		
18	P/F of ceiling fan 240 volt A.C 1400 rpm with all accessories such as down rod, sweep 3 Nos., canopy 2 Nos., condenser and fan body etc. complete as required				
a	1200mm sweep	2.00	each		
b	Supplying & fixing of ceiling fan regulator (electronic type) on existing metal box with fibre sheet cover (recessed or surface) including necessary cutting, connection testing etc. as required.	2.00	each		

19	P/F three phase energy meter	1.00	each		
20	P/F of exhaust fan 240 volt A.C 900 rpm with all accessories such as frame with arm 3 Nos., sweep 3 Nos., condenser and fan body, Aluminium louver set etc. complete as required. 380mm sweep	2.00	each		
21	p/F of pre-fabricated MS busbar chamber with copper busbar complete with all accessories etc. as required				
	4 strips, 600mm bar, 300A	1.00	set		
	Total:				

Package 1-Bill of Quantities**Name of work: Construction of Staff Quarter.****Agency: Department of Agricultural & Marketing Co-operatives(DAMC), MoAF.Location: Samtse**

S N	Item description	Quantity	Unit	Rate (Nu)	Amount (Nu)
1	Earth work in excavation over areas, depth >300mm, width >1.5m, area >10 Sq.m on plan, including disposal of excavated earth within 50m lead and 1.5m lift & disposed soil to be neatly dressed	128.00	cu.m		
2	Excavation in foundation trenches or drains not exceeding 1.5m in width or area 10 sq.m on plan, including dressing & ramming, disposal of surplus soil within 50m lead & 1.5m lift. Ordinary Soil	29.10	cu.m		
3	Filling of trenches, sides of foundations etc. in layers <200mm using selected excavated earth, ramming etc within lead 50 m & lift 1.5m	8.88	cum		
4	Providing and laying Plinth Protection and grouted with fine sand mix including wellrammed, finishing the top smooth With 50mm thick cement concrete 1:3:6, 20mm aggregates, laid over 75mm thick layer of compacted gravel (40mm)	41.04	sq.m		
5	Constructing second class brick masonry open surface drain in cement mortar 1:4 including earth work in excavation 100 mm thick concrete bed 1:5:10, 40mm aggregate and 25mm thick cement concrete 1:2:4, 12 mm aggregate for filling haunches including 12mm cement plastering 1:4 with a floating coat of neat cement and disposal of surplus earth etc. complete 100mm wide x 200mm depth	51.60	m		
6	Constructing Brick masonry manhole in cement mortar 1:5, R.C.C top slab with 1:2:4 20mm aggregates, foundation concrete 1:4:8 40mm aggregates, 12mm plaster in CM 1:3 finished with floating coat of neat cement and making channels in cement concrete 1:2:4 20mm aggregates, neatly finished complete Inside dimension 900 x 800mm & 450mm deep including C.I. cover & frame (weight >38 kg)	2.00	each		
7	Providing and laying in position plain cement concrete excluding the cost of centering and shuttering - All work upto plinth level. 1:3:6 (1 cement : 3 sand : 6 graded crushed rock 20 mm nominal size)	13.50	cu.m		
8	Providing & laying in position reinforced cement concrete work in suspended floor, roofs having slope upto 15 Degree, landings, balconies, shelves and chajjas upto floor five level excluding the cost of centering, shuttering and reinforcement 1:1.5:3 (1 cement : 1.5 sand : 3 graded crushed rock 20 mm nominal size)	0.26	cu.m		
9	Providing & fixing Thermo-Mechanically Treated reinforcement bar (Yield Strength 500MPa) for R.C.C work including cutting, bending, binding and placing in position complete	51.26	kg		

10	Providing & fixing centering and shuttering (formwork), including strutting, propping etc. and removal of formwork Suspended floor, roof, landing, shelves and their supports, balconies, chajjas, etc.	1.68	sq.m		
11	Providing & laying Second-Class Half-brick Masonry (125 mm) in superstructure below floor 2 level In cement mortar 1:4	33.32	sq.m		
12	Providing & laying Random Rubble Masonry with hard stone in foundation & plinth 1:5	31.49	cu.m		
13	Providing and laying Hand packed stone filling or soling with stones	20.55	cu.m		
14	Providing & fixing in position dressed wood work in frames of doors, windows, clerestory windows and other frames, wrought and framed Class 'B' (conifer)	6.24	cu.m		
15	Providing & fixing Eaves board (225x25mm) with moulding fitted and fixed with necessary screws Class 'B' (conifer)	51.70	m		
16	Providing & fixing Class 'B' (conifer) (undressed) in wall frames etc	1.51	cu.m		
17	Providing & fixing roof framing, in trusses, purlins, rafters, posts, post plates including hoisting, etc. (excluding steel items) Class 'B' (conifer)	4.10	cum		
18	Providing & fixing Plywood lining with necessary nails etc. including beading complete (excluding cost of frame) 6 mm, commercial	140.80	sq.m		
19	Providing & fixing 75mm thick split bamboo wall including grooving frames, 20mm plaster cement mortar 1:4 both sides (excluding cost of frame)	102.34	sq.m		
20	Providing & fixing 35mm thick Panelled or glazed doors and windows Shutters etc. complete including hinges Class 'B' (conifer)	28.78	sqm		
21	Providing & fixing M.S. round or square bars in window frames	23.73	kg		
22	Providing & fixing M.S. tower bolt (barrel type) with necessary screws etc. complete. 150mm	18.00	each		
	100mm W	24	each		
23	Providing & fixing M.S. sliding door bolt, bright finished, enamelled with necessary screws etc. complete. 200mm	10.00	each		
24	Providing & fixing M.S. handle with necessary screws etc. complete. 150mm	20.00	each		
	100mm W	24	each		
25	Providing & fixing M.S. hook-and-eye with necessary screws etc. complete. 100mm	24.00	each		
26	Providing & fixing M.S. round hold-down bolts with nuts and washer plates	24.00	kg		
27	Providing & fixing bolts of various sizes including nuts & washers	12.00	kg		
28	Providing, making and fixing M.S. straps, flats, sole plates etc.	7.00	kg		
29	Providing & laying cement concrete flooring 1:2:4, finished with floating coat of neat cement 20mm aggregates, 50mm thick	82.89	sq.m		
30	Providing & fixing Corrugated Galvanised Iron (CGI) sheeting, including bolts, hooks and nuts 8mm dia. with bitumen and G.I. limpet washers filled with white lead for connection, excluding the cost of purlins, rafter and trusses	166.00	sqm		
31	Providing & fixing 600mm ridges or hips in plain G.I. including bolts, hooks and nuts	16.60	m		

	8mm dia G.I limpet and bitumen washers for connection. 24g				
32	Providing & fixing G.I. pipes including G.I. fittings & clamps & repair walls. 15mm	20.00	m		
33	Providing & fixing Indian-type vitreous china w.c squatting pan, including 100 mm H.C.I.P or S trap, 10 lit low level vitreous china cistern & fittings, repair walls. 500mm, white	2.00	each		
34	Providing & fixing white vitreous china foot rests (250x130x30mm) for Indian W.C	2.00	each		
35	Providing & fixing Kitchen Sinks including all connections and fittings Stainless steel, 940 x 460 x 160 mm, single bowl.	2.00	each		
36	Providing & fixing c.p. brass stop cock 15mm, standard, c.p knob	2.00	each		
37	Providing & fixing P.V.C soil waste and vent pipes, single or double socketed, including pipe clip complete (excluding the cost of PVC fittings). 75mm dia	5.00	m		
38	Providing & fixing P.V.C soil waste and vent pipes, single or double socketed, including pipe clip complete (excluding the cost of PVC fittings). 110mm dia	20.00	m		
39	Providing & fixing P.V.C plain bend. 75mm dia	4.00	each		
40	Providing & fixing P.V.C plain bend. 110mm dia	4.00	each		
41	Providing & fixing PVC door bend: 110mm dia	2.00	each		
42	Providing & fixing P.V.C Nahani Trap 110mm inlet & 75mm outlet	4.00	each		
43	Constructing Soak Pit Size 1200x1200x1200mm, filled with brick bats including 100mm SW drain pipe X 1200mm long	1.00	each		
44	Constructing Septic Tanks, in R.R Masonry in cement mortar 1:6, including fittings, C.I cover with frame, 40mm thick concrete flooring (40mm aggregates) cement plaster concrete base in C.C 1:4:8 etc. complete as per standard design. 15 users	1.00	each		
45	Providing & laying 15mm cement plaster on rough side of single or half-brick wall. CM 1:4	54.82	sq.m		
46	Providing & laying cement plaster, finished with floating coat of neat cement 12mm plaster in C.M 1:4	50.10	sq.m		
47	Providing and applying finishing coats Dry distemper, two coats on new work, including white priming coat	315.00	sq.m		
48	Providing and applying finishing coats Synthetic enamel, for steel & wood work, two coats on new work	173.34	sq.m		
49	Providing, preparing and applying Yutshon painting (plain) Washable	217.86	sq.m		
50	Providing, making & fixing woodwork dressed in traditional cornices complete as per standard design in Class 'B' (conifer), including applying wood preservative on unexposed surfaces, excluding decorative painting (Measurement to be taken along the cornice and wall junction line) For single-storied structure including phana	38.00	m		

51	Providing, preparing and applying Sumdang washable painting Ding	23.94	sq.m		
52	Providing & fixing white vitreous china wash basin, including C.I brackets, 15mm C.P.brass pillar taps, c.p. chain & rubber plug, 32mm pvc waste, 32mm dia. trap & union, repair wall Flat back wash basin 550x400mm with single 15mm c.p. brass pillar tap	2.00	each		
53	Providing & fixing pedestals for basins, white vitreous china, recessed back for pipes and necessary fittings	2.00	each		

Name of Work: Electrification of 2unit residence under DAMC

Location : Samtse

S/No.	Description of Works	Quantity	Unit	Rate	Amount
1	Wiring for light, fans, call bell and 2 pin light socket outlet with 1.5 sq.mm 1.1kV grade, PVC insulated copper conductor cable in PVC surface conduit/casing capping including connections, painting, testing and commissioning etc. as required				
a	short point	15.00	point		
b	medium point	7.00	point		
c	Long point	2.00	point		
2	Wiring for 3 pin, 16 ampere plug point with 4 sq.mm 1.1kV grade, PVC insulated copper conductor cable in PVC surface conduit/casing capping with providing and fixing 3 pin, 16 ampere socket outlet and switch including wiring/earthing the third pin, connections, painting, testing and commissioning etc. as required				
a	short point	1.00	point		
b	medium point	2.00	point		
c	long point	15.00	point		
3	Wiring for points in excess length above long points with 1.1kV grade, PVC insulated copper conductor cable in PVC surface conduit/casing capping including connections, including wiring/earthing the third pin painting, testing and commissioning etc. as required				
	2x4sq.mm	80.00	m		
4	Wiring for lighting circuit with 1.1kV grade, PVC insulated copper conductor cable in PVC surface conduit/conduite including connections, painting, testing and commissioning etc. as required				
	2x2.5sq.mm	70.00	m		
5	P/F LED tube rod set with 1x18W, 1200mm single rod.	8.00	each		
6	supply MCB 6A 240v AC with all accessories suitable to fix on din bar.	4.00	Nos.		
	16A SP for power	16.00	Nos.		
7	Supply & Installation, testing & commissioning of miniature circuit breaker (MCB) 4 pole & neutral, 415 volt A.C complete with all accessories suitable to to fix on a din-bar etc. as required. 100Ampere	1.00	Nos.		
	P/F of 63amps MCP double pole, 230 volt A.C complete with all accessories suitable to to fix on a din-bar etc. as required	2.00	Nos.		
8	P/F LED lamp, 15W,220V.	10.00	each		

9	P/F of SPN distribution board (DIN type) without door, 230 volt A.C complete with all accessories without MCB/isolator/RCCB out going or incoming etc. as required				
	12way	2.00	each		
10	P/F of 4Core 16sq.mm 1.1KV grade PVC insulated and sheathed Aluminium conductor armoured power cables	50.00	m		
	P/F of 2- Core 16sq.mm 1.1KV grade PVC insulated and sheathed Aluminium conductor unarmoured power cables	25.00	m		
11	Laying of one number PVC insulated and sheathed power cable copper/aluminium,armoured/un-armoured 1.1KV single core to four core direct in the ground including excavation, sand cushioning, protective covering and refilling the trenches etc. as required. Above Above 10sq.mm to 16sq.mm	40.00	m		
12	Providing and fixing of earthing including all accessories, machinery enclosure, C.I cover plate having locking arrangement, watering pipe with excavation and refilling work including charcoal or coke and salt complete as required as per standard earthing drawing				
	With G.I earth plate 600x600x6mm	1.00	each		
13	Providing and laying earth connection from earth electrodes in 15mm dia G.I pipe from earth electrodes as required as per guidance of standard earthing drawing				
	With 4.06mm dia (8SWG) G.I wire	20.00	m		
14	P/F single phase Energy meter from BPC & submit the receipt to the management	2.00	each		
15	P/F of Aluminium alloy/wrought aluminium busbar complete with all accessories etc. to accomodate in prefabricated MS cubical panel board as required. 4 strips, 300mm bar, 100A	1.00	each		
16	P/F of wooden board for main panel board purpose with size of 1x0.7x.3m with locking arrangement.	1.00	each		
17	Supplying, installation, testing & commissioning of ceiling fan 240 volt A.C 1400 rpm with all accessories such as down rod, sweep 3 Nos.,canopy 2 Nos., condenser and fan body etc. complete as required. 1200mm sweep	9.00	each		
	Total:				

Package 1- Bill of Quantities (BoQ)

Name of Work :- Water supply at Integrated Cold Stores and Centralized Pack House Site
Location :- Samtse Dzongkhag

Sl no	Particular	Specification	Qty.	Unit	Rate	Amount
1	HDPE Pipe	32mm 10Kg/cm2	1330	Mtr		
2	GI Pipe/PGI Pipe	GI Nipples 1"	3	Pcs		
3	GI Pipe/PGI Pipe	GI Nipples 2"	2	Pcs		
4	Materials	Nails-3"	1	Kg		
5	Materials	Nails-2"	1	Kg		
6	Materials	Nails-U	2	Kg		
7	Materials	Prefab Manhole cover & sla	2	Set		
8	Materials	Wire Barbed (1 Roll=30Kg)	1	Roll		
9	Materials	Wire Mesh 2MM	2	MTR		
		Total Amount				

BOQ-Site development for Samtse

Sl no	BSR Code	Description	Qty.	Unit	Rate	Amount (Nu)
		SUB STRUCTURE				
1	EW0030	Earth work in excavation over areas, depth >300mm, width >1.5m, area >10 Sq.m on plan, including disposal of excavated earth within 50m lead and 1.5m lift & disposed soil to be neatly dressed; All types of soils including rock blasting	561.00	cu.m		
2	EW0105	Excavation in foundation trenches or drains not exceeding 1.5m in width or area 10 sq.m on plan, including dressing & ramming, disposal of surplus soil within 50m lead & 1.5m lift; All types of soil	561.00	cu.m		
3	SM0072	Providing and laying Hand packed stone filling or soling with stones	39.90	cu m		
4	CW0005	Providing and laying in position plain cement (PCC) concrete excluding the cost of centering and shuttering - All work upto plinth level. [1:3:6 (1 cement : 3 sand : 6 graded crushed rock 20 mm nominal size)]	59.40	cu m		
5	RC0090	Providing & fixing centering and shuttering (formwork), including strutting, propping etc. and removal of formwork [Foundation and plinth etc.]	17.50	sqm		
		TOTAL AMOUNT				

Package 2- Construction of Centralized Packhouse with office including site development and dismantling of existing structure at Dagana Dzongkhag Dzongkhag.

- **BOQ for Construction of Centralized Pack house**
- **BOQ for Electrification of Centralized Pack house**
- **BOQ for Office (Civil & Electrical)**
- **BOQ for Site development and wall**

Package 2- Bill of Quantities (BoQ)

Name of Work		:- Construction of Centralized packhouse			
Location		:- Dagana Dzongkhag			
SL. No.	Description of Works	Quantity	Unit	Rate	Amount
1	Earth works in excavation in foundation trenches width > 1.5 m, area 10 sqm. on plan, including dressing & ramming, disposal and neat dressing of excavated earth within 50 m lead and 1.5 m lift. In ordinary Soil.	118.80	m3		
2	Excavation in foundation trenches or drains not exceeding 1.5m in width or area 10 sq.m on plan, including dressing & ramming, disposal of surplus soil within 50m lead & 1.5m lift. In Ordinary Soil. Long Walls	26.34	m3		
3	Filling of trenches, sides of foundations etc. in layers <200mm using selected excavated earth, ramming etc. within lead 50 m & lift 1.5m	5.60	m3		
4	Providing and laying Hand packed stone filling or soling with stones.	17.45	m3		
5	Providing and laying in position plain cement concrete excluding the cost of centering and shuttering - All work upto plinth level. 1:3:6 (1 cement : 3 sand : 6 graded crushed rock 20 mm nominal size). 75mm thick	2.02	m3		
6	Providing and laying in position plain cement concrete excluding the cost of centering and shuttering - All work upto plinth level. 1:2:4 (1 cement : 2 sand : 4 graded crushed rock 20 mm nominal size). Vertical main Posts	1.25	m3		

7	Providing and laying cement concrete flooring 1:2:4, finished with floating coat of neat cement 20mm aggregates, 100mm thick in rooms. (75+125/2= 100)	89.38	m2		
8	Providing & fixing centering and shuttering (formwork), including strutting, propping etc. and removal of formwork. Wall Top Main Posts foundations.	9.00	m2		
9	One - Brick Masonry (250mm). Providing & laying Second-Class Brick work in Foundation & Plinth. In cement mortar 1:5. Long Walls	8.38	m3		
10	Providing and laying Random Rubble Masonry with hard stone in foundation & plinth: In cement mortar 1:5.	16.81	m3		
11	Providing and laying Plinth Protection and grouted with fine sand mix including well rammed, finishing the top smooth. With 50mm thick cement concrete 1:3:6, 20mm aggregates, laid over 75mm thick layer of compacted gravel (40mm) in complete.	46.12	m2		
12	Roof Drain -Constructing second class brick masonry open surface drain in cement mortar 1:4 including earth work in excavation 100 mm thick concrete bed 1:5:10, 40mm aggregate and 25mm thick cement concrete 1:2:4, 12 mm aggregate for filling haunches including 12mm cement plastering 1:4 with a floating coat of neat cement and disposal of surplus earth etc. complete. 150mm wide x 200mm depth.	55.00	m1		
13	Steel work welded, in built up sections, trusses, frame-works including cutting, hoisting, fixing and appl. priming coat of red paint. In Tubular Sections. Main Vertical Posts.	2485.35	Kgs		
14	Providing & fixing Eaves board (225x25mm) with moulding fitted and fixed with necessary screws. Class 'B' (conifer).	49.20	m1		

15	Steel work welded, in built up sections, trusses, frame-works including cutting, hoisting, fixing and appl. priming coat of red paint. In Tees, angles, flats and channels. MS Flats for Eaves Board 150x50x4mm.	30.91	Kgs		
16	Steel work riveted or bolted, in built up sections, trusses, frame-works, including cutting, hoisting, fixing and appl. Priming. In Tees, angles, flats and channels. MS Flats 30x6mm for bolting Chain Link Mesh onto Posts/Beams.	433.93	Kgs		
17	Providing & fixing G.I chain-link mesh including fixing onto tubular posts/beams by spot welding in complete (excluding the cost of posts/struts, earthwork, concrete etc.). 4mm (8 SWG) x 50mm. Long Walls.	88.46	m2		
18	Providing & fixing 40mmx3mm M.S hold fast 400mm long/ as per instruction of competent authority embedded to concrete 1:3:6 block 300mmx100mmx150mm.	6.00	each		
19	Providing & fixing MS sliding door bolts fabricated in situ including welding of MS Flats as required in complete.	2.00	each		
20	Providing & fixing MS handle 150mm welded onto steel door in complete.	4.00	each		
21	Providing & fixing Pre Painted Steel Corrugated Roofing sheets, including bolts, hooks and nuts 8mm dia. with bitumen and G.I limpet washers filled with white lead for connection, excluding the cost of purlins, rafter and trusses. 25g (0.50mm).	146.15	m2		
22	Providing & fixing 600mm ridges or hips in Pre Painted Steel sheets, including bolts, hooks and nuts 8mm dia G.I limpet and bitumen washers for connection.. 25g. (0.50mm).	16.06	m1		
23	Providing & laying 20mm cement plaster in Cement Mortar 1:4.	70.02	m2		
24	Providing & laying cement plaster, finished with floating coat of neat cement 20mm plaster in C.M 1:4. Plinth Protection Height.	23.86	m2		

25	Providing and applying Neat Cement Punning over the plastered surface in two internal Drains.	16.50	m2		
26	Providing & fixing G.I. pipes including G.I. fittings & clamps & repair walls. 15mm.	30.00	m1		
27	Providing & fixing H.D.P.E pipes including clamps & repair walls etc. complete. 50mm as Waste Pipe.	3.00	m1		
28	Providing & fixing c.p. brass stop cock 15mm, standard, c.p knob in complete.	1.00	each		
29	Providing & fixing c.p. brass bibcock . 15mm, standard vertical, c.p knob.	1.00	each		
30	Providing & fixing white vitreous china wash basin, including C.I brackets, 15mm C.P. brass pillar taps, c.p. chain & rubber plug, 32mm pvc waste, 32mm dia. trap & union, repair walls. Flat back wash basin 630x450mm with single 15mm c.p. brass pillar taps in complete.	1.00	each		
31	Providing & fixing pedestals for basins, white vitreous china, recessed back for pipes and necessary fittings in complete.	1.00	each		
32	Providing & applying one coat of primers Wood work - pink primer. Eaves Boards	11.07	m2		
33	Providing and applying finishing coats Synthetic enamel, for steel & wood work, two coats on new work. Qty. same as above.	11.07	m2		
	Total Amount				

Package 2

Name of Work: Electrification of Centralised Pack House

Location : Dagana

S/No.	Description of Works	Quantity	Unit	Rate	Amount
1	Wiring for light, fans, call bell and 2 pin light socket outlet with 1.5 sq.mm 1.1kV grade, PVC insulated copper conductor cable in PVC surface casing capping/conduit including connections, painting, testing and commissioning etc. as required				
a	short point	2.00	point		
b	medium point	6.00	point		
c	Long point	20.00	point		
2	Wiring for 3 pin, 16 ampere plug point with 4 sq.mm 1.1kV grade, PVC insulated copper conductor cable in PVC surface casing capping/conduit with providing and fixing 3 pin, 16 ampere socket outlet and switch including earthing the third pin, connections, painting, testing and commissioning etc. as required				
a	short point	1.00	point		
b	medium point	1.00	point		
c	long point	10.00	point		
3	Wiring for lighting circuit with 1.1kV grade, PVC insulated copper conductor cable in PVC surface casing capping/ conduit including connections, painting, testing and commissioning etc. as required				
	2x2.5 sq.mm	120.00	m		
4	Wiring for points in excess length above long points with 1.1kV grade, PVC insulated copper conductor cable in PVC casing capping/conduit including connections, painting, testing and commissioning etc. as required				
	2x1.5sq.mm	100.00	m		
	2x4sq.mm	100.00	m		
5	Wiring for sub-main(three phase machines) with 1.1kV grade, PVC insulated copper conductor cable in PVC surface conduit including connections, painting, testing and commissioning etc. as required				
	4x6 sq.mm	25.00	m		

6	P/F LED tube sets 1x18/20W, 1200mm single rod with lamp, suitable for surface or pendant mounting	18.00	each		
	P/F LED bulb 15Watt, 230V	10.00	each		
7	P/F MCB 6/10A SP, 240v AC with all accessories suitable to fix on din bar.	4.00	Nos.		
	16A SP for power	10.00	Nos.		
8	Supply of TPN distribution board (DIN type) with metal door, 415 volt A.C complete with all accessories without MCB/isolator/RCCB out going or incoming etc. as required				
	6Way	1.00	each		
9	Providing and fixing earthing including all accessories, machinery enclosure, C.I cover having locking arrangement, watering pipe with excavation and refilling work including charcoal & salt complete as per the standard design. G.I earth plate (1.2x700x6mm)	1.00	each		
10	P/F connection to earth plate in 15mm G.I pipe from earth electrode as required as per guidance of standard earthing drawing. 4.06mm (8SWG) G.I wire	12.00	m		
11	P/F of wire on surface or in recessed for looping earthing as required. 1sq.mm	80.00	m		
12	P/F of 63A, 4 pole metal clad commercial/industrial type plug & socket outlet with earth terminal and incoming control gear 3phase 4p MCB etc as required, 415 volt A.C	1.00	each		
b	P/F of 20A double pole metal clad commercial/industrial type plug & socket outlet with earth terminal and incoming control gear MCB etc as required, 230 volt A.C	1.00	each		
13	Providing and fixing Wooden Board for main panel board complete including hinges, shutters etc (1.2x1.00x0.35)m	1.00	each		
14	P/F of 16sq.mm 4- Core 1.1KV grade PVC insulated and sheathed Aluminium conductor armoured power cables	30.00	m		

a	Laying of one number PVC insulated and sheathed power cable copper/aluminium, armoured/ un-armoured 1.1KV single core to four core direct in the ground including excavation, sand cushioning, protective covering and refilling the trenches etc. as required				
	Above 25sq.mm to 70sq.mm	30.00	m		
15	P/F of panel moulded case circuit breaker (MCCB) with electronic release, breaking capacity 16KA, 4 pole 415 volt A.C complete with all accessories etc. as required				
	125A	1.00	each		
16	P/F MCB 63Amps TPN, 415v AC with all accessories suitable to fix on din bar.	1.00	each		
17	Providing and fixing aluminium lugs for cable, 50sqmm	8.00	each		
18	P/F of ceiling fan 240 volt A.C 1400 rpm with all accessories such as down rod, sweep 3 Nos., canopy 2 Nos., condenser and fan body etc. complete as required				
a	1200mm sweep	2.00	each		
b	Supplying & fixing of ceiling fan regulator(electronic type) on existing metal box with fibre sheet cover (recessed or surface) including necessary cutting, connection testing etc. as required.	2.00	each		
19	P/F three phase energy meter	1.00	each		
20	P/F of exhaust fan 240 volt A.C 900 rpm with all accessories such as frame with arm 3 Nos., sweep 3 Nos., condenser and fan body, Aluminium louvers etc. complete as required. 380mm sweep	2.00	each		
21	p/F of pre-fabricated MS busbar chamber with copper busbar complete with all accessories etc. as required				
	4 strips, 600mm bar, 300A	1.00	set		
	Total:				

Bill of Quantities

Name of work: Construction of Staff Quarter.

Agency: Department of Agricultural & Marketing Co-operatives(DAMC), MoAF.

Location: Dagapela, Thimphu

SN	Item description	Quantity	/Unit	Rate (Nu)	Amount (Nu)
1	Earth work in excavation over areas, depth >300mm, width >1.5m, area >10 Sq.m on plan, including disposal of excavated earth within 50m lead and 1.5m lift & disposed soil to be neatly dressed	128.00	cu.m		
2	Excavation in foundation trenches or drains not exceeding 1.5m in width or area 10 sq.m on plan, including dressing & ramming, disposal of surplus soil within 50m lead & 1.5m lift. Ordinary Soil	29.10	cu.m		
3	Filling of trenches, sides of foundations etc. in layers <200mm using selected excavated earth, ramming etc within lead 50 m & lift 1.5m	8.88	cum		
4	Providing and laying Plinth Protection and grouted with fine sand mix including well rammed, finishing the top smooth With 50mm thick cement concrete 1:3:6, 20mm aggregates, laid over 75mm thick layer of compacted gravel (40mm)	41.04	sq.m		
5	Constructing second class brick masonry open surface drain in cement mortar 1:4 including earth work in excavation 100 mm thick concrete bed 1:5:10, 40mm aggregate and 25mm thick cement concrete 1:2:4, 12 mm aggregate for filling haunches including 12mm cement plastering 1:4 with a floating coat of neat cement and disposal of surplus earth etc. complete 100mm wide x 200mm depth	51.60	m		
6	Constructing Brick masonry manhole in cement mortar 1:5, R.C.C top slab with 1:2:4 20mm aggregates, foundation concrete 1:4:8 40mm aggregates, 12mm plaster in CM 1:3 finished with floating coat of neat cement and making channels in cement concrete 1:2:4 20mm aggregates, neatly finished complete inside dimension 900 x 800mm & 450mm deep including C.I. cover & frame (weight >38 kg)	2.00	each		
7	Providing and laying in position plain cement concrete excluding the cost of centering and shuttering - All work upto plinth level. 1:3:6 (1 cement : 3 sand : 6 graded crushed rock 20 mm nominal size)	13.50	cu.m		
8	Providing & laying in position reinforced cement concrete work in suspended floor, roofs having slope upto 15 Degree, landings, balconies, shelves and chajjas upto floor five level excluding the cost of centering, shuttering and reinforcement 1:1.5:3 (1 cement : 1.5 sand : 3 graded crushed rock 20 mm nominal size)	0.26	cu.m		
9	Providing & fixing Thermo-Mechanically Treated reinforcement bar (Yield Strength 500 MPa) for R.C.C work including cutting, bending, binding and placing in position complete	51.26	kg		
10	Providing & fixing centering and shuttering (formwork), including strutting, propping etc. and removal of formwork Suspended floor, roof, landing, shelves and their supports, balconies, chajjas, etc.	1.68	sq.m		
11	Providing & laying Second-Class Half-brick Masonry (125 mm) in superstructure below floor 2 level In cement mortar 1:4	33.32	sq.m		
12	Providing & laying Random Rubble Masonry with hard stone in foundation & plinth 1:5	31.49	cu.m		
13	Providing and laying Hand packed stone filling or soling with stones	20.55	cu.m		
14	Providing & fixing in position dressed wood work in frames of doors, windows, clerestory windows and other frames, wrought and framed Class 'B' (conifer)	6.24	cu.m		
15	Providing & fixing Eaves board (225x25mm) with moulding fitted and fixed with necessary screws Class 'B' (conifer)	51.70	m		
16	Providing & fixing Class 'B' (conifer) (undressed) in wall frames etc	1.51	cu.m		
17	Providing & fixing roof framing, in trusses, purlins, rafters, posts, post plates including hoisting, etc. (excluding steel items) Class 'B' (conifer)	4.10	cum		
18	Providing & fixing Plywood lining with necessary nails etc. including beading complete (excluding cost of frame) 6 mm, commercial	140.80	sq.m		
19	Providing & fixing 75mm thick split bamboo wall including grooving frames, 20mm plaster cement mortar 1:4 both sides (excluding cost of frame)	102.34	sq.m		

20	Providing & fixing 35mm thick Panelled or glazed doors and windows Shutters etc. complete including hinges Class 'B' (conifer)	28.78	sqm		
21	Providing & fixing M.S. round or square bars in window frames	23.73	kg		
22	Providing & fixing M.S. tower bolt (barrel type) with necessary screws etc. complete. 150mm	18.00	each		
	100mm W	24	each		
23	Providing & fixing M.S. sliding door bolt, bright finished, enamelled with necessary screws etc. complete. 200mm	10.00	each		
24	Providing & fixing M.S. handle with necessary screws etc. complete. 150mm	20.00	each		
	100mm W	24	each		
25	Providing & fixing M.S. hook-and-eye with necessary screws etc. complete. 100mm	24.00	each		
26	Providing & fixing M.S. round hold-down bolts with nuts and washer plates	24.00	kg		
27	Providing & fixing bolts of various sizes including nuts & washers	12.00	kg		
28	Providing, making and fixing M.S. straps, flats, sole plates etc.	7.00	kg		
29	Providing & laying cement concrete flooring 1:2:4, finished with floating coat of neat cement 20mm aggregates, 50mm thick	82.89	sq.m		
30	Providing & fixing Corrugated Galvanised Iron (CGI) sheeting, including bolts, hooks and nuts 8mm dia. with bitumen and G.I. limpet washers filled with white lead for connection, excluding the cost of purlins, rafter and trusses	166.00	sqm		
31	Providing & fixing 600mm ridges or hips in plain G.I. including bolts, hooks and nuts 8mm dia G.I. limpet and bitumen washers for connection. 24g	16.60	m		
32	Providing & fixing G.I. pipes including G.I. fittings & clamps & repair walls. 15mm	20.00	m		
33	Providing & fixing Indian-type vitreous china w.c squatting pan, including 100 mm H.C.I P or S trap, 10 lit low level vitreous china cistern & fittings, repair walls. 500mm, white	2.00	each		
34	Providing & fixing white vitreous china foot rests (250x130x30mm) for Indian W.C	2.00	each		
35	Providing & fixing Kitchen Sinks including all connections and fittings Stainless steel, 940 x 460 x 160 mm, single bowl.	2.00	each		
36	Providing & fixing c.p. brass stop cock 15mm, standard, c.p knob	2.00	each		
37	Providing & fixing P.V.C soil waste and vent pipes, single or double socketed, including pipe clip complete (excluding the cost of PVC fittings). 75mm dia	5.00	m		
38	Providing & fixing P.V.C soil waste and vent pipes, single or double socketed, including pipe clip complete (excluding the cost of PVC fittings). 110mm dia	20.00	m		
39	Providing & fixing P.V.C plain bend. 75mm dia	4.00	each		
40	Providing & fixing P.V.C plain bend. 110mm dia	4.00	each		
41	Providing & fixing PVC door bend: 110mm dia	2.00	each		
42	Providing & fixing P.V.C Nahani Trap 110mm inlet & 75mm outlet	4.00	each		
43	Constructing Soak Pit Size 1200x1200x1200mm, filled with brick bats including 100mm SW drain pipe X 1200mm long	1.00	each		
44	Constructing Septic Tanks, in R.R Masonry in cement mortar 1:6, including fittings, C.I cover with frame, 40mm thick concrete flooring (40mm aggregates) cement plaster concrete base in C.C 1:4:8 etc. complete as per standard design. 15 users	1.00	each		

45	Providing & laying 15mm cement plaster on rough side of single or half-brick wall. CM 1:4	54.82	sq.m		
46	Providing & laying cement plaster, finished with floating coat of neat cement 12mm plaster in C.M 1:4	50.10	sq.m		
47	Providing and applying finishing coats Dry distemper, two coats on new work, including white priming coat	315.00	sq.m		
48	Providing and applying finishing coats Synthetic enamel, for steel & wood work, two coats on new work	173.34	sq.m		
49	Providing, preparing and applying Yutshon painting (plain) Washable	217.86	sq.m		
50	Providing, making & fixing woodwork dressed in traditional cornices complete as per standard design in Class 'B' (conifer), including applying wood preservative on unexposed surfaces, excluding decorative painting (Measurement to be taken along the cornice and wall junction line) For single-storied structure including phana	38.00	m		
51	Providing, preparing and applying Sumdang washable painting Ding	23.94	sq.m		
52	Providing & fixing white vitreous china wash basin, including C.I brackets, 15mm C.P. brass pillar taps, c.p. chain & rubber plug, 32mm pvc waste, 32mm dia. trap & union, repair wall Flat back wash basin 550x400mm with single 15mm c.p. brass pillar tap	2.00	each		
53	Providing & fixing pedestals for basins, white vitreous china, recessed back for pipes and necessary fittings	2.00	each		
54	Demolishing Zero Energy Cold Store (ZECS) stone rubble masonry in mud mortar with shinglep roofing, RCC beam, lintel band, RCC post for stair case together with one semi permanent staff quarter and disposal of useful material within 50m lead.	1.00	No		
		Total Civil			
-B)		Total Electrical			
-C)		Total Retaining wall			
		Grand Total			

Name of Work: Electrification of 2unit residence under DAMC

Location : Dagana

S/No.	Description of Works	Quantity	Unit	Rate	Amount
1	Wiring for light, fans, call bell and 2 pin light socket outlet with 1.5 sq.mm 1.1kV grade, PVC insulated copper conductor cable in PVC surface conduit/casing capping including connections, painting, testing and commissioning etc. as required				
a	short point	15.00	point		
b	medium point	7.00	point		
c	Long point	2.00	point		
2	Wiring for 3 pin, 16 ampere plug point with 4 sq.mm 1.1kV grade, PVC insulated copper conductor cable in PVC surface conduit/casing capping with providing and fixing 3 pin, 16 ampere socket outlet and switch including wiring/earthing the third pin, connections, painting, testing and commissioning etc. as required				
a	short point	1.00	point		
b	medium point	2.00	point		
c	long point	15.00	point		
3	Wiring for points in excess length above long points with 1.1kV grade, PVC insulated copper conductor cable in PVC surface conduit/casing capping including connections, including wiring/earthing the third pin painting, testing and commissioning etc. as required				
	2x4sq.mm	80.00	m		
4	Wiring for lighting circuit with 1.1kV grade, PVC insulated copper conductor cable in PVC surface conduit/conduite including connections, painting, testing and commissioning etc. as required				
	2x2.5sq.mm	70.00	m		
5	P/F LED tube rod set with 1x18W, 1200mm single rod.	8.00	each		
6	supply MCB 6A 240v AC with all accessories suitable to fix on din bar.	4.00	Nos.		
	16A SP for power	16.00	Nos.		
7	Supply & Installation, testing & commissioning of miniature circuit breaker (MCB) 4 pole & neutral, 415 volt A.C complete with all accessories suitable to to fix on a din-bar etc. as required. 100Ampere	1.00	Nos.		
	P/F of 63amps MCP double pole, 230 volt A.C complete with all accessories suitable to to fix on a din-bar etc. as required	2.00	Nos.		
8	P/F LED lamp, 15W,220V.	10.00	each		

9	P/F of SPN distribution board (DIN type) without door, 230 volt A.C complete with all accessories without MCB/isolator/RCCB out going or incoming etc. as required				
	12way	2.00	each		
10	P/F of 4Core 16sq.mm 1.1KV grade PVC insulated and sheathed Aluminium conductor armoured power cables	50.00	m		
	P/F of 2- Core 16sq.mm 1.1KV grade PVC insulated and sheathed Aluminium conductor unarmoured power cables	25.00	m		
11	Laying of one number PVC insulated and sheathed power cable copper/aluminium,armoured/un-armoured 1.1KV single core to four core direct in the ground including excavation, sand cushioning, protective covering and refilling the trenches etc. as required. Above Above 10sq.mm to 16sq.mm	40.00	m		
12	Providing and fixing of earthing including all accessories, machinery enclosure, C.I cover plate having locking arrangement, watering pipe with excavation and refilling work including charcoal or coke and salt complete as required as per standard earthing drawing				
	With G.I earth plate 600x600x6mm	1.00	each		
13	Providing and laying earth connection from earth electrodes in 15mm dia G.I pipe from earth electrodes as required as per guidance of standard earthing drawing				
	With 4.06mm dia (8SWG) G.I wire	20.00	m		
14	P/F single phase Energy meter from BPC & submit the receipt to the management	2.00	each		
15	P/F of Aluminium alloy/wrought aluminium busbar complete with all accessories etc. to accomodate in prefabricated MS cubical panel board as required. 4 strips, 300mm bar, 100A	1.00	each		
16	P/F of wooden board for main panel board purpose with size of 1x0.7x.3m with locking arrangement.	1.00	each		
17	Supplying, installation, testing & commissioning of ceiling fan 240 volt A.C 1400 rpm with all accessories such as down rod, sweep 3 Nos.,canopy 2 Nos., condenser and fan body etc. complete as required. 1200mm sweep	9.00	each		
	Total:				

BOQ-Site development for Dagana

Sl no	BSR Code	Description	Qty.	Unit	Rate	Amount (Nu)
		SUB STRUCTURE				
1	EW0030	Earth work in excavation over areas, depth >300mm, width >1.5m, area >10 Sq.m on plan, including disposal of excavated earth within 50m lead and 1.5m lift & disposed soil to be neatly dressed; All types of soils including rock blasting	561.00	cu.m		
2	EW0105	Excavation in foundation trenches or drains not exceeding 1.5m in width or area 10 sq.m on plan, including dressing & ramming, disposal of surplus soil within 50m lead & 1.5m lift; All types of soil	561.00	cu.m		
3	SM0072	Providing and laying Hand packed stone filling or soling with stones	39.90	cu m		
4	CW0005	Providing and laying in position plain cement (PCC) concrete excluding the cost of centering and shuttering - All work upto plinth level. [1:3:6 (1 cement : 3 sand : 6 graded crushed rock 20 mm nominal size)]	59.40	cu m		
5	RC0090	Providing & fixing centering and shuttering (formwork), including strutting, propping etc. and removal of formwork [Foundation and plinth etc.]	17.50	sqm		
		TOTAL AMOUNT				

Bill of Quantities**Name of work: Construction of Retaining Wall at Dagapela.****Agency: DAMC, MoAF.**

Sl. No.	Item description	Quantity	Unit	Rate (Nu)	Amount (Nu)
1	Earth work in excavation over areas using Excavator, exceeding 300mm in depth, 1.5m in width as well as 10 sq.m in area on plan, including dressing, levelling and disposal of excavated earth, lead up to 50m and lift up to 1.5m	1,458.00	cu.m		
2	Disposal & dumping of excavated earth within 50m lead and 1.5m lift & disposed soil to be neatly dressed. Extra for every additional lead of 25m beyond 50m up to 250m and deposit to a level up to 1.5m(mechanical)	1,458.00	cu.m		
3	Excavation in foundation trenches or drains not exceeding 1.5m in width or area 10 sq.m on plan, including dressing & ramming, disposal of surplus soil within 50m lead & 1.5m lift. Ordinary Soil	45.00	cu.m		
4	Providing and laying in position plain cement concrete excluding the cost of centering and shuttering - All work upto plinth level. 1:4:8 (1 cement : 3 sand : 6 graded crushed rock 20 mm nominal size)	3.75	cu.m		
5	Providing & laying Random Rubble Masonry with hard stone in foundation & plinth 1:5	126.00	cu.m		
	Total Nu.				

DRAWINGS FOR BOTH PACKAGE IS SAME AS ENCLOSED

SPECIFICATION FOR TELEPHONE WORK

- Telephone cable duct must be separated atleast by 0.5m away from electrical route
- Telephone cable duct should be provided with 25mm dia. HDPE pipe of 10Kg/cm²
- Telephone terminal cabinet (T.T.C.) at 1.5M above finish floor level and should be water tight & moisture proof of 250x200x150mm with cover and 25mm dia punch hole to all sides.
- Telephone socket outlet R.U-11 at 0.6M above finish floor level.
- Bridging method should be adopted if there is crossing

TEST RESULTS:

- Polarity test:** All live conductors must be connected through switches only.
- Insulation test:** Minimum test result should not be less than 1 Mega Ohm.
- Earth Continuity test:** Low voltage test lamp should satisfy the whole insulation.
- Earth test:** Test result should be within 5 OHM.

SPECIFICATION FOR ELECTRICAL WORKS:

- All light to be wired with 1.5 Sqmm PVC insulated copper conductor, 11KV grade in Recessed HDPE Pipe
- All light circuits to be wired with 2.5 Sqmm PVC insulated copper conductor, 11KV Grade in Recessed HDPE Pipe.
- All Power point to be wired with 4 Sqmm PVC insulated copper conductor, 11KV grade in Recessed HDPE Pipe.
- All wall Fixtures to be fixed at 2.5M from Floor level.
- All Light switch boards should be fixed at 1.5M from Floor level.
- All Power points to be fixed at 0.5M from Floor level for all rooms except kitchen and Toilets at 1.5m from floor level.
- Minimum size of pipe / conduit is 19mm Dia / 18 SWG.
- Layout indicated 25mm dia (16 SWG) HDPE pipe
- No phase difference is permitted in the same conduit.
- All switch board should be fixed at 0.25M away from door & edge of wall.
- All SDB shall be fixed at 2.2m above the finished floor level.
- Power points shall not be looped.
- All materials shall be used approved brand specified by SOCA.



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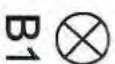
Walking the extra mile

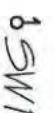


Project: Construction of Centralized Pack House at Samtse, Haa and Dagana (Food Security & Agriculture Productivity Project, DoA, MoAF)		Drawn by: Yeshey Lhendup	
Title: Electrical Specifications		Checked by: Tshering(P.E)	
Date:-	Initials	Drawing No: 10	
		All dimension in mm	Approved by: Chief Engineer

ELECTRICAL LEGENDS

 LED Tube set, 1200mm, 18W

 LED lamp and holder 15watt

 Single way switches NxGang

 Main panel board & sub-distribution board for Ground floor,

 Socket outlet 16A, 220V with PVC moulded casing,

 Telephone point

 Two way Switch

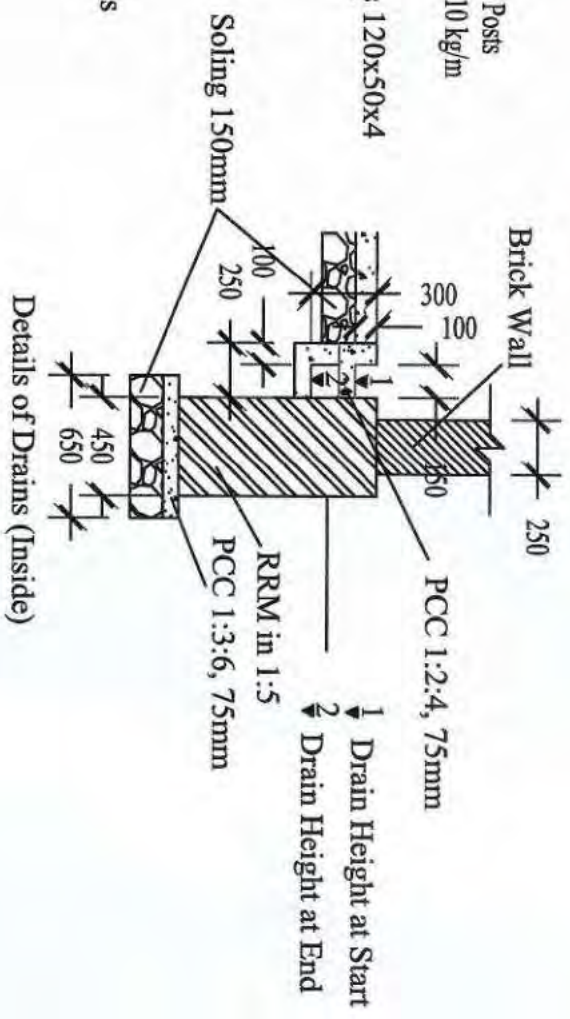
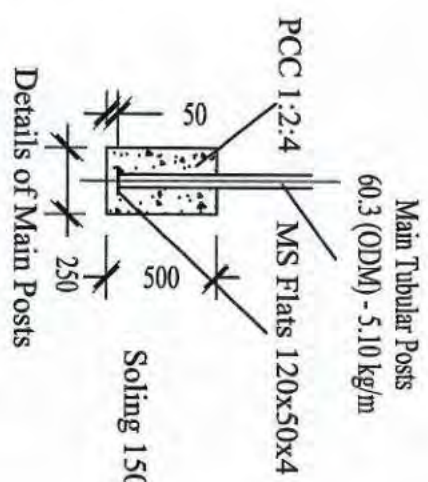
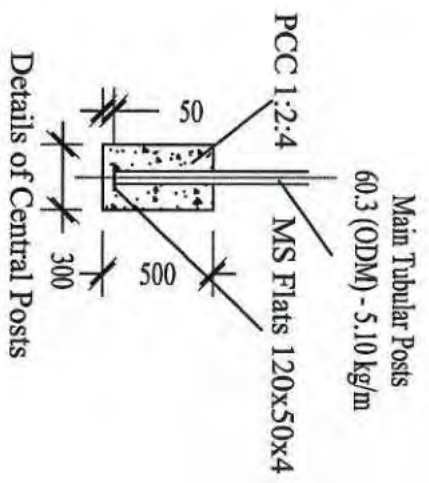
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Project: Construction of Centralized Pack House at Santise, Haa and Dagana (Food Security & Agriculture Productivity Project, DoA, MoAF)			Drawn by: Yeshey Lhendup	
Title: Electrical Legends		Scale	Checked by: Tshering(P.E)	
Date:-	Initials	Drawing No: 9		
		All dimension in mm		
			Approved by: Chief Engineer	



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Project: Construction of Centralized Pack House at Samtse, Haa and Dagana
(Food Security & Agriculture Productivity Project, DoA, MoAF)

Title: Foundation & Drain Details

Scale

Date:-

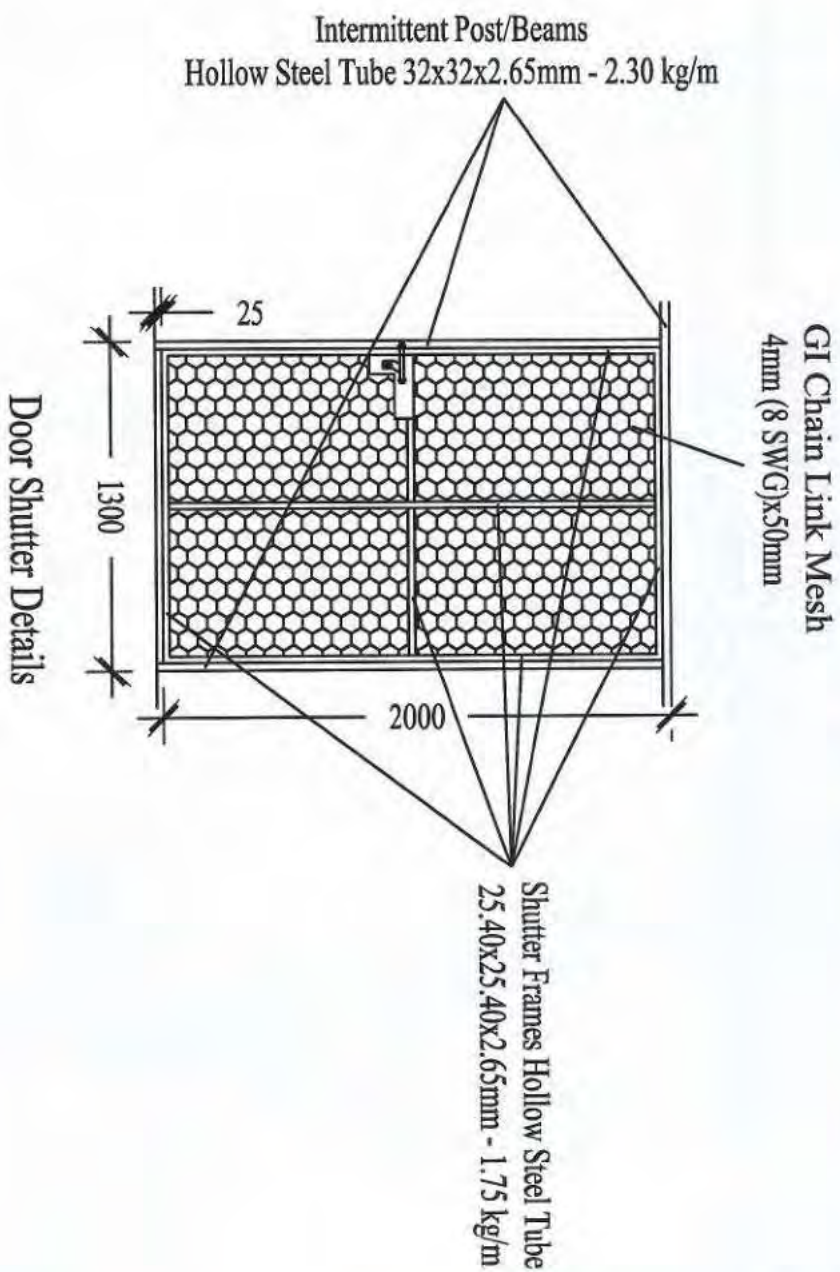
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Drawing No: 10

All dimension in mm

Drawn by: Tskerng

Approved by: Chief Engineer



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Project: Construction of Centralized Pack House at Samtse, Haa and Dagana
(Food Security & Agriculture Productivity Project, DoA, MoAF)

Title: Door Shutter Details

Scale

Date:

Initial

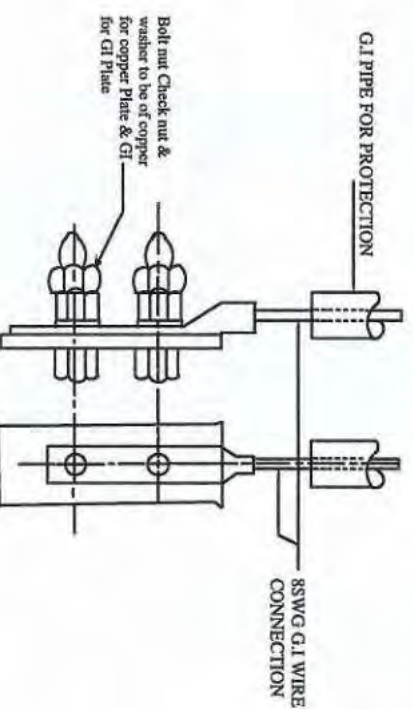
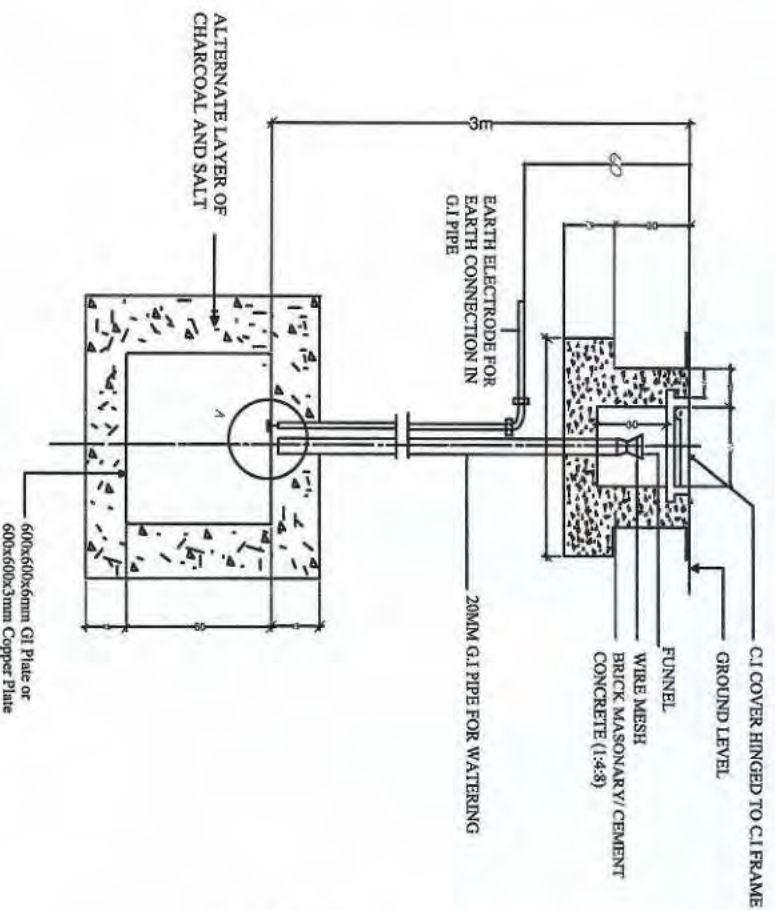
Drawing No: 9

All dimension in mm

Drawn by: Tshering

Approved by: Chief Engineer

METHOD OF PLATE EARTHING



ENLARGED DETAIL AT A

NOTE:
BOLT, NUT, CHECK NUT AND WASHERS
TO BE OBTAINED BRASS FOR COPPER PLATE

ALL DIMENSIONS ARE IN CM
(OTHER DIMENSIONS SHOWN) DIMENSION NOT TO SCALE
EARTHING SYSTEM SHALL BE 18M AWAY FROM THE BUILDING.

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Project: Construction of Centralized Pack House at Samtse, Haa and Dagana
(Food Security & Agriculture Productivity Project, DoA, MoAF)

Title: Earthing Details

Scale

Date:-

Initials

Drawing No: 8

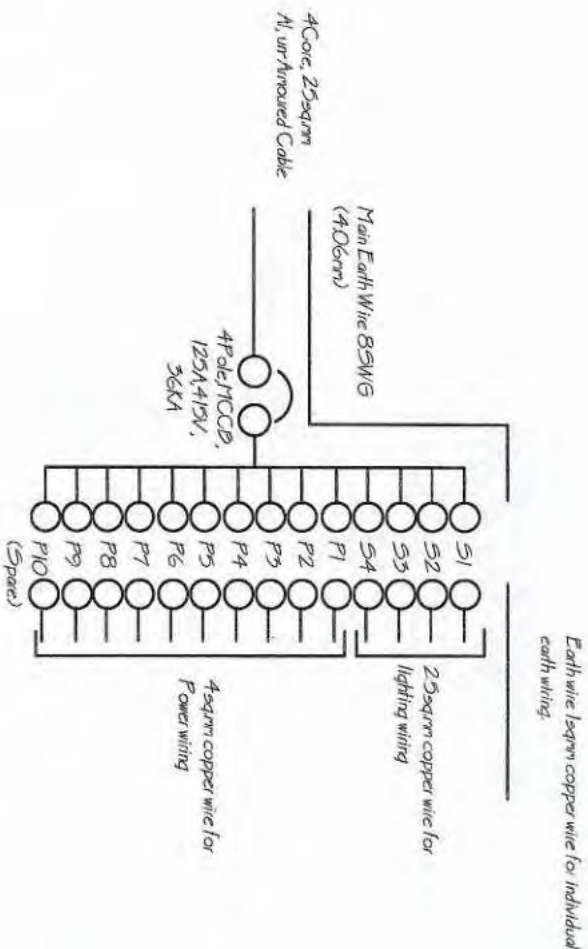
All dimension in mm

Drawn by: Yeshey Lhendup

Checked by: Tshering P. E

Approved by: Chief Engineer

MPB/Sub Distribution Board, 6Ways TPN
 6/10A, MCB, SP - 4 nos
 16A, MCB, SP - 10 nos



R	Y	B
102	—	—
—	155	—
—	—	155
102	—	—
2000	—	—
—	2000	—
—	—	2000
2000	—	—
—	2000	—
—	—	2000
2000	—	—
—	2000	—
—	—	2000
6,204 W	6,135 W	6,135 W

Total Load (Watts)

Total connected Load (Watts)

18474 watts = 18.45kW

Demand Load (Watts, 70% of DF)

12931.8 watts = 12.94kW

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Project: Construction of Centralized Pack House at Santise, Haa and Dagana
 (Food Security & Agriculture Productivity Project, DoA, MoAF)

Title: MPB & SDB Details

Scale

Date:-

Initials

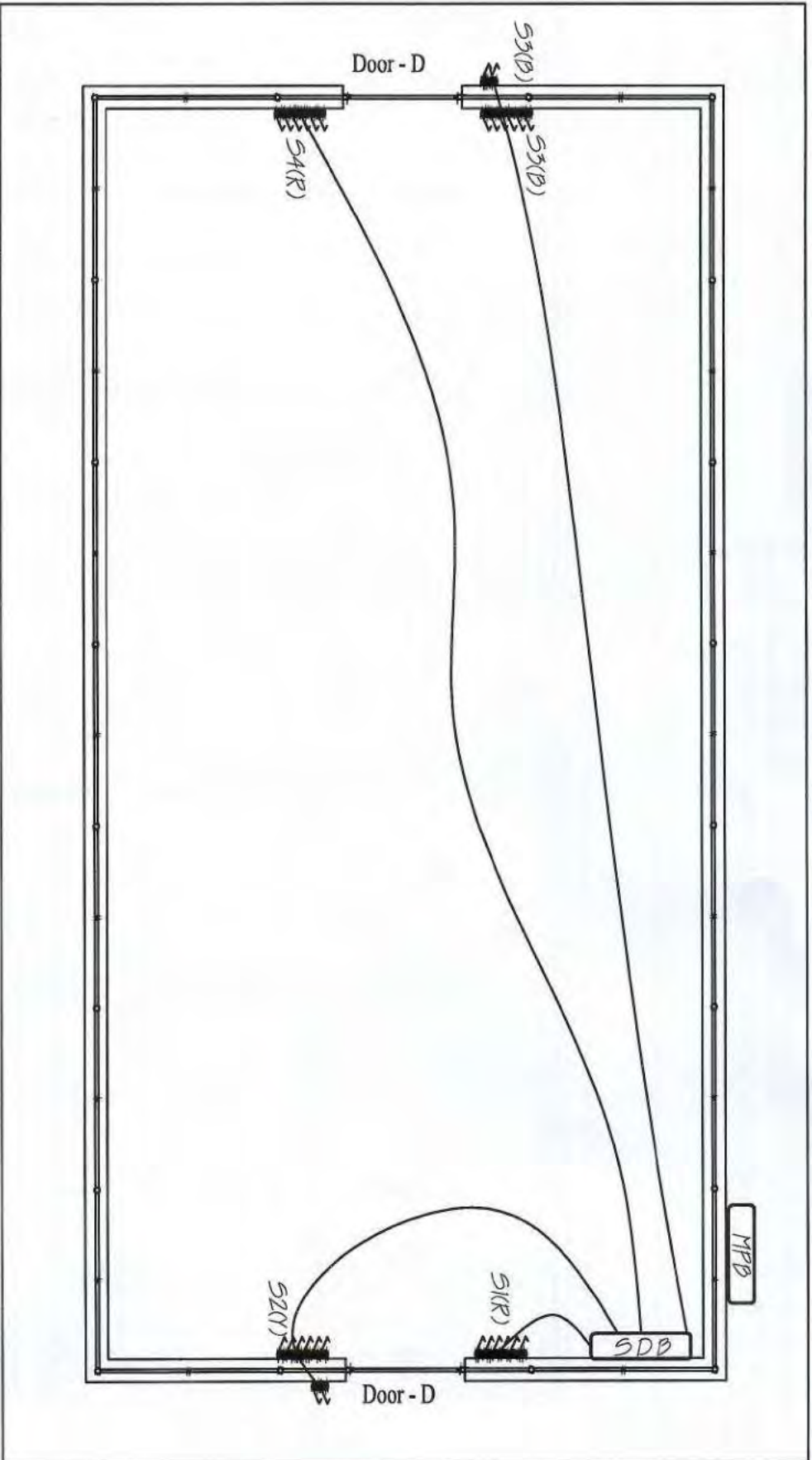
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All dimension in mm

Drawn by: Yeshey Lhendup

Checked by: Tshering(P.E)

Approved by: Chief Engineer



**Project: Construction of Centralized Pack House at Samtse, Haa and Dagana
(Food Security & Agriculture Productivity Project, DoA, MoAF)**

**Title: Light Circuit wiring & Conduit Layout
Plan**

Scale

Date:-

Initials

Drawing No: 6

All dimension in mm

Drawn by: Yeshey Lhendup

Checked by: Tshering(P-E)

Approved by: Chief Engineer



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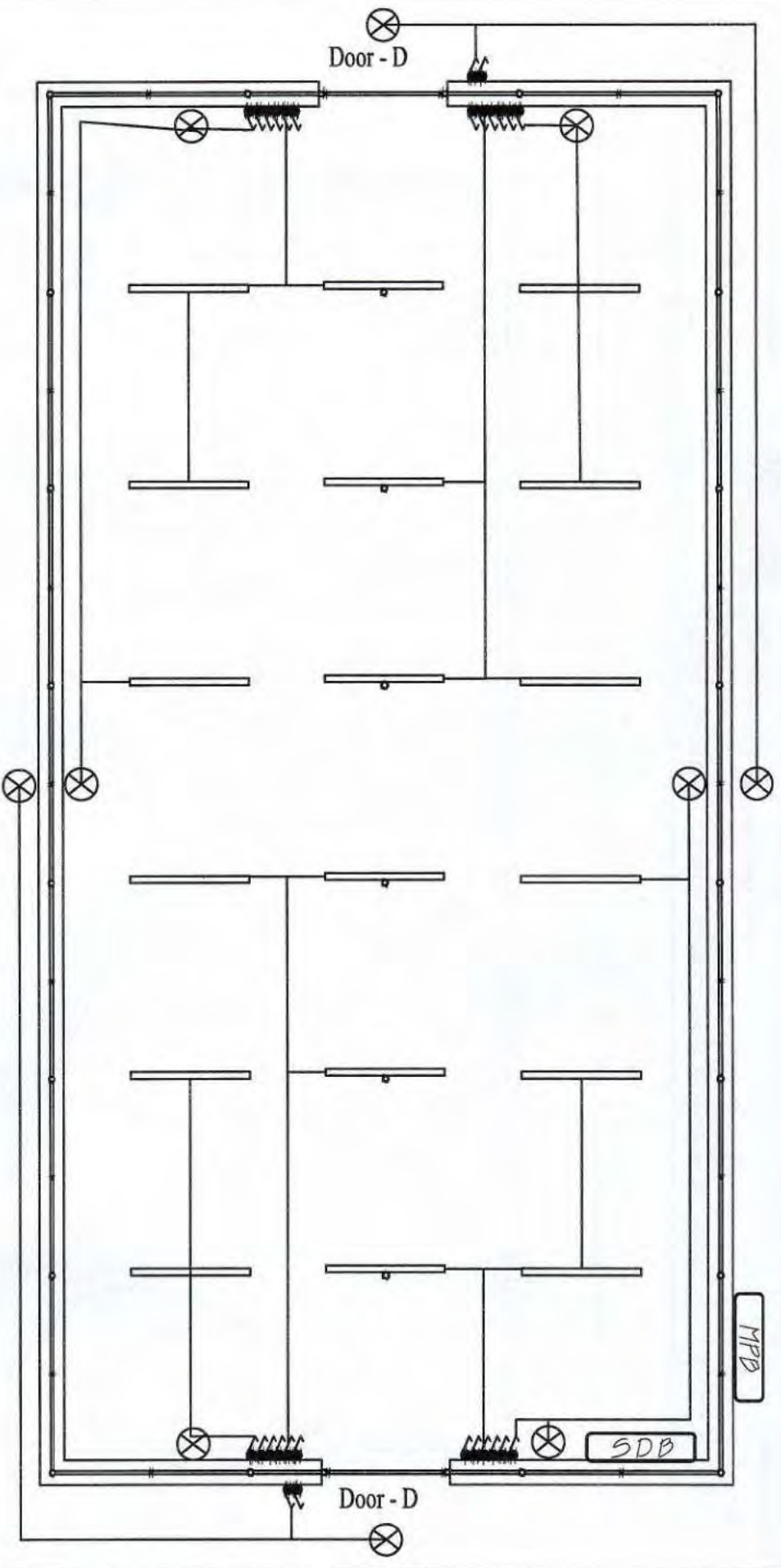


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Project: Construction of Centralized Pack House at Samtse, Haa and Dagana
(Food Security & Agriculture Productivity Project, DoA, MoAF)

Title: Light Points Conduit Layout Plan

Scale

Date:-

Initials

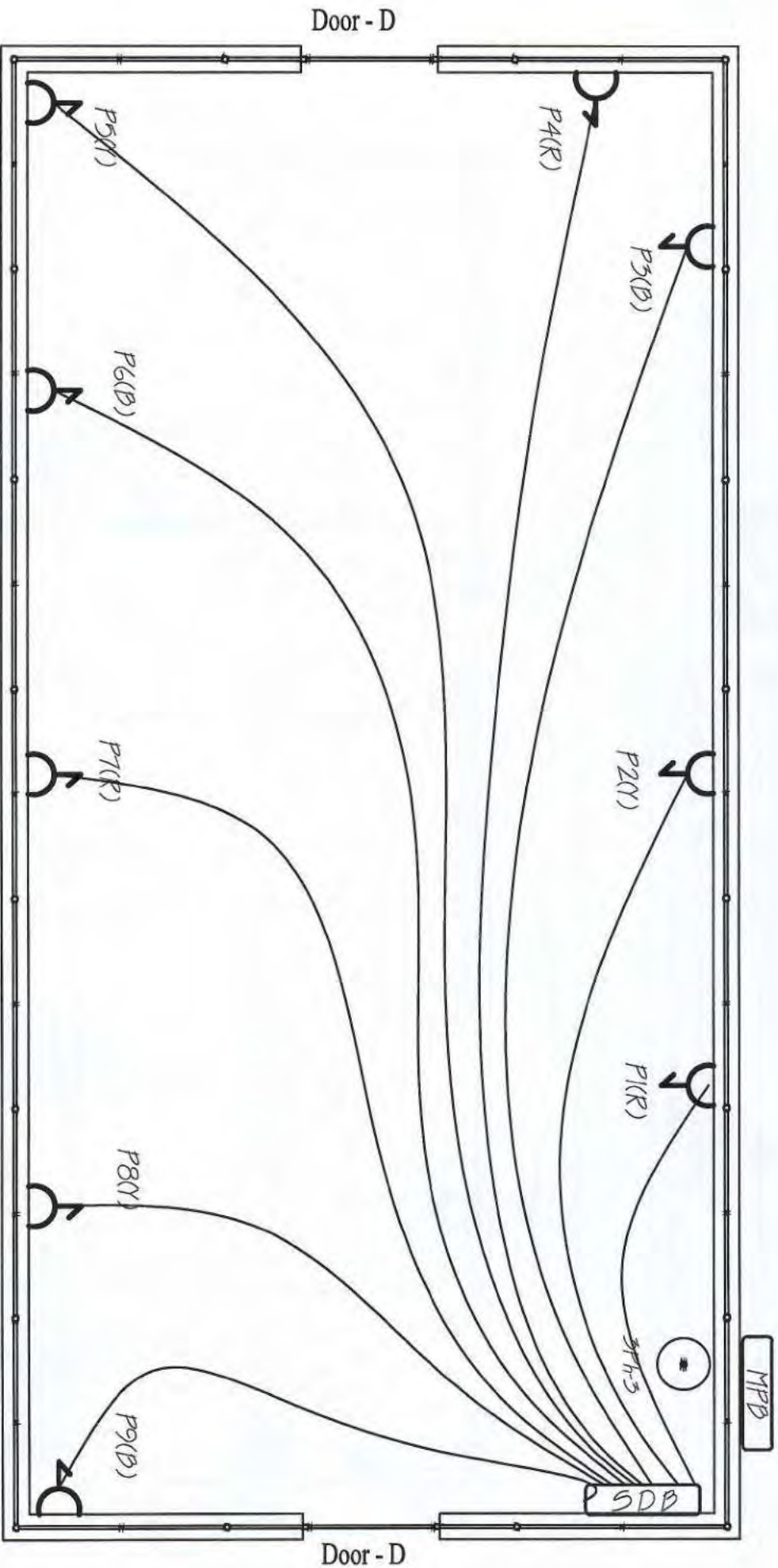
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All dimension in mm

Drawn by: Yeshey Lhendup

Checked by: Tshering(P.E)

Approved by: Chief Engineer



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Project: Construction of Centralized Pack House at Samtse, Haa and Dagana
(Food Security & Agriculture Productivity Project, DoA, MoAF)

Title: Plug Points Wiring Plan

Scale

Date:-

Initials

Drawing No: 4

All dimension in mm

Drawn by: Yeshey Lhendup

Checked by: Tshering(P.E)

Approved by: Chief Engineer

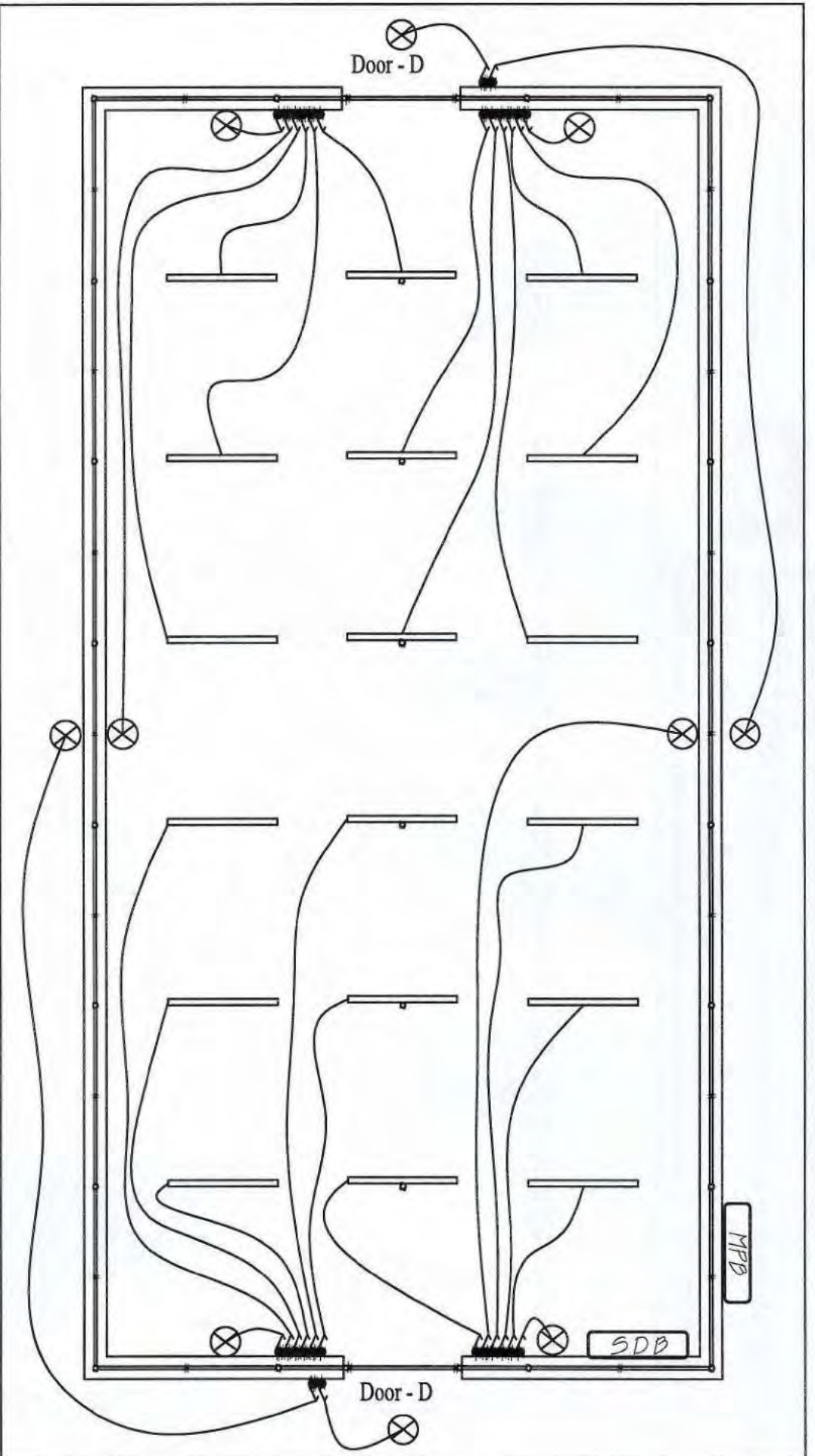


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Project: Construction of Centralized Pack House at Samtse, Haa and Dagana
(Food Security & Agriculture Productivity Project, DoA, MoAF)

Title: Light Points Wiring Plan

Scale

Date:-

Initials

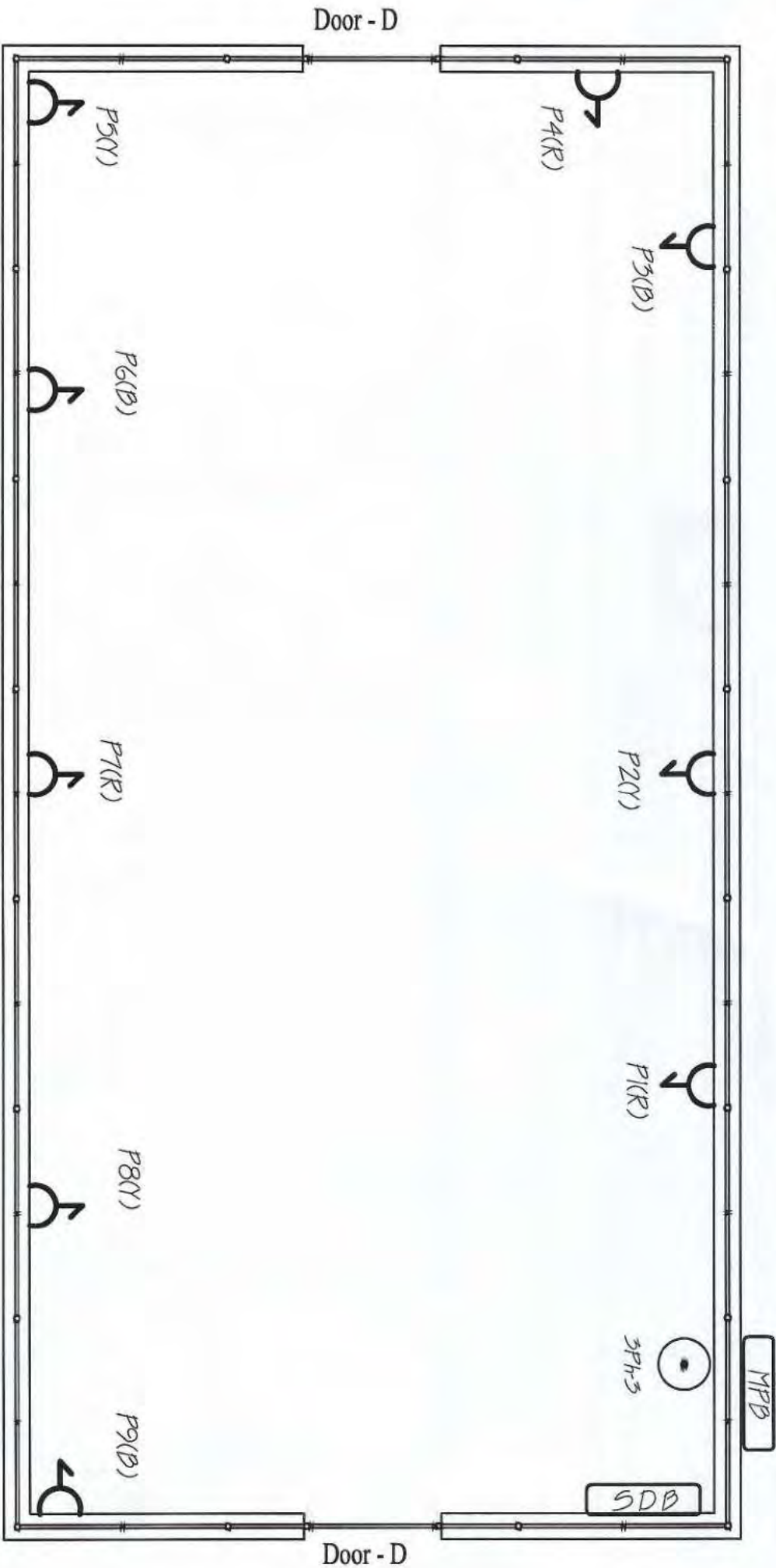
Drawing No: 3

All dimension in mm

Drawn by: Vesley Lhendup

Checked by: Tshering(P.E)

Approved by: Chief Engineer



Project: Construction of Centralized Pack House at Samtse, Haa and Dagana
(Food Security & Agriculture Productivity Project, DoA, MoAF)

Title:Electrical Plug Points		Scale	Checked by: Tshering(P.E)
Date:-	Initials	Drawing No: 2	
		All dimension in mm	
			Approved by: Chief Engineer



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Project: Construction of Centralized Pack House at Samtse, Haa and Dagana
(Food Security & Agriculture Productivity Project, DoA, MoAF)

Title: Electrical Light Points

Scale

Date:-

Initials

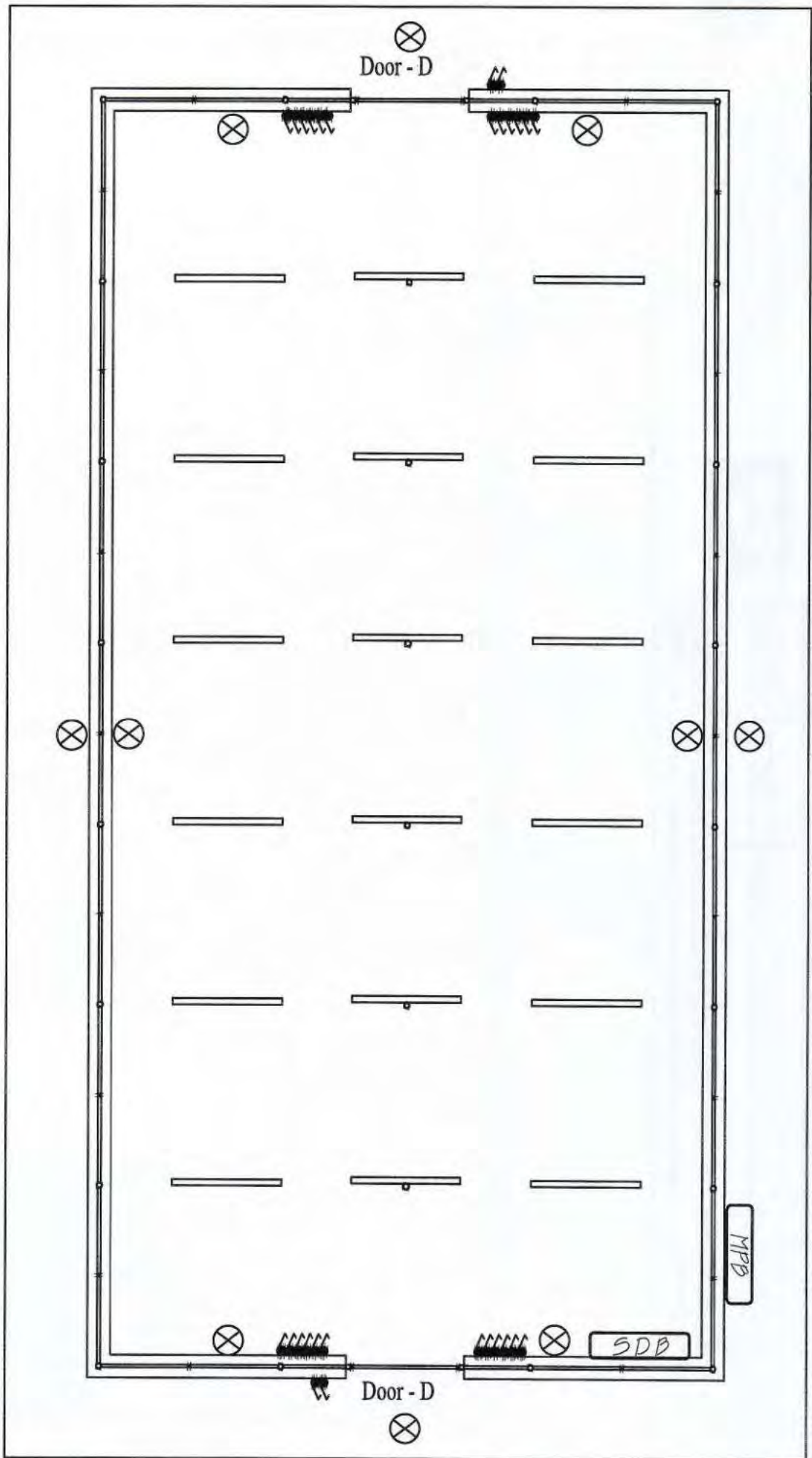
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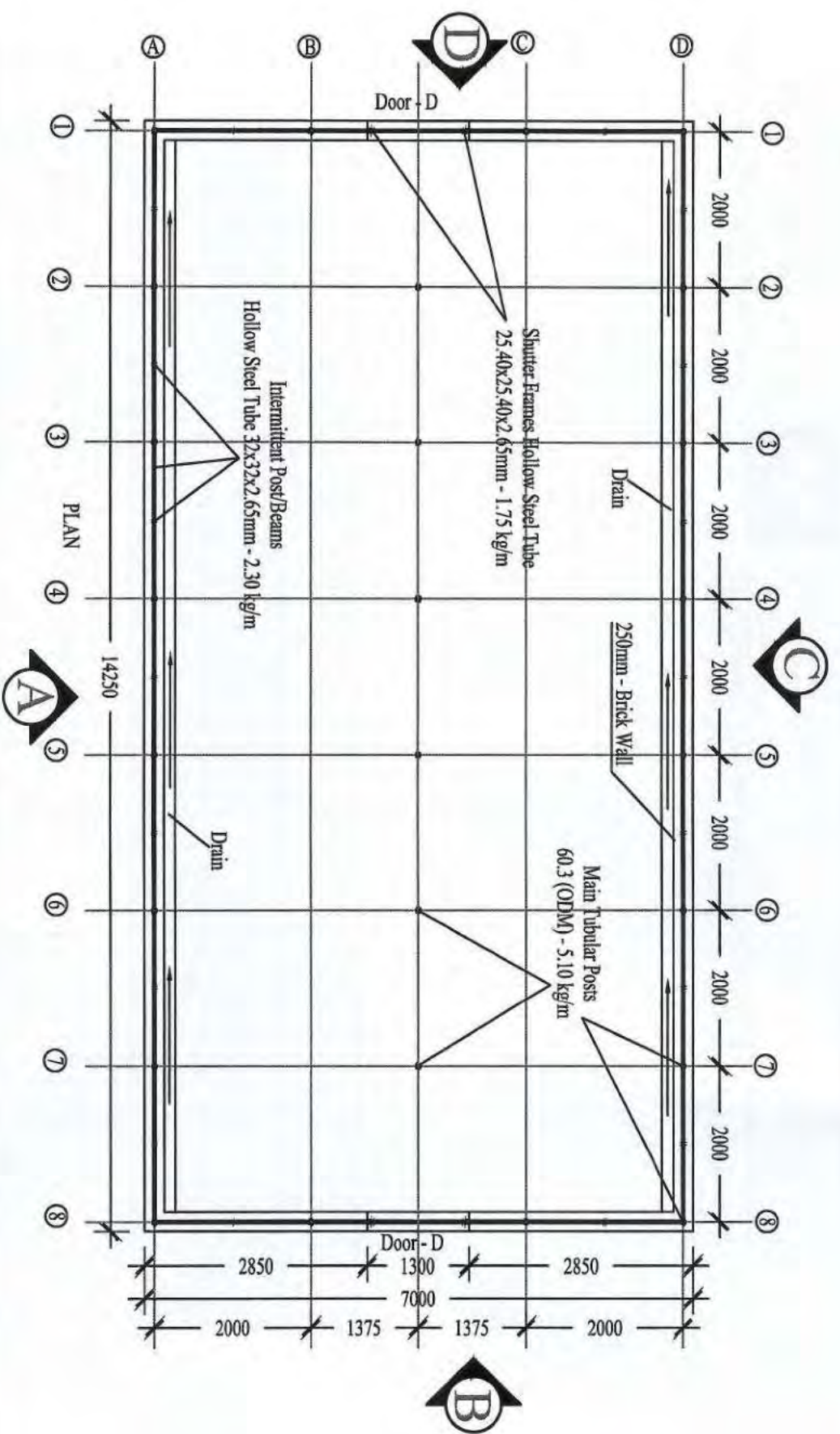
All dimension in mm

Drawn by: Yeshey Lhendup

Checked by: Tshering (P.E)

Approved by: Chief Engineer





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Project: Construction of Centralized Pack House at Samtse, Haa and Dagana
(Food Security & Agriculture Productivity Project, DoA, MoAF)

Title: Plan

Scale

Date:

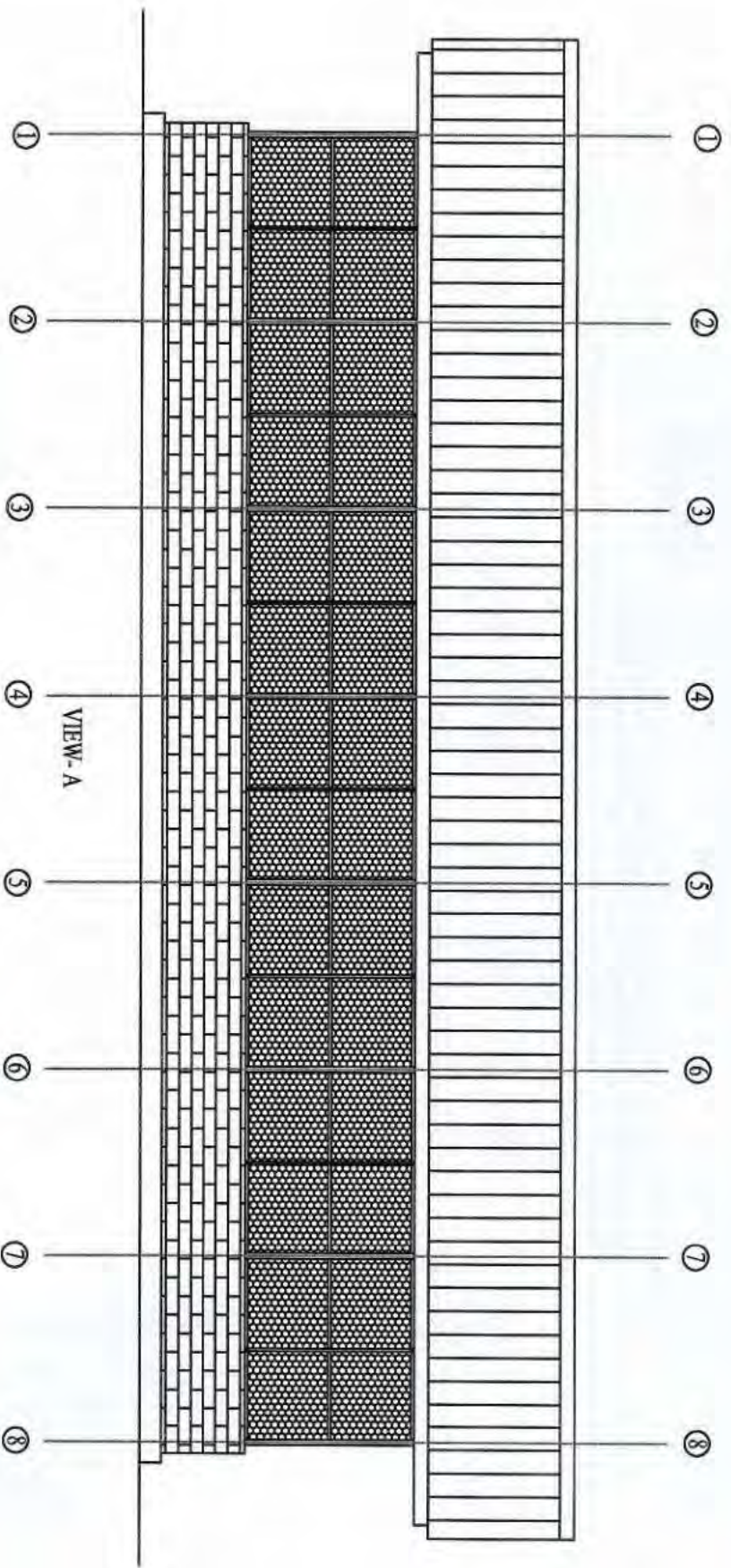
Initials

Drawing No: 1

All dimensions in mm

Drawn by: Tshering

Approved by: Chief Engineer



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Project: Construction of Centralized Pack House at Samse, Haa and Dagana
(Food Security & Agriculture Productivity Project, DoA, MoAF)

Title: Elevation from View -A

Scale

Date:-

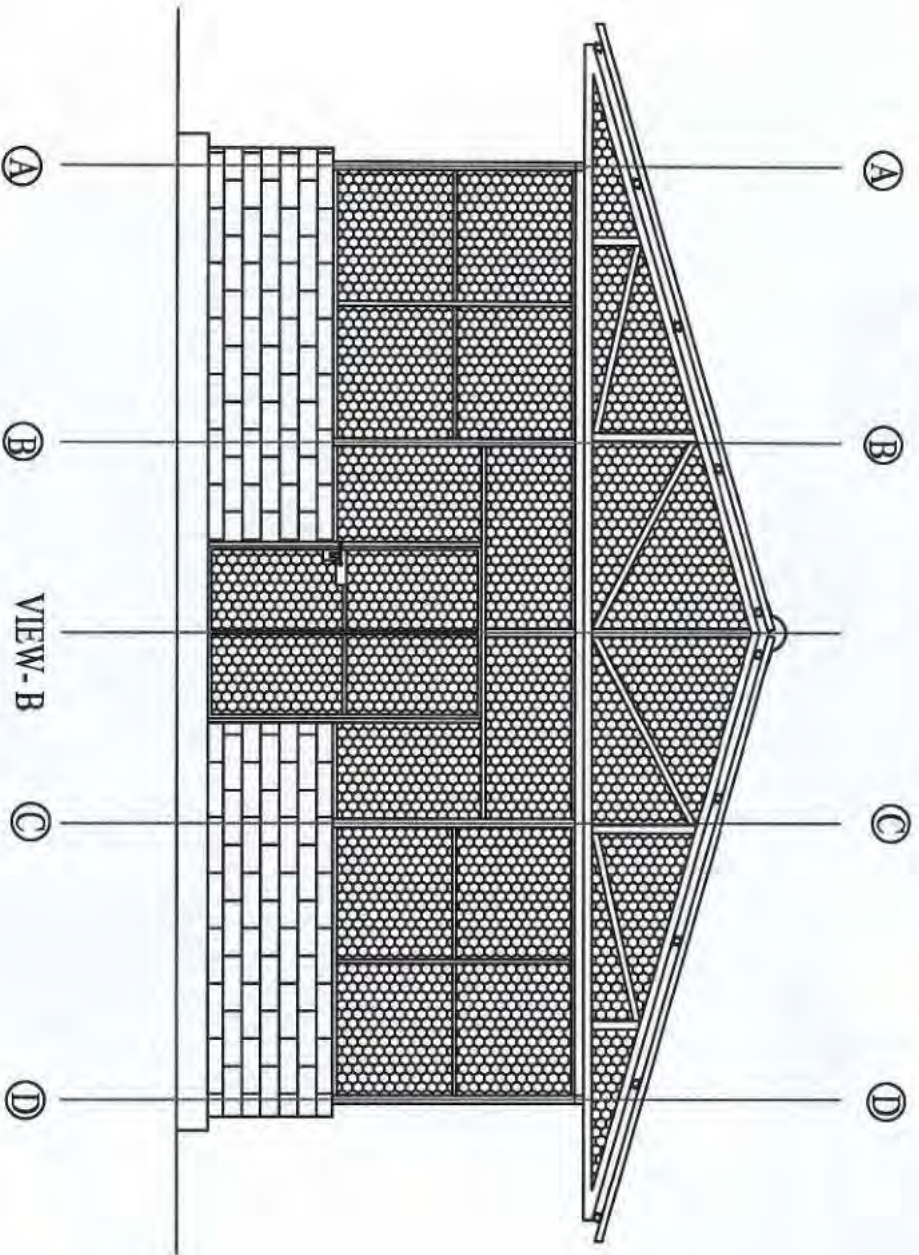
Initials

Drawing No: 2

All dimension in mm

Drawn by: Tshering

Approved by: Chief Engineer



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Project: Construction of Centralized Pack House at Samtse, Haa and Dagana
(Food Security & Agriculture Productivity Project, DoA, MoAF)

Title: Elevation from View -B

Scale

Date:-

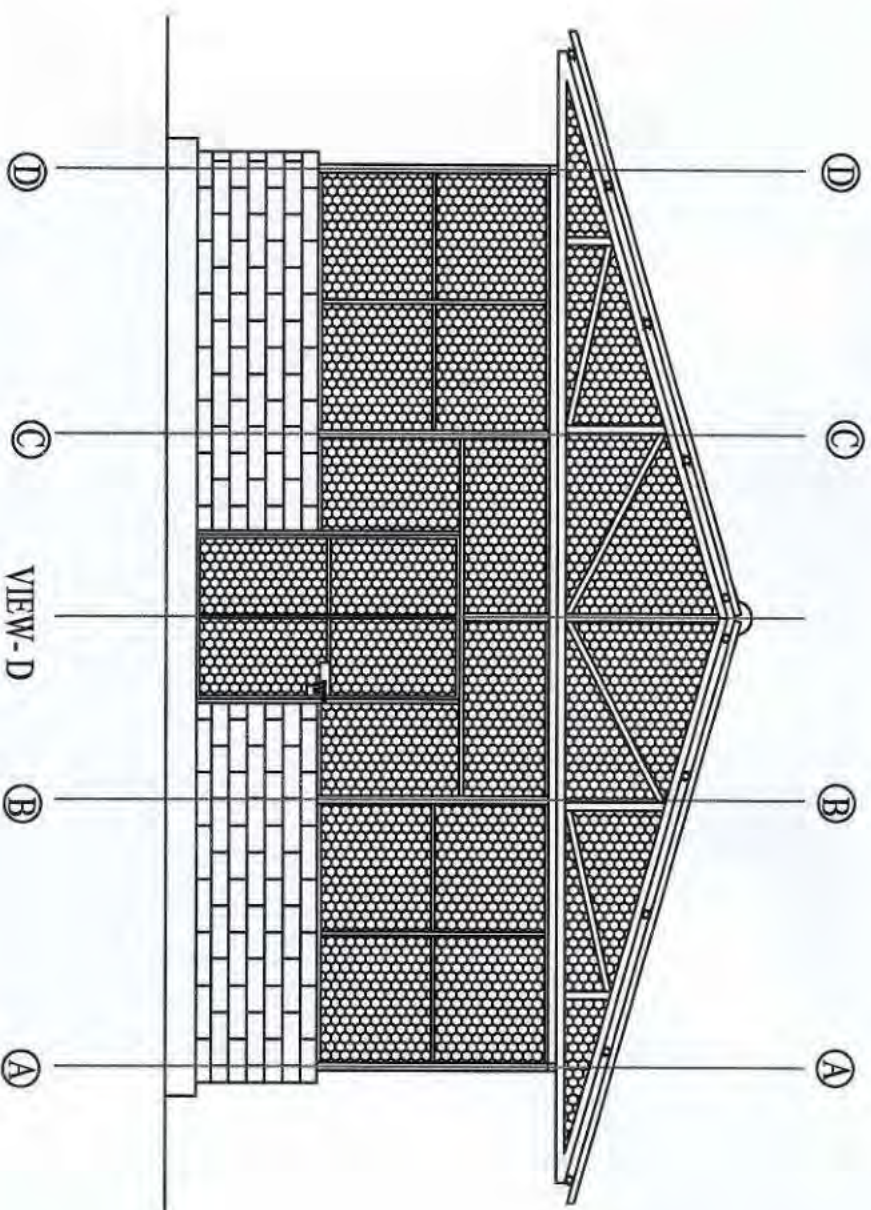
Inside

Drawing No: 3

All dimension in mm

Drawn by: Tshering

Approved by: Chief Engineer



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Project: Construction of Centralized Pack House at Samtse, Haas and Dagana
(Food Security & Agriculture Productivity Project, DoA, MoAF)

Title: Elevation from View -D

Scale

Date:-

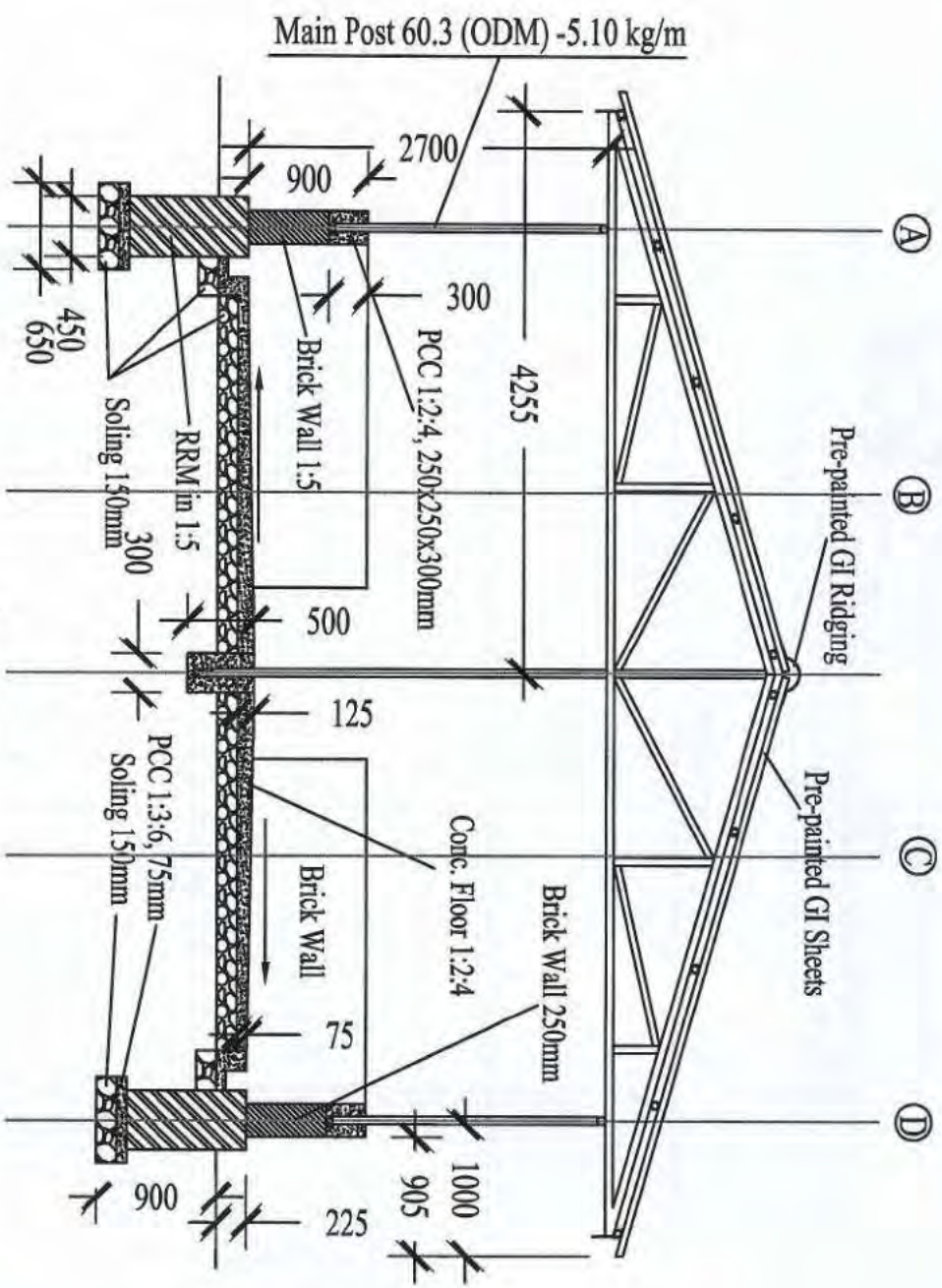
Initials

Drawing No: 4

All dimension in mm

Drawn by: Tshering

Approved by: Chief Engineer



Cross Section



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Project: Construction of Centralized Pack House at Samtse, Haa and Dagana
(Food Security & Agriculture Productivity Project, DoA, MoAF)

Title: Cross Section

Scale

Date:-

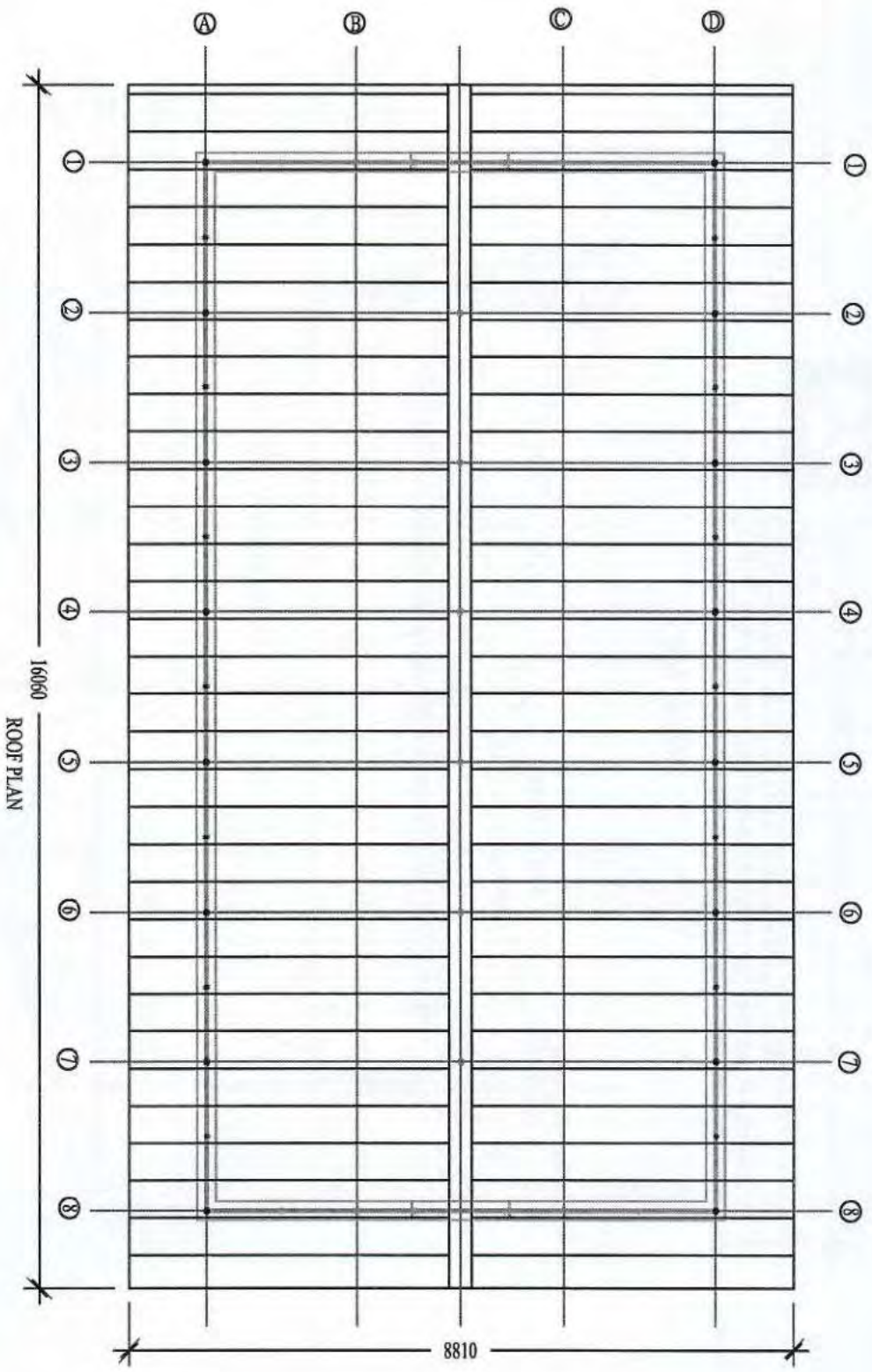
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Drawing No: 5

All dimension in mm

Drawn by: Tshering

Approved by: Chief Engineer



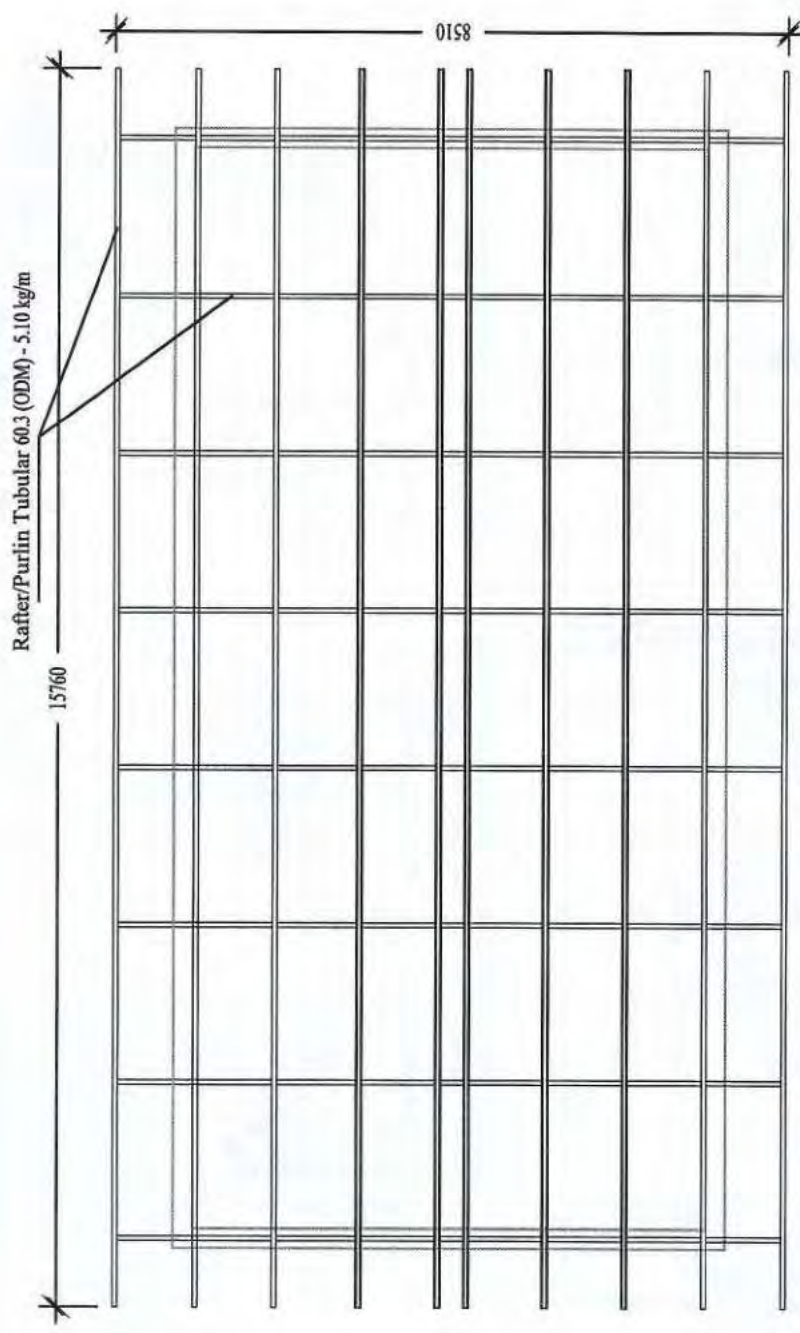
ROOF PLAN



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MINISTRY OF AGRICULTURE
Department of Agriculture
Walking the extra mile



Project: Construction of Centralized Pack House at Samtse, Haa and Dagana (Food Security & Agriculture Productivity Project, DoA, MoAF)				
Title: Roof Plan		Scale	Drawn by: Tshering	
Date:-	Initials	Drawing No: 6	Approved by: Chief Engineer	
		All dimension in mm		



ROOF TRUSS LAYOUT PLAN



ROYAL GOVERNMENT OF BHUTAN

MINISTRY OF AGRICULTURE

Department of Agriculture

Walking the extra mile

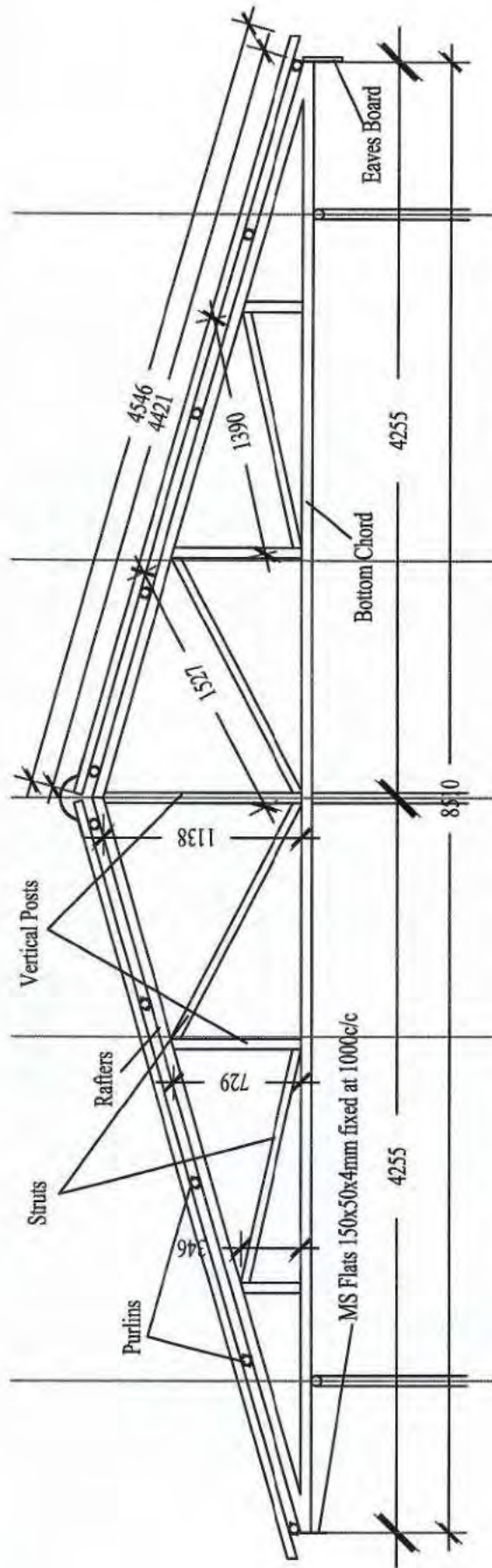


Project: Construction of Centralized Pack House at Samtse, Haa and Dagana
(Food Security & Agriculture Productivity Project, DoA, MoAF)

Title: Roof Truss Layout Plan		Scale
Date:-	Initials	Drawing No: 7
		All dimension in mm

Drawn by: Tshering

Approved by: Chief Engineer



Member	Steel Tube Size	Thickness	Note:- ODM
Rafter/Bottom Chord	60.30 ODM, 5.10 kg/m	3.60mm	OD :- Outer Diameter M:- Medium
Struts	48.30 ODM, 3.59 kg/m	3.20mm	
Vertical Posts	60.30 ODM, 5.10 kg/m	3.60mm	
Purlins	60.30 ODM, 5.10 kg/m	3.60mm	

 ROYAL GOVERNMENT OF BHUTAN MINISTRY OF AGRICULTURE Department of Agriculture <i>Walking the extra mile</i>		Project: Construction of Centralized Pack House at Samtse, Haa and Dagana (Food Security & Agriculture Productivity Project, DoA, MoAF)			
		Title: Roof Truss Details			
		Scale		Drawing No. 8	
		Date:		Initials	
				All dimension in mm	
				Drawn by: Tshering	
				Approved by: Chief Engineer	

SPECIFICATION FOR TELEPHONE WORK

- Telephone cable duct must be separated atleast by 0.5m away from electrical route.
- Telephone cable duct should be provided with 25mm dia, HDPE pipe of 10Kg/cm²
- Telephone terminal cabinet (T.T.C) at 1.5M above finish floor level and should be water tight & moisture proof of 250x200x150mm with cover and 25mm dia punch hole to all sides.
- Telephone socket outlet RJ-11 at 0.6M above finish floor level.
- Bridging method should be adopted if there is crossing

TEST RESULTS:

- | | | |
|-----------------------|--|--|
| Polarity test | All live conductors must be connected through switches only. | |
| Insulation test | Minimum test result should not be less than 1 Mega Ohm. | |
| Earth Continuity test | Low voltage test lamp should satisfy the whole insulation. | |
| Earth test | Test result should be within 5 OHM. | |

SPECIFICATION FOR ELECTRICAL WORKS:

- All light to be wired with 1.5 Sq.mm PVC insulated copper conductor, 1.1KV grade in Recessed HDPE Pipe
- All light circuits to be wired with 2.5 Sq.mm PVC Insulated copper conductor, 1.1KV Grade in Recessed HDPE Pipe.
- All Power point to be wired with 4Sq.mm PVC insulated copper conductor, 1.1KV grade in Recessed HDPE Pipe.
- All wall Fixtures to be fixed at 2.5M from Floor level.
- All light switch boards should be fixed at 1.5M from Floor level.
- All Power points to be fixed at 0.3M from Floor level for all rooms except kitchen and Toilets at 1.5m from floor level.
- Minimum size of pipe / conduit is 19mm Dia / 18 SWG.
- Layout indicated 25mm dia (16SWG) HDPE pipe.
- No phase difference is permitted in the same conduit.
- All switch board should be fixed at 0.23M away from door & edge of walls.
- All SDB shall be fixed at 2.2m above the finished floor level.
- Power points shall not be looped.
- All materials shall be used approved brand specified by SQCA.

འགྲུལ་ལུང་ཁྱེད་ཀྱི་ འགྲུལ་ལུང་ཁྱེད་ཀྱི་  DEPARTMENT OF AGRICULTURE MINISTRY OF AGRICULTURE AND FORESTRY ROYAL GOVERNMENT OF BHUTAN TRASHICHOEDZONG, THIMPHU	
Project: Electrification of 2unit Residence at Dagana under DAMC, MoAF	
Title: Electrical Specifications	
Revision	Scale
Initials	Drawing No: 9
All dimension in mm	
Drawn by: Yeshay Lhamrup	
Checked by: EG/BC	
APPROVED: Chief Engineer	

ELECTRICAL LEGENDS

T1 ✓ Tube set, 1200mm, $\frac{36}{40}$ W 18W

B1 

CFL lamp and holder

SW1

Single way switches NxGang

MPB & SDB

Main panel board & sub-distribution board.

SIDE

Sub Distribution Board

P1

Socket outlet 16A, 220V with PVC moulded casing.

T

Telephone point

॥ ॐ नमो भगवते वासुदेवाय ॥

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DEPARTMENT OF AGRICULTURE
MINISTRY OF AGRICULTURE AND FORESTS
ROYAL GOVERNMENT OF BHUTAN
TRASHICHOEDZONG, THIMPHU

Project: Electrification of 2unit Residence at Dagana under DAMC, MoAF

Drawn by: Yeshey Lhendup

Title: Electrical Legend

Scale

1

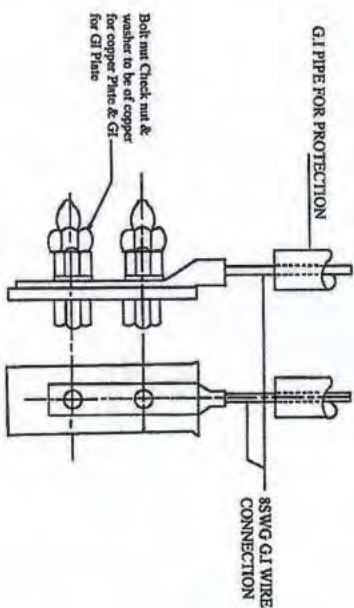
Animals

Drawing No: 8

All dimension in mm

Checked by EE(BC)

APPROVED: Chief Engineer

[illegible]

ENLARGED DETAIL AT A

— 600x600x6mm GI Plate or
600x600x3mm Copper Plate

NOTE:
BOLT NUT, CHECKNUT AND WASHERS
TO BE OBTAINED BRASS FOR COPPER PLATE
ALL DIMENSIONS ARE IN CM
(OTHER DIMENSIONS SHOWN) DIMENSION NOT TO SCALE
EARTHING STATION SHALL BE 1.8M AWAY FROM THE BUILDING.

ਸਤਿਨਾਮੁ ਨਾਨਕੁ ਨਿਰਭਉ ਨਿਰਵੈਰੁ

॥ श्रीगणेशाय नमः ॥
॥ श्रीगणेशाय नमः ॥



DEPARTMENT OF AGRICULTURE
MINISTRY OF AGRICULTURE AND FORESTS
ROYAL GOVERNMENT OF BURMA
TRASHIKHODZONG, THIMPHU

Project: Electrification of 2unit Residence at Dargana under DAMC, MoAF

3

Title: Earthing Detail

Scale

Revision	Initials
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Drawing No: 7

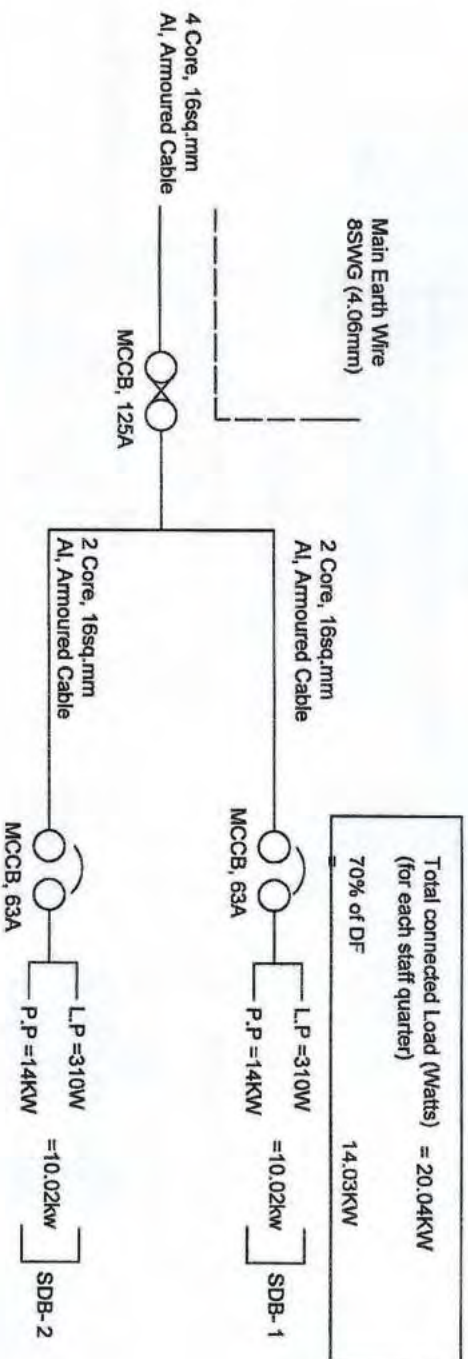
All dimension in mm

Checked by EE(BC)

APPROVED: Chief Engineer

7

Main Panel Board SFU, 100A, Bus Bar, 4strip 450mm

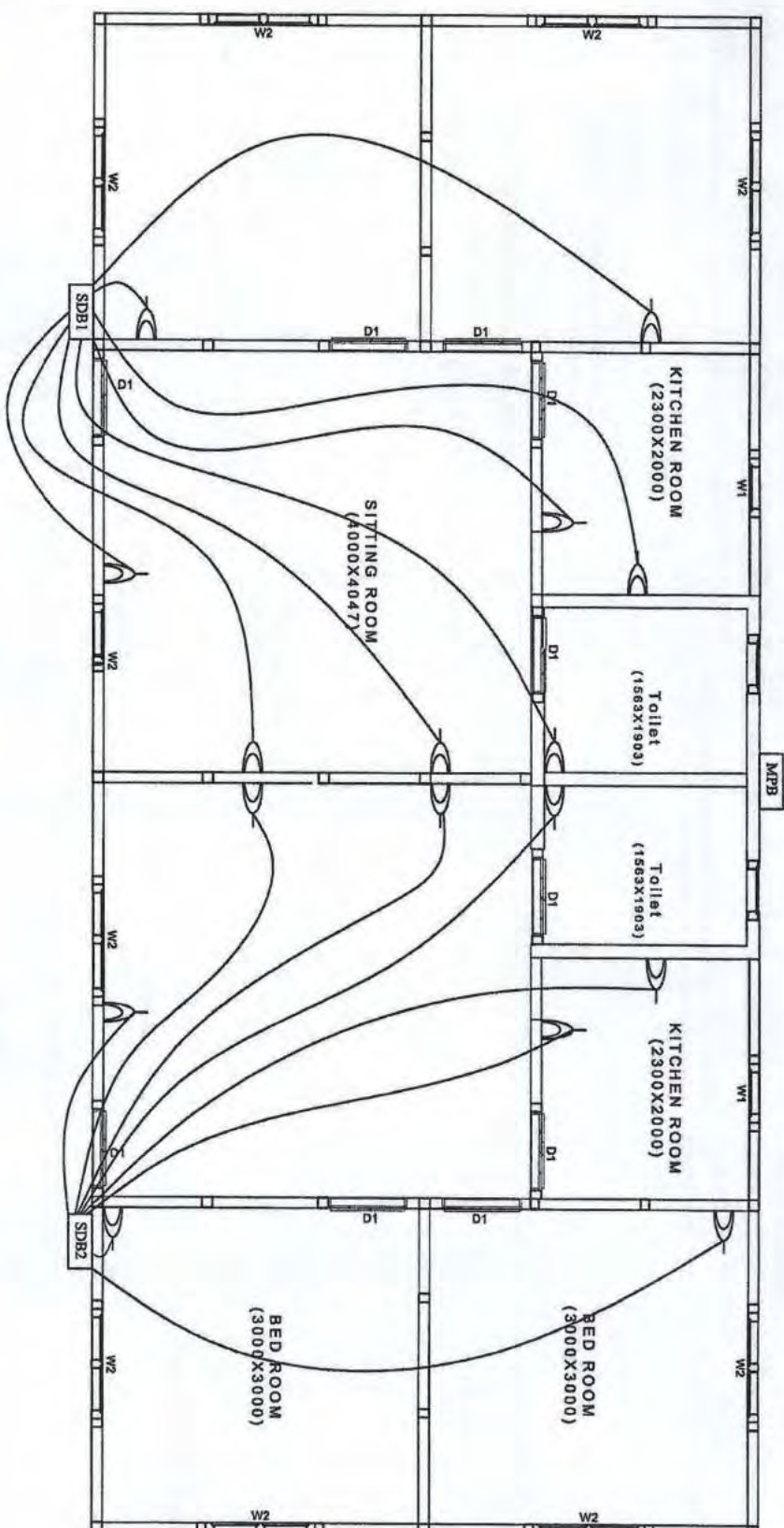


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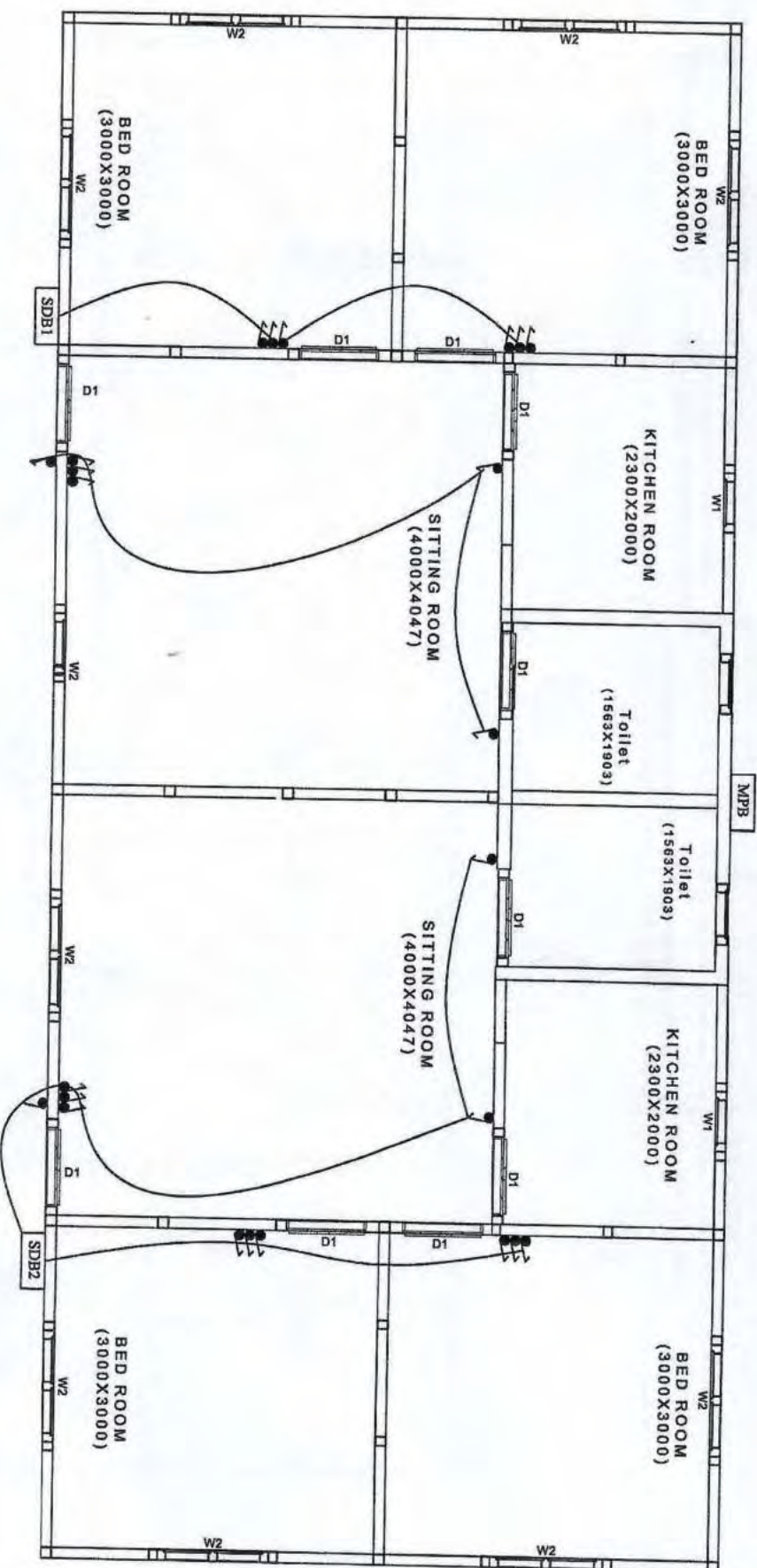


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 ROYAL GOVERNMENT OF BHUTAN
 THASHE CHODZONG, THIMPHU

Project: Electrification of 2unit Residence at Dagana under DAMC, MoAF			Drawn by: Yeshey Lhendup	
Title: Main Panel Board Detail		Scale	Checked by: EE/BCJ	
Revision	Initials	Drawing No: 6	APPROVED: Chief Engineer	
		All dimension in mm		



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Project: Electrification of 2-unit Residence at Deyana under DAMC, MoAF			
Title: Power point wiring & Conduit layout plan		Scale	
Revision		Drawing No: 5	
Initials		All dimension in mm	
Drawn by: Yeshy Lhendup		Checked by: ER/BC	
APPROVED: Chief Engineer		T	

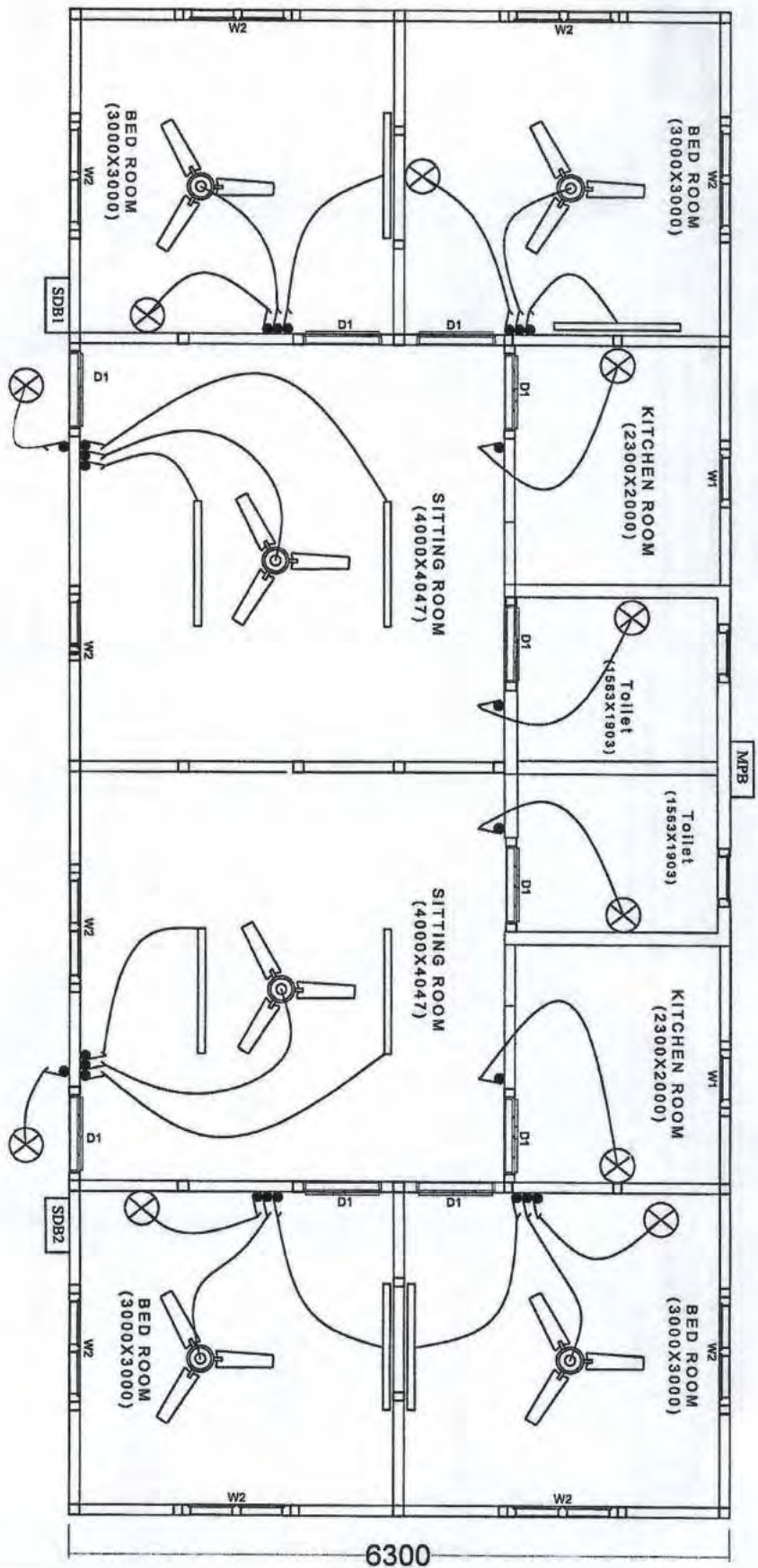


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 རྒྱལ་ཁབ་འཛུགས་པའི་ཁུངས་
 DEPARTMENT OF AGRICULTURE
 MINISTRY OF AGRICULTURE AND FORESTRY
 ROYAL GOVERNMENT OF BHUTAN
 TRASHICHOIZONG, THIMPHU



Project: Electrification of 2unit Residence at Dagana under DAMC, MoAF			Drawn by: Yeshey Lhendup	
Title: Light Circuit wiring & Conduit layout plan			Scale	
Revision		Initials	Drawing No: 4	
			All dimension in mm	
			APPROVED: Chief Engineer	

OK



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མཉམ་འབྲེལ་ལྷན་ཁག་གི་



DEPARTMENT OF AGRICULTURE
MINISTRY OF AGRICULTURE AND FORESTRY
ROYAL GOVERNMENT OF BHUTAN
TRASHICHOZONG, THIMPHU

Project: Electrification of Zanti Residence at Dagana under DAWC, MoAF

Title: Lights point wiring & Conduit layout plan

Scale

Revision

Drawing No. 3

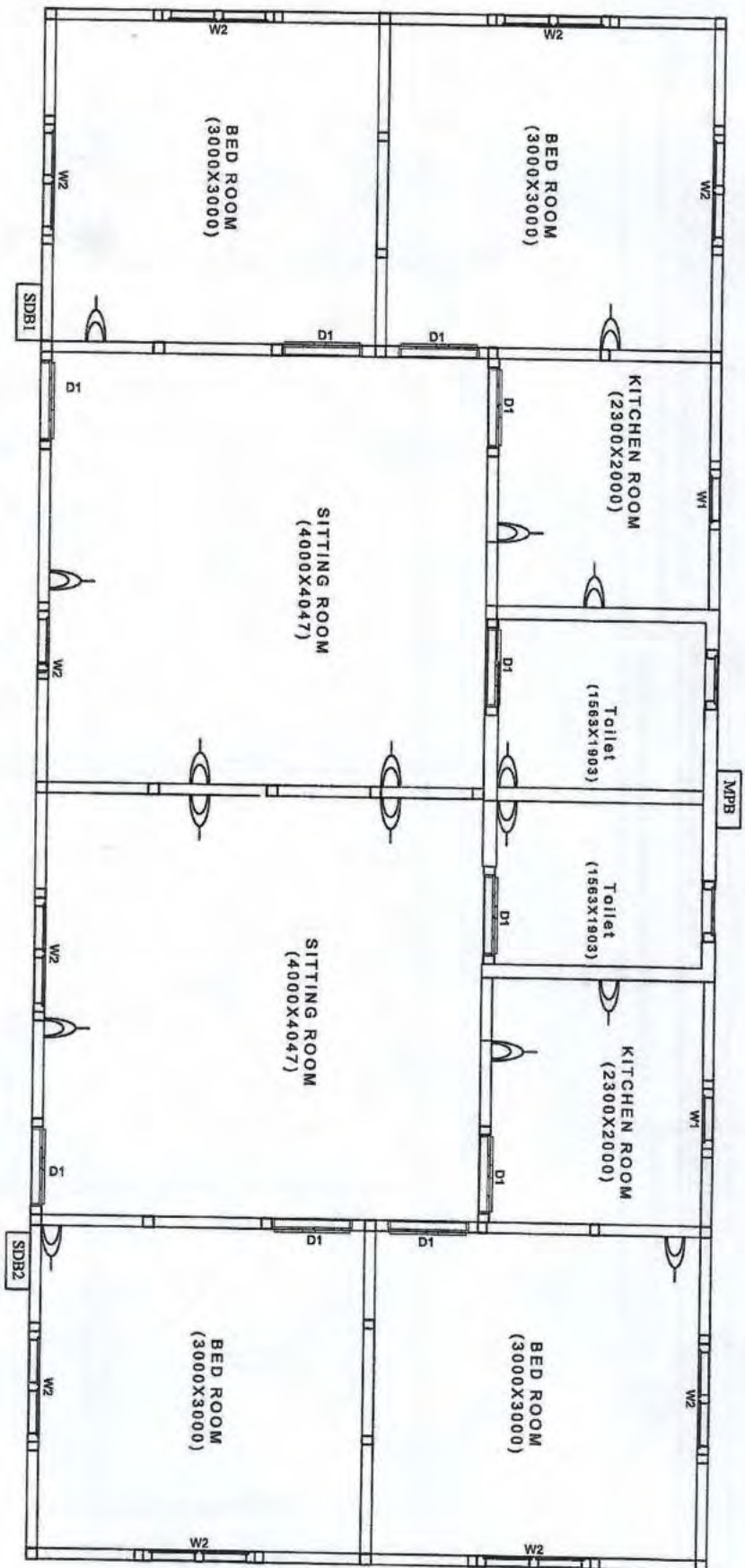
All dimension in mm

Drawn by: Yeshy Lhendup

Checked by: EE/BCJ

APPROVED: Chief Engineer

Handwritten signature of the Chief Engineer.



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འཕུལ་སྤྱོད་ལྷན་ཁག་



DEPARTMENT OF AGRICULTURE
MINISTRY OF AGRICULTURE AND FORESTRY
ROYAL GOVERNMENT OF BHUTAN
TRASHICHOEDZONG, THIMPHU

Project: Electrification of Zuri Residence at Doyana under DAMC, MoAF

Title: Power point plan

Location

Inside

Scale

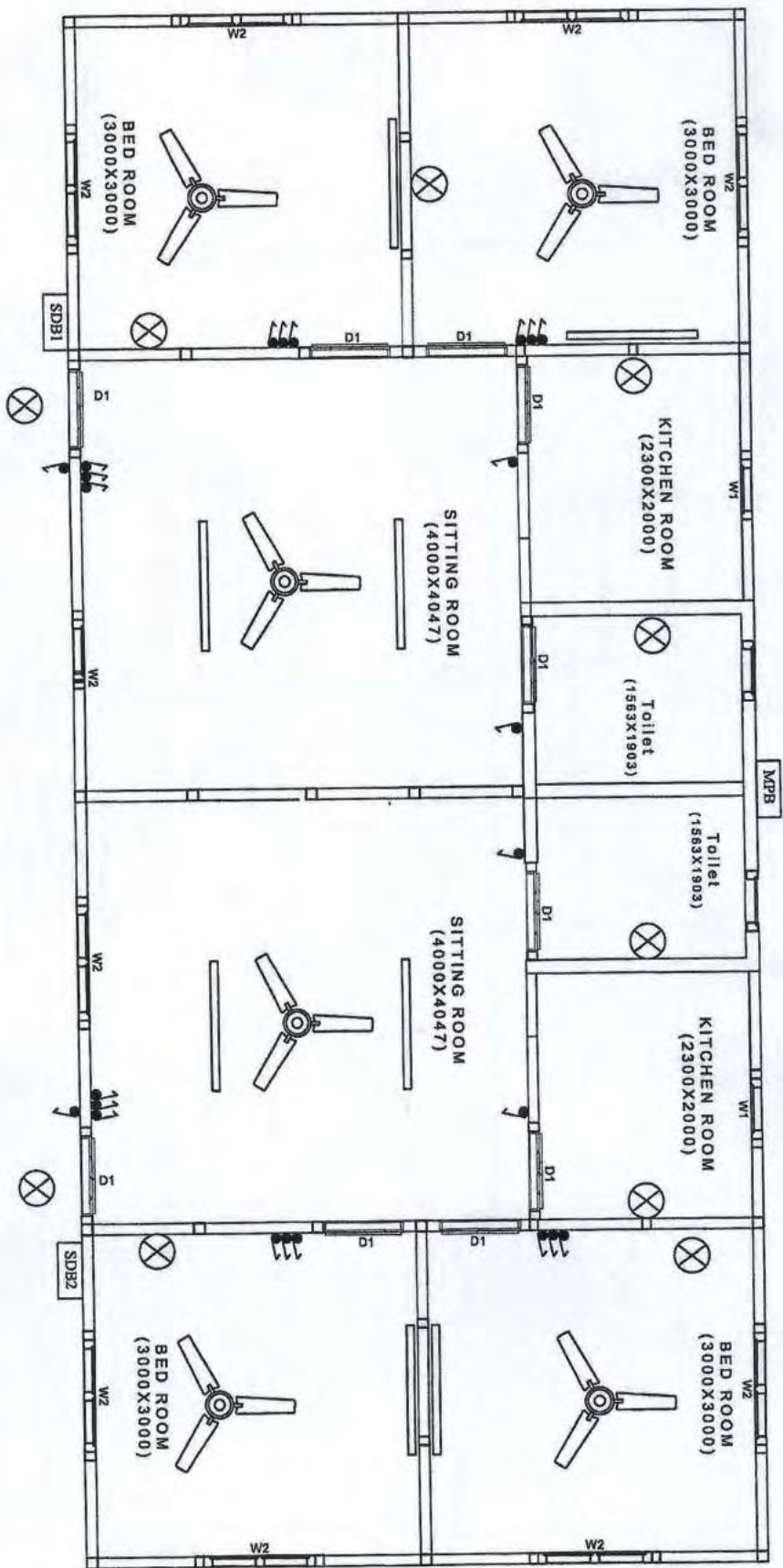
Drawing No: 2

All dimension in mm

Drawn by: Yeshey Lhendup

Checked by: EE/BC

APPROVED: Chief Engineer



Project: Electrification of Zunit Residence at Dagana under DAMC, MoAF

Drawn by: Yeshay Lendup

Title: Light point plan

Checked by: EE/BCJ

Revision

Initials

Drawing No: 1

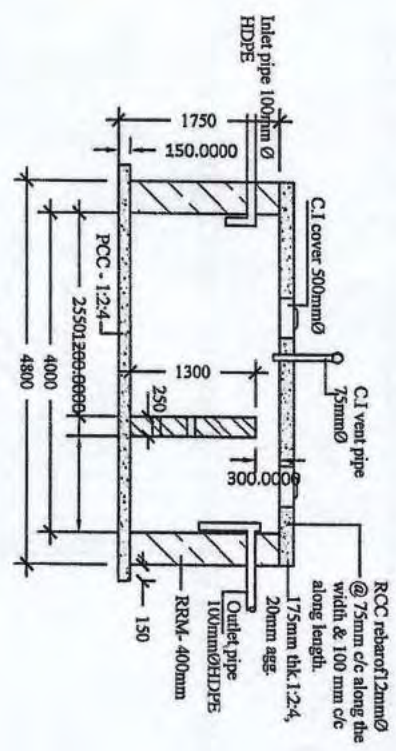
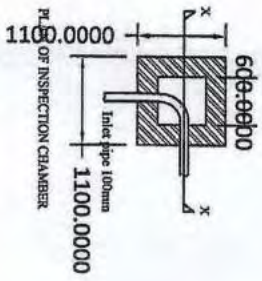
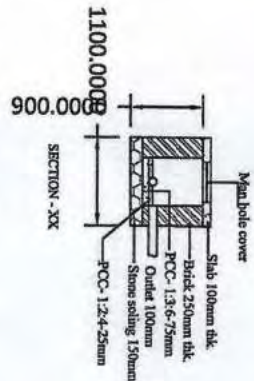
All dimension in mm

APPROVED: Chief Engineer

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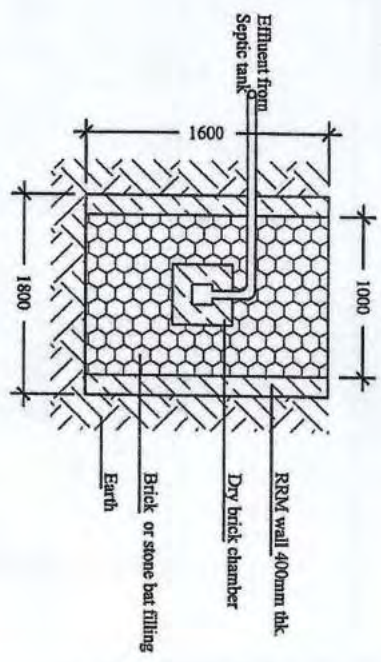


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ROYAL GOVERNMENT OF BHUTAN
TRASHI CHODZONG, THIMPHU

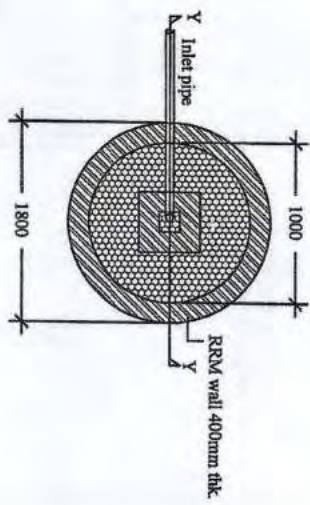


PLAN OF SEPTIC TANK

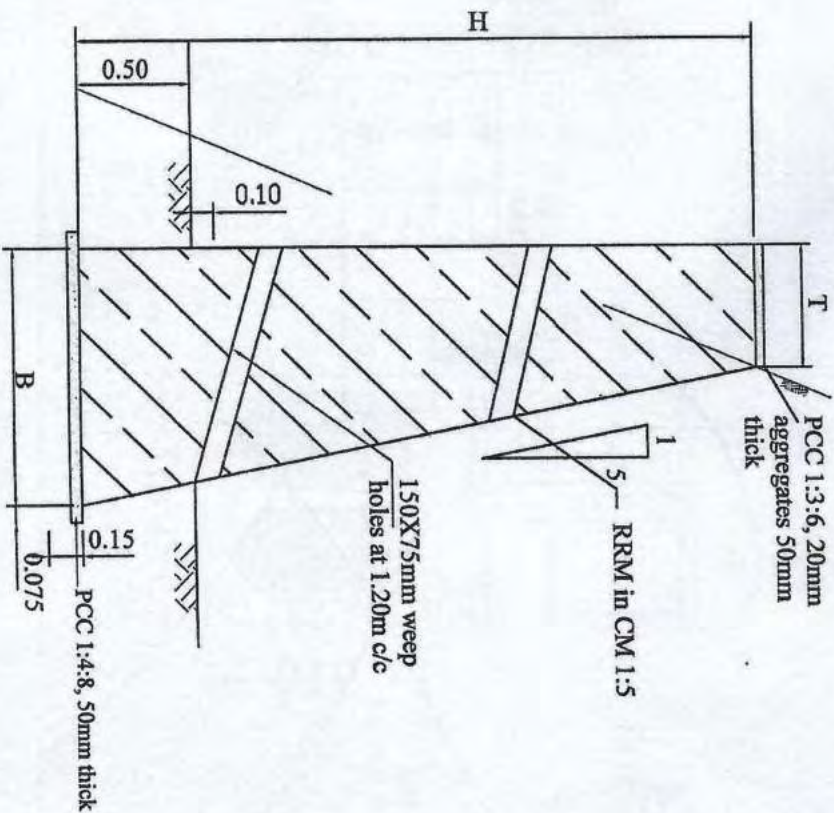
SECTION AT - YY



PLAN OF SOAKPIT



[Handwritten signature]



L=30m(1no)

CONSTRUCTION PARAMETERS		
H m	T m	B m
3.0	1.00	1.50



ROYAL GOVERNMENT OF BHUTAN
MINISTRY OF AGRICULTURE & FORESTS
Department of Agriculture



Project: Construction of Retaining wall at Dagapela under
DAMC

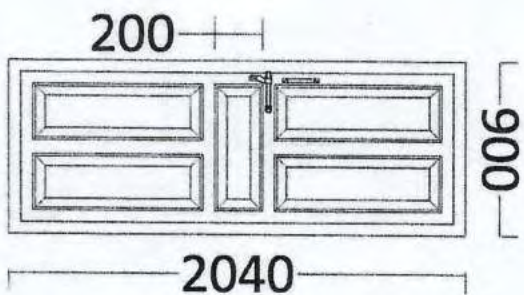
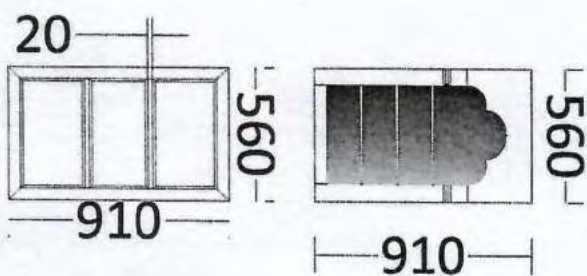
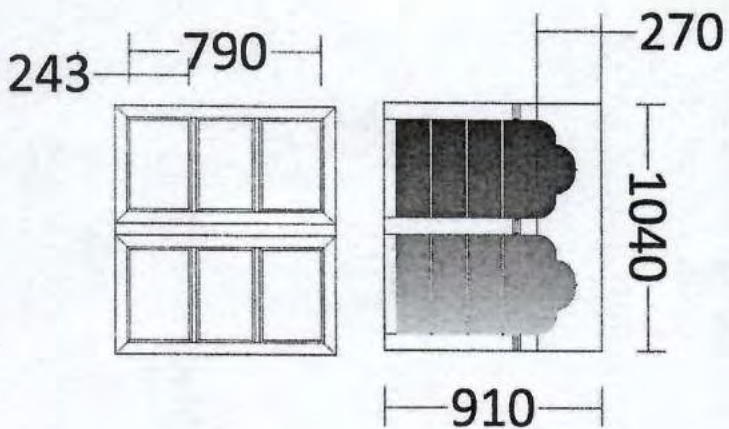
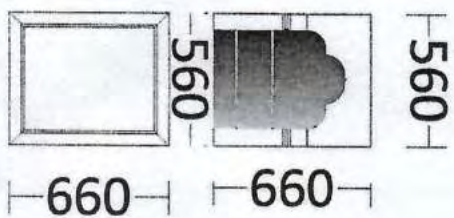
Title: Cross section.

Scale

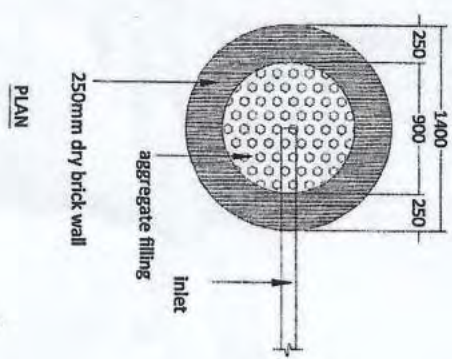
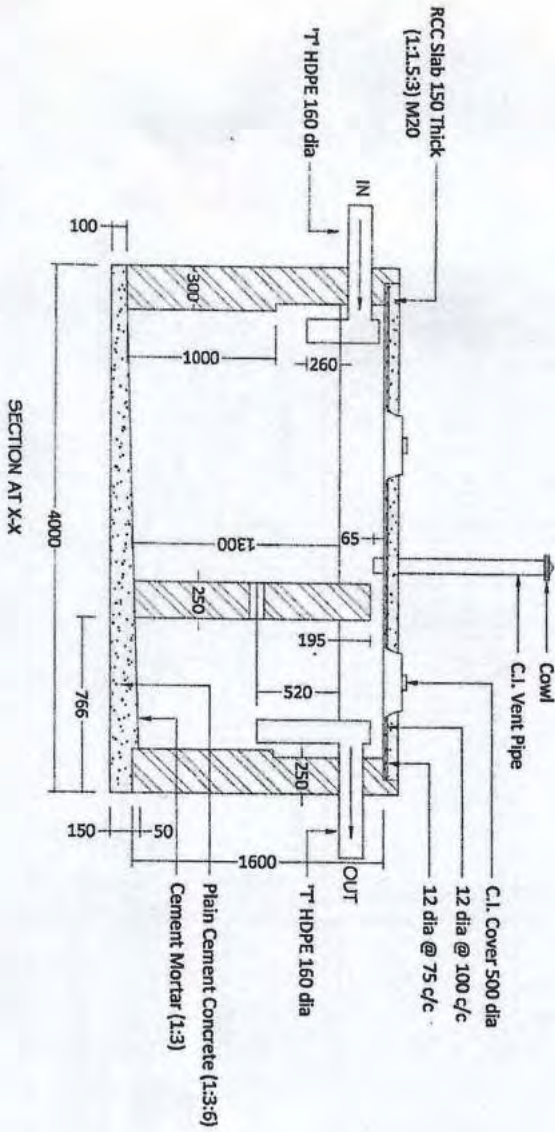
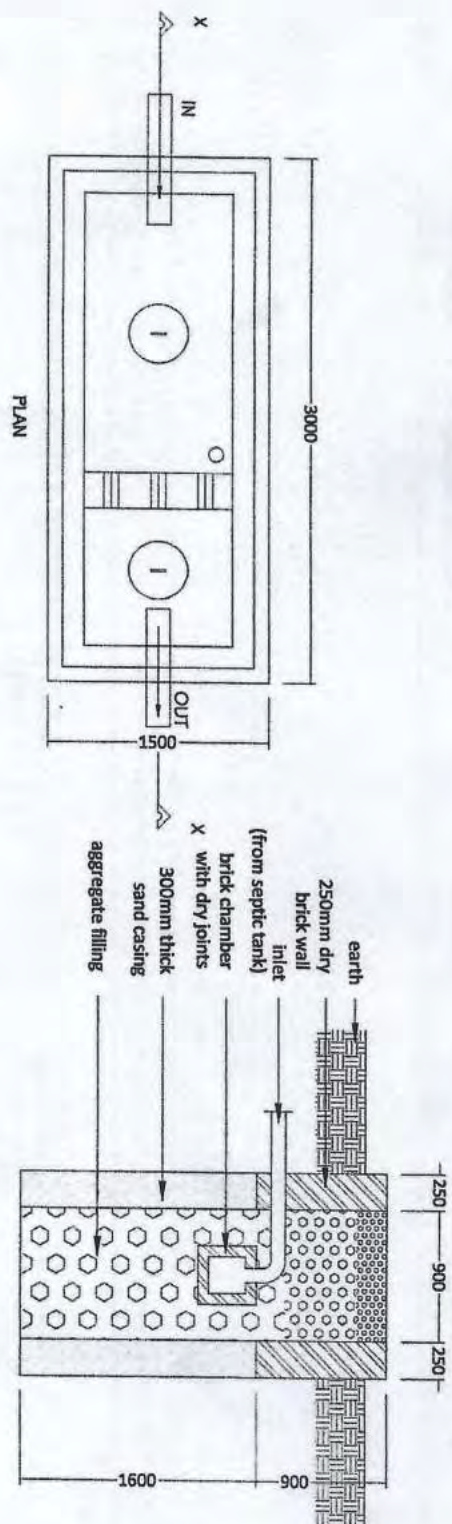
Drawing No:

Design Drawn by: Kunga Yeshi

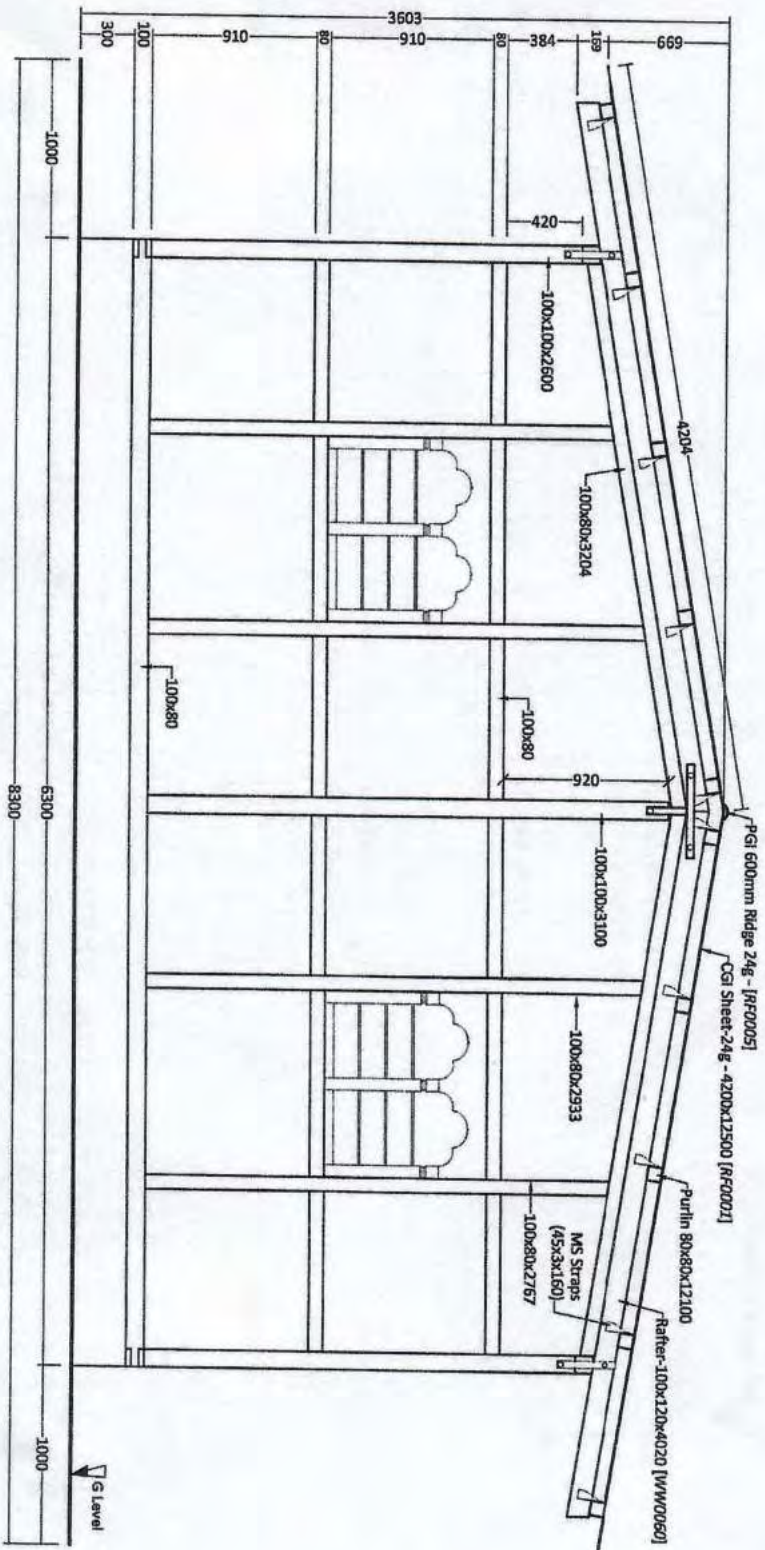
CHECKED/APPROVED BY: Chief Engineer



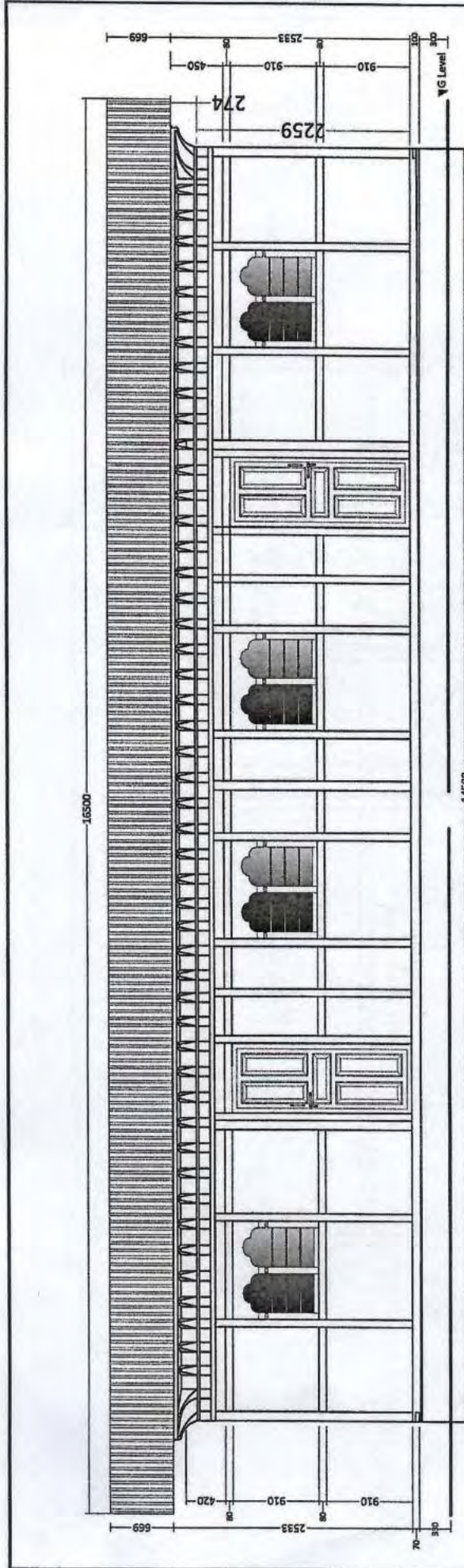
Scale : 1:50	Rev No/Date	Content	NOTE:- All dimensions in "mm" unless specified otherwise. Dimensions are to be read not measured. Report any discrepancies to the engineer/designer.		2 units Staff Quarter at Dagapela Department of Agricultural & Marketing Co-operatives, MOAF	SUBJECT: Windows and Doors DESIGN/DRAWN BY:- <i>Angela Thinh</i> <i>Architect</i>		CHECKED BY:- <i>Chib Engineer</i>	
Unit : "mm"		N/A							
File Name :									
Drawing No.: EH-01									
Sheet No. : 07 of 07			1.						
			2.						
			3.						



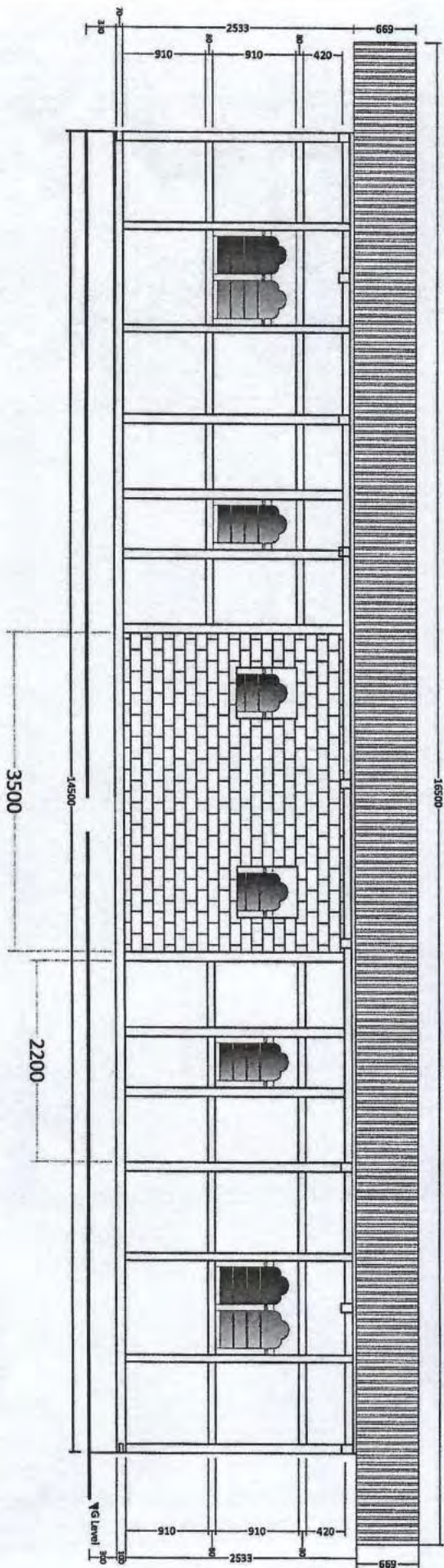
Scale	1:50	Rev.No/Date	Content	NOTE:-	2 units Staff Quarter at	SUBJECT: Septic tank
Unit	"mm"			1. All dimensions in "mm" unless specified otherwise.	Dagapala	DESIGN/DRAWN BY:
File Name	:			2. Dimensions are to be read not measured.	Department of Agricultural & Marketing Co-operatives,	Kinga Teah
Drawing No.	EH-02			3. Report any discrepancies to the engineer/designer.	MoAF	AED, MoAF
Sheet No.	06 of 07					Chef Engineer



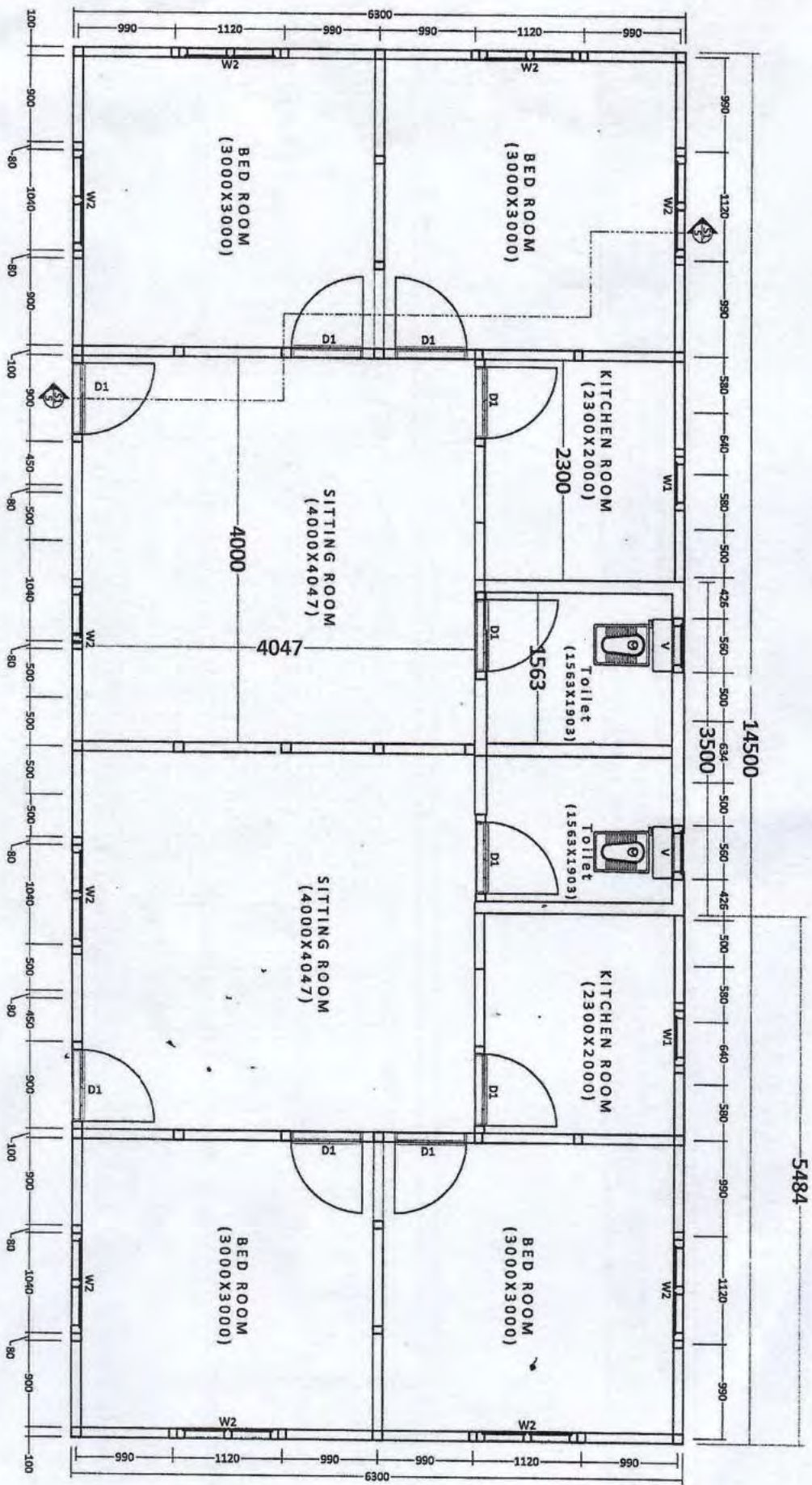
Scale : 1:40	Rev.No/Date	Content	NOTE:-	Zunits Staff Quarter at Dagapella Department of Agricultural & Marketing Co-operatives, MOAF		SUBJECT: ELEVATION- Side	CHECKED & APPROVED BY:-
Unit : "mm"		N/A	1. All dimensions in "mm" unless specified otherwise.			DESIGN/DRAWN BY:-	
Drawing No.: E/H-02			2. Dimensions are to be read not measured.			Kingo Teah	
Sheet No. : 05 of 07			3. Report any discrepancies to the engineer/designer.			AED, MOAF	Chief Engineer



Scale : 1:100	Rev.No/Date	Content	NOTE:-	2 units Staff Quarter at	SUBJECT: Front Elevation	CHECKED & APPROVED BY:-
Unit : "mm"		NA	1. All dimensions in "mm" unless specified otherwise.	Dagapela	Kingpa Tenzin	10
File Name :			2. Dimensions are to be read not measured.	Department of Agricultural & Marketing Co-operatives,	AED, DoA, MoAF	Tshering,
Drawing No.: EHF-01			3. Report any discrepancies to the engineer/designer.	MoAF		Offg Chief Engineer
Sheet No. : 03 of 07						



Scale : 1:100	Rev. No/Date	Content	NOTE:-	2 units Staff Quarter at Dagapela Department of Agricultural & Marketing Co-operatives, MoAF		SUBJECT: <i>Rear Elevation</i>	
Unit : "mm"		N/A	1. All dimensions in "mm" unless specified otherwise			DESIGN/DRAWN BY:	CHECKED & APPROVED BY:-
File Name :			2. Dimensions are to be read not measured.			<i>Kingor Teach</i> ASD, P.O. Box 10001	<i>Chief Engineer</i>
Drawing No.: EH-01			3. Report any discrepancies to the engineer/designer				
Sheet No. : 02 of 07							



Scale : 1:100	Rev/No/Date	Content	NOTE:-
Unit : "mm"		N/A	1. All dimensions in "mm" unless specified otherwise.
File Name :			2. Dimensions are to be read not measured.
Drawing No.: FH-01			3. Report any discrepancies to the engineer/designer.
Sheet No. : 01 of 07			

2 units Staff Quarter at

Dagapela

Department of Agricultural & Marketing Co-operatives,
MOAF

SUBJECT: SITE PLAN SKETCH

DESIGN/DRAWN BY:-

Kinga Techi
AED, DoA, MOAF

CHECKED & APPROVED BY:-

Chief Engineer

5484