

TENDER DOCUMENT
FOR

PACKAGE - 02
“CONSTRUCTION OF NEW DIET BUILDING -
HNAHTHIAL”

UNDER
SAMAGRA SHIKSHA
MIZORAM

Part – I

SAMAGRA SHIKSHA

: C. LALTHANZIRA

1. Name of Work : **Construction of New DIET Building**
2. Name of location/Village : **Hnahthial**
3. Amount : **Rs. 4,10,28,384.28**
4. Completion Period : **2 years**
5. Date of issue of Inviting Tender : **7th December, 2023.**
6. Deadline for receiving Bids : **21st December, 2023 @ 12:00 p.m.**
7. Time & Date for Opening Technical Bids : **21st December, 2023 @ 1:00 p.m.**
8. Time & Date for Opening Financial Bids : **21st December, 2023 @ 3:00 p.m.**
9. Place of Opening Bids : **State Project Director Chamber, Samagra Shiksha, Mizoram.**
10. Last date of Bid validity : **90 days from opening of technical bid**
11. Officer Inviting Bids : **State Project Director, Samagra Shiksha, Mizoram**

Part – II

INFORMATION TO BIDDERS (ITB)

1. Scope of Bid –

- 1.1 The purpose of this assignment is to obtain independent and objective assessment of the technical quality of all construction works to be completed and to assure that the civil works are constructed with good construction materials and as per desired standard of good quality construction.
- 1.2 The Successful Bidder will be expected to complete the works by the intended completion date specified in part – I.
- 1.3 Extension of time will be allowed only if the Hindrance is submitted to State Project Director and were found reasonable.

2. Eligible Bidders –

- 2.1 This Invitation for Bids is opened to all bidders empaneled under Finance Department, Government of Mizoram and as defined in clause 3 of ITB.
- 2.2 Bidder shall not be under a declaration of ineligibility for corrupt and fraudulent practices by the Central Government, State Govt. or any Public undertaking by whatever name called under the Central or the State Govt.

3. Qualification of the Bidders-

- 3.1 All Bidders shall include the following information and Documents with their bids.
 - (a) Attested Copies of documents defining the bidder is an empanelled firm (for particular work) with valid registration under Finance Department, Govt. of Mizoram.
 - (b) Experience in undertaking Civil Work with value of Works performed for each of the last 3 years certified from the concerned officer not below the rank of Executive Engineer or equivalent (in case of work under Govt.).
 - (c) Details of Key Personnel for the assignment with qualifications and relevant experience supported by suitable documents.
- 3.2 Each bidder must produce:
 - (a) An affidavit that the information furnished with the bid Documents is correct in all respects.
 - (b) GST Registration Certificate
 - (c) Quality Assurance/ Management Systems
- 3.3 Work Methodology
- 3.4 Financial Turnover Figures for last 3 years (as per audited by Registered Chartered Accountants).

4. Disqualification

- 4.1 Absence of anyone of the documents stated on clauses 3 & 11.1 will be disqualified with the acceptance of the Bidders.

Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:

- (a) Made misleading or false representation in the forms, Statements, Affidavits and attachment, submitted in proof of the qualification requirements, and /or
- (b) Record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc.
- (c) Participated in previous bidding for the same work and had quoted unreasonably high or low bid prices and could not furnish rational justification for it to the employers.
- (d) In quoting the Rates, bidder must take reference from the rate indicated in the Mizoram PWD Schedule of rates 2019. (All rates should be quoted as per SOR 2019 and rates quoted below/ above will be considered unworkable rates.)**

5. No. of Bid per bidder

- 5.1 Each bidder shall submit only 1 bid for 1 work. A bidder who submits more than 1 bid for the same work will cause the proposals with the bidder's participation to be disqualified.

6. Site Visit.

- 6.1 The Bidder, at his own cost, responsibility and risk, is encouraged to visit, examine and familiarize himself with the site of work and its surroundings.

7. Amendment of Bidding Documents-

- 7.1 Before the deadline for submission of bids, the employer may modify the bidding documents by issuing addenda.
- 7.2 Any addendum thus issued shall be part of the bidding documents and shall be notified.
- 7.3 To give prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the employers shall extend, as necessary, the deadline for submission of bids.

8. Language of Bids-

- 8.1 All Documents relating to the bid shall be in English or Mizo.

9. Documents Comprising the Bids –

9.1 The Bids submitted by the bidder shall be in two separate parts.

Part-I

It shall be named “Technical Bid” and shall comprise of –

- (a) Earnest Money in a separate sealed envelope cover marked, “Earnest Money.”
- (b) Qualification information, supporting documents, affidavit and other documents as specified in clause 3 of ITB.
- (c) Tender Document giving signature in every page (including blank page).

Part-II

It shall be named “Financial Bid” and shall comprise of –

- (a) Form of bid as specified in Part V
- (b) Priced Bill of Quantities as specified in Part VII

Each part shall be separately sealed and marked in accordance with sealing and marking instruction in clause 13.

10. Bid Price-

- 10.1 All duties, taxes, royalties and other levies payable by the Contractor under the Contract, or for any other cause, shall be included in the rates, prices, and total bid price submitted by the bidder. The employer shall not be bound to any liability in this regard.
- 10.2 The rates and prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subjected to adjustment unless otherwise approved by State Project Director.

11. Earnest Money.

- 11.1 The bidder shall furnish, as part of the bid, Earnest Money of 2% of the estimated cost.
- 11.2 The Earnest Money shall, at the Bidder’s option, be in the form of anyone of the following issued in favour of the name given in Part – I (Employer):
 - i) Treasury Challan
 - ii) Deposit at call receipt of a scheduled bank guaranteed by RBI
 - iii) Banker’s cheque of a scheduled bank
 - iv) Demand draft of a scheduled bank
 - v) Fixed Deposit Receipt (FDR) of a scheduled bank
- 11.3 The Earnest Money of unsuccessful bidders will be returned.

- 11.4 The Earnest Money of the successful bidder will be discharged when the bidder has signed the Agreement and furnished the required Performance security.

12. Format and Signing of Bids:

- 12.1 The Bidder shall submit 1 set of the bid comprising of the Documents as describe in clause 9.
- 12.2 All Pages of the bid shall be signed by the person (bidder).
- 12.3 The bids shall contain no over writing, alteration or addition, except those to comply with instructions issued by the employer, or as necessary to correct errors made by the bidders, in which case such corrections shall be made by scoring out the cancelled portion, writing the correction and initialing and dating it by the person (bidder).

13. Sealing & Marking of bids

- 13.1 The Bidder shall place the two separate envelopes (called inner envelopes) marked “Technical Bid” and “Financial Bid” in one outer envelope. The inner envelope will have markings as follows:

Technical Bid

Technical Bid

To: (Name and address of the Employer)

Name of Work: _____

From: (Name and address of the Bidder)

Financial Bid

Financial Bid

To: (Name and Address of the Employer)

Name of Work: _____

From: (Name and address of the Bidder)

The contents of the Technical and Financial Bids shall be as specified in clause 9.1 of ITB

- 13.2 The outer envelopes containing the Technical (including Earnest Money in separate Envelope) & Financial Bids shall contain–
- Tender Document
- To: (Name and Address of the Employer)
- Name of Work: _____
- From: (Name and address of the Bidder)

14. Deadline for submission of Bids

- 14.1 Complete Bids (Including Technical and Financial) must be received by the Employer at the address specified in the Part – I not later than the date and time indicated in Part – I

- 14.2 The Employer may extend the deadline for submission of Bids by issuing an amendment in accordance with clause 7, in which case all rights and obligations of the Employer and the Bidders previously subject to the Original deadline will then be subject to the new deadline.

15. Bid Opening

- 15.1 The Employer will open the Bids received (Except those received late) in the presence of the Bidders/Bidders' representatives who chose to attend at the time, date and place specified in the Part – I
- 15.2 The envelope containing the Technical Bid only shall be opened.
- 15.3 In all other cases the availability of Items defined in Clauses 3 & 11 will be accepted.
- 15.4 Evaluation of Technical Bids with respect to Bid Security, Qualification information and other information furnished in Part – I of Clause 9.1 shall be taken up immediately.
- 15.5 The Employer shall notify, whose Technical bids are found responsive, date, time and place of opening of Financial Bids as stated in Part – I.
- 15.6 At the Time of opening of the Financial Bids, the names of the bidders whose bids were found responsive in accordance with clause 15.4 of ITB will be announced. The financial bids of only those bidders will be opened. The remaining bids will be returned unopened to the Bidders. The responsive bidders' names, the bid prices, the total amount of each bid, and such other details as the Employer may consider appropriate will be announced by the Employer at the time of bid opening. Any bid price, which is not read out and recorded, will not be taken into account in Bid evaluation.
- 15.7 Technical Bids & Financial Bids shall be evaluated by the State Level Purchase Committee (SLPC).
The Technical Bid will be evaluated on the basis of the following evaluation criteria.

Sl/No	Details	Max. Marks
1	Experience of the firm in execution of Construction projects last three years. (supported by Work done/Completion Certificate)	20
2	Methodology	25
3	Suitability of Key personnel for the assignment	
	a) Qualification	25
	b) Relevant Experience	20
4	Financial Turnover Figures for last 3 years (as per audited by Registered Chartered Accountants)	5
5	Quality Assurance/Management Systems	5

The Financial Bid will be evaluated on the basis of the following evaluation criteria.

Sl/No	Details	Max. Marks
1	Bill of Quantities with respect to the catered amount	100

The weightage of mark for technical bid will be 30% and that of financial bid will be 70%.

16. Process to be Confidential

16.1 Information relating to the examination, clarification, evaluation and comparison of Bids and recommendations for the award of a contract shall not be disclosed to bidders or any other persons not officially concerned with such process until the award to the successful bidder has been announced. Any attempt by a bidder to influence the Employer's processing of bids or award decisions may result in the rejection of his Bid.

17. Clarification of Bids and Contacting the Employer

- 17.1 No Bidder shall contact the Employer on any matter relating to its Bid from the time of the Bid opening to the time the contract is awarded.
- 17.2 Any attempt by the Bidder to influence the Employer's Bid evaluation, bid comparison or contract award decision may result in the rejecting of his/her Bid.

18. Examination of Bids and determination of Responsiveness

18.1 During the detailed Evaluation of "Technical Bids" the Employer will determine whether each bid (a) meets the eligibility criteria define in clauses 3, (b) has been properly signed, (c) Is accompanied by the required securities/EMD and, (d) Substantially responsive to the requirement of the Bidding Documents. During the detailed Evaluation of the "Financial Bid", the responsiveness of the Bid will be further determined with respect to the remaining bid conditions, i.e., priced bill of quantities, Technical Specifications and drawings in short, the responsiveness eligibility and/or Qualification of the Bidder shall be Evaluated based on: -

- i. Financial capability of the bidder.
- ii. Capability of the Bidder to Mobilize and deploy the required manpower.
- iii. The Bidder capability to manage similar nature of work.
- iv. The bidder past performance and experience in executing similar contract work.
- v. The bidder past litigation history.
- vi. The methodology and Schedule proposed for the work
- vii. Any other documents submitted by the bidder to augment the advantage in commencing the work.

- 18.2 A substantially responsive “Financial Bid” is one, which conforms to all the rates as quoted in the Bill of Quantities.
- 18.3 If a financial bid is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.
- 18.4 Other things being equal, preference will be given to the Consultant personnel with a minimum of Class – VIII level of Mizo language and having experience in working similar work inside the State of Mizoram.

19. Award Criteria

- 19.1 The Employer will award the contract to the bidder whose bid has been determined to be substantially responsive to the bidding documents and who has scored the highest mark in comparative statement provided that such bidder has been to be eligible in accordance with the provision of clause 2 and Qualified in accordance with the provision of Clause 3.
- 19.2 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, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the Ground for the Employer’s action.
- 19.3 The employer will have the right not to award the lowest bidder without announcing any reason behind.**

20. Notification of Award & Signing of Agreement:

- 20.1 The bidder whose bid has been accepted will be notified to Award by the Employer prior to expiration of the Bid Validity Period. This letter will state that the employer will pay to the contractor in consideration of the Execution and Completion.
- 20.2 The Notification of the Award will constitute the formation of the contract, subject only to the furnishing of a performance security in accordance with the provisions of clause 21.
- 20.3 The Agreement will incorporate all agreement between the employer and the successful bidder. It will be signed by the Employer and the successful bidder after the performance security is furnished.

21. Security Deposit:

The security deposit amounting to 2.5 % of the tendered and accepted value of the work shall be collected by deductions from the running bill of the contractors at the rate of 2.5 % of the gross amount of the bill. This is in addition to the performance guarantee that the contractor is required to deposit as per para 22.

22. Performance Guarantee:

- 22.1 Within 15 days after receipt of Letter of Acceptance, the successful bidder shall deliver to the employer a performance Guarantee of 5% of the contract cost.
- 22.2 The Performance Guarantee shall be either in the form of a Bank Guarantee or Call Deposit or Fixed Deposit Receipts in the name of the Employer, from a Commercial Bank.
- 22.3 Failure of the Successful bidder to comply with the requirement of clause 22.1 shall constitute sufficient grounds for cancellation of the Award and forfeiture of the earnest money or may be considered to be deducted from Running Bills with prior permission of the Employer.
- 22.4 Performance Guarantee may be released after completion certificate is signed by the employer and if there is not any damage in the construction with the acceptance of the State Project Director.

23. Liquidated Damages:

- 23.1 In case of abandoning of Works or incompleteness of work within the time period stated in Part I, liquidated damages shall be imposed to the contractor at the rate of 0.5% of contract amount per week with a maximum limit of 10% of the contract amount if and only if the time extension is not allowed as per Clause No. 1.3 of ITB.

Part – III

SAMPLE FORMAT FOR EVIDENCE OF ACCESS TO OR AVAILABILITY OF CREDIT FACILITIES. BANK CERTIFICATE

This is to certify that M/S _____ is a reputed company/society /firm with a good financial standing.

We therefore have confidence in him/her/the firm/company/society if the contract for the work, namely, _____ is awarded, he/she/the firm/company/society would be able to implement the work smoothly from accounts transaction operated by him/her/the firm/company/society in our bank till date.

His/her/the firm/company/society account no. is _____

Signature of Bank Manager _____

Name of the Bank Manager _____

Address of the Bank _____

Stamp of the Bank

Part – IV
Letter of Acceptance

(Date)

To:

(Name of the Firm)

(Address of the Firm)

This is to notify you that the Employer, namely, _____ has accepted your
Bid dated _____ for execution of the _____

(name of the Contract and identification number, as given in the Contract Data) for the
Contract Price of Rupees _____
_____ (amount in figures and words) as corrected and
modified in accordance with the Instructions to Bidders is hereby accepted by our
Agency.

You are hereby requested to furnish Performance Security, bid in the form detailed in
Cl.22 of ITB for an amount of Rs _____ within 10 day of the receipt of this letter
of acceptance valid up to 45 days from the date of expiry of Defects Liability Period
_____ and sign the contract, failing which action as stated in 22.3 of ITB will be
taken.

Yours faithfully,

Authorized Signature: _____

Name and Title of Signatory: _____

Name of Agency: _____

Part – V
Form of Bid

To, (Name of the Employer) : The State Project Director, Samagra Shiksha
Address (Address of the Employer) : Mc Donald Hill, Zarkawt, Aizawl
Description of the Work : _____
Name of Location : _____

1. I/We offer to execute the works described above and remedy any defects therein, and carry out the Conditions of contract, specifications, drawings, Bill of Quantities and Addenda for item rate Contract (Total Bid Price) Rs. _____ (in figures)
_____ (in words)

2. We undertake to commence the works on receiving work order in accordance with the contract documents.

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

We hereby confirm that this Bid complies with the Bid validity and Earnest Money required by the bidding documents and specified in the Appendix to ITB

Signature of bidder (or authorized) : _____

Name of Bidder : _____

Address : _____

Note: The Bidder shall fill in and submit this Bid form with the Bid

Part – VI

TERMS OF REFERENCE (TOR)

1. Objectives

The main objective of this assignment:

- To obtain independent & objective assessment of the technical quality of all construction works to be completed.
- To assure that the civil works are constructed with good construction materials & as per desired standards of good quality construction.

2. Governing Factors

- 2.1 The Contractor is preferably to have prior experience at least for 3 years in the field of Civil Works and completed a similar magnitude of works that covered in the proposed project.
- 2.2 The Contractor shall execute according to the items given in Bill of Quantities.
- 2.3 The Contractor shall not have the right to alter the conditions at any cost. In case of any alterations is found necessary in the specifications, the same shall be brought to the notice of the State Project Director Office immediately.
- 2.4 The assignment mentioned herein is intended to be job oriented and not time oriented and the consultant/implementing agency shall not be entitled to claim any compensation in the event of the time estimated for the completion of the work being extended for any reason what so ever.
- 2.5 In order to ensure the quality and timely completion of the work, Contractor should remain present in contact with the State Project Director.
- 2.6 Rates agreed shall be firm till the completion of work inclusive of transportation, stationary, communication charges, service Tax and all other application taxes.

3. Report to:

The State Project Director, Samagra Shiksha, School Education office Building, Top Floor, Mc Donald Hill, Zarkawt, Aizawl.

4. Stages of Deposit and Payments

- 4.1 A security Deposit will be retained by the State Project Director. The security retained amount will be returned after 4 months of receipt of the final report if there is no structural defect in the construction.
- 4.2 Payments must be made by the State Project Director, Samagra Shiksha.
- 4.3 Original copy of GST clearance from Taxation Department must be submitted in every Bill failing.

5. Inputs from Director Office, DSE:

- 5.1 The State Project Director Office will provide the required information to the Contractor.

1. General Requirements:

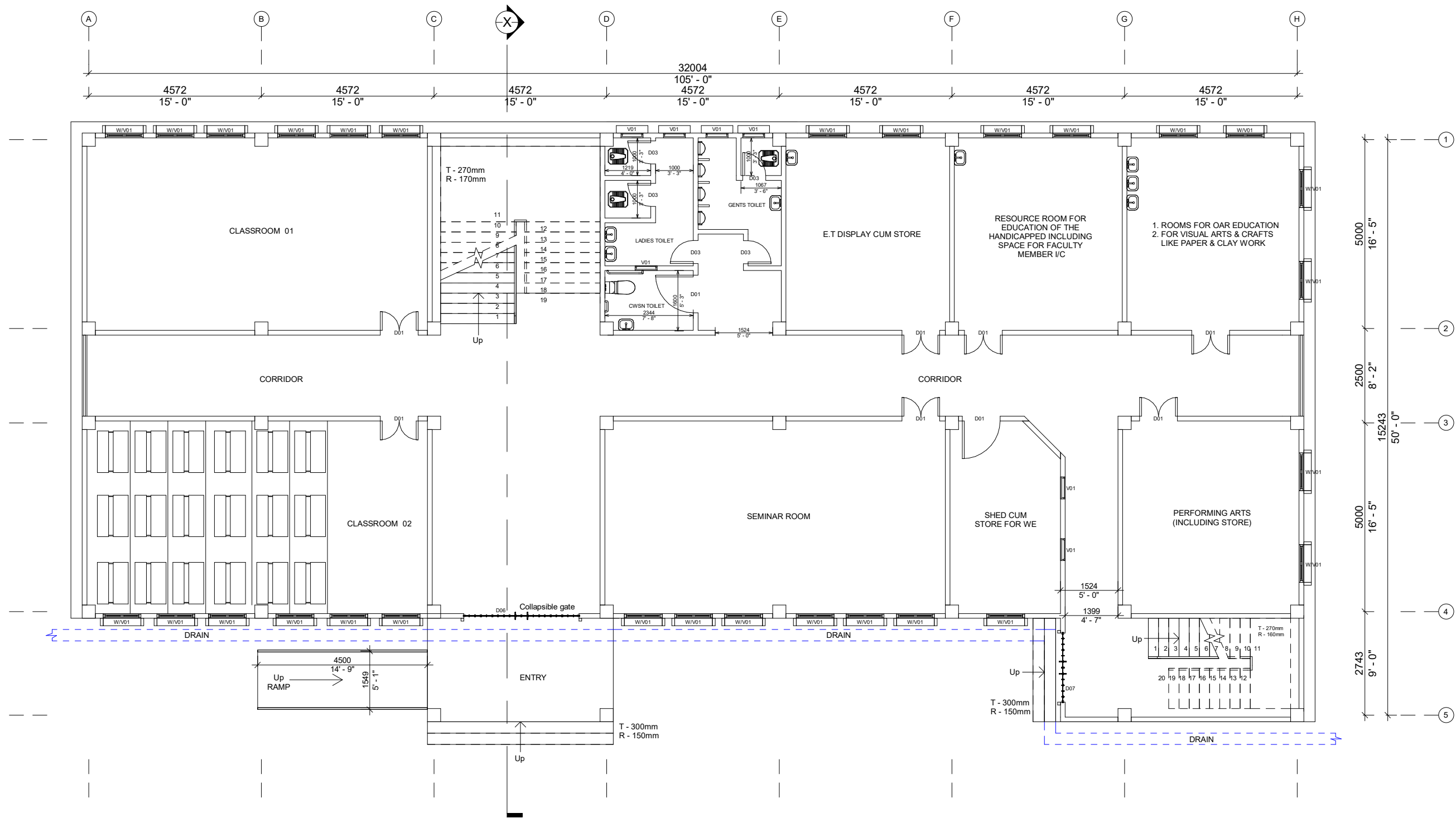
- 6.1 The State Project Director reserves full right to alter its requirements.
- 6.2 The decision of The State Project Director will be final in all the matters.
- 6.3 In case of necessity for sudden change of location or if the drawing is not matched with the selected location, the engineer-in-charge shall have the authority with the acceptance of The State Project Director to change the design within the limit of existing contract amount.
- 6.4 In case of any alteration of construction amount due to change in sanctioning amount from the govt., design and estimate may be modified accordingly. In such case, the contractor or the implementing agency shall not have the right to claim the original amount by any means.
- 6.5 All bill will be paid according to work done by maintaining MB (Measurement Book) by the contractor.

7. Force Majeure

- 7.1 Notwithstanding the provisions of the tender, the Bidder shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, its delay in performance or failure to perform its obligations under the contract is the result of an event of Force Majeure. (Ref: 8.5.20 of FM&P)

Part – VII
BILL OF QUANTITIES
(To be submitted in the Financial Bid)

CONSTRUCTION OF DIET BUILDING AT HNAHTHIAL
UNDER SAMAGRA SHIKSHA



PROJECT NAME

CONSTRUCTION OF DIET BUILDING, HNAHTHIAL DISTRICT

NOTE

D01 - 1000X2000mm
D02 - 1000X2000mm
D03 - 610X2000mm
D04 - 762x2000mm
D05 - 1200x2000mm
D06 - 10'X8'
D07 - 6'x8'
W/V01 - 1000X1828.8mm
W01 - 1524X1200mm
V01 - 600X500mm

SHEET:

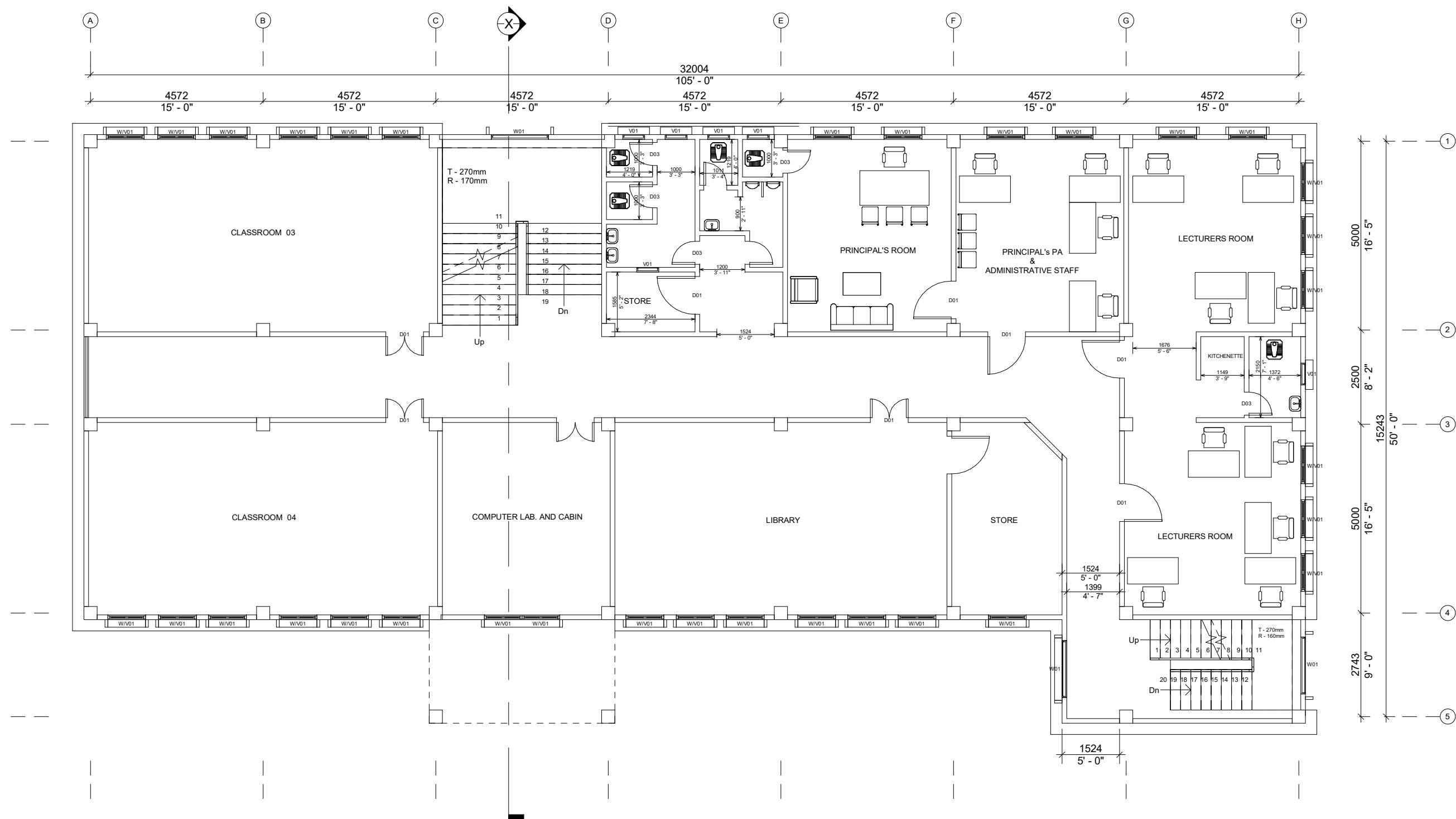
GROUND FLOOR

Date 20.09.2023

SHEET NUMBER 01

Drawn by
ENGINEERING CELL
SAMAGRA SHIKSHA
MIZORAM

Scale 1 : 100



PROJECT NAME

CONSTRUCTION OF DIET BUILDING, HNAHTHIAL DISTRICT

NOTE

D01 - 1000X2000mm
D02 - 1000X2000mm
D03 - 610X2000mm
D04 - 762x2000mm
D05 - 1200x2000mm
D06 - 10'X8'
D07 - 6'x8'
W/V01 - 1000X1828.8mm
W01 - 1524X1200mm
V01 - 600X500mm

SHEET:

FIRST FLOOR

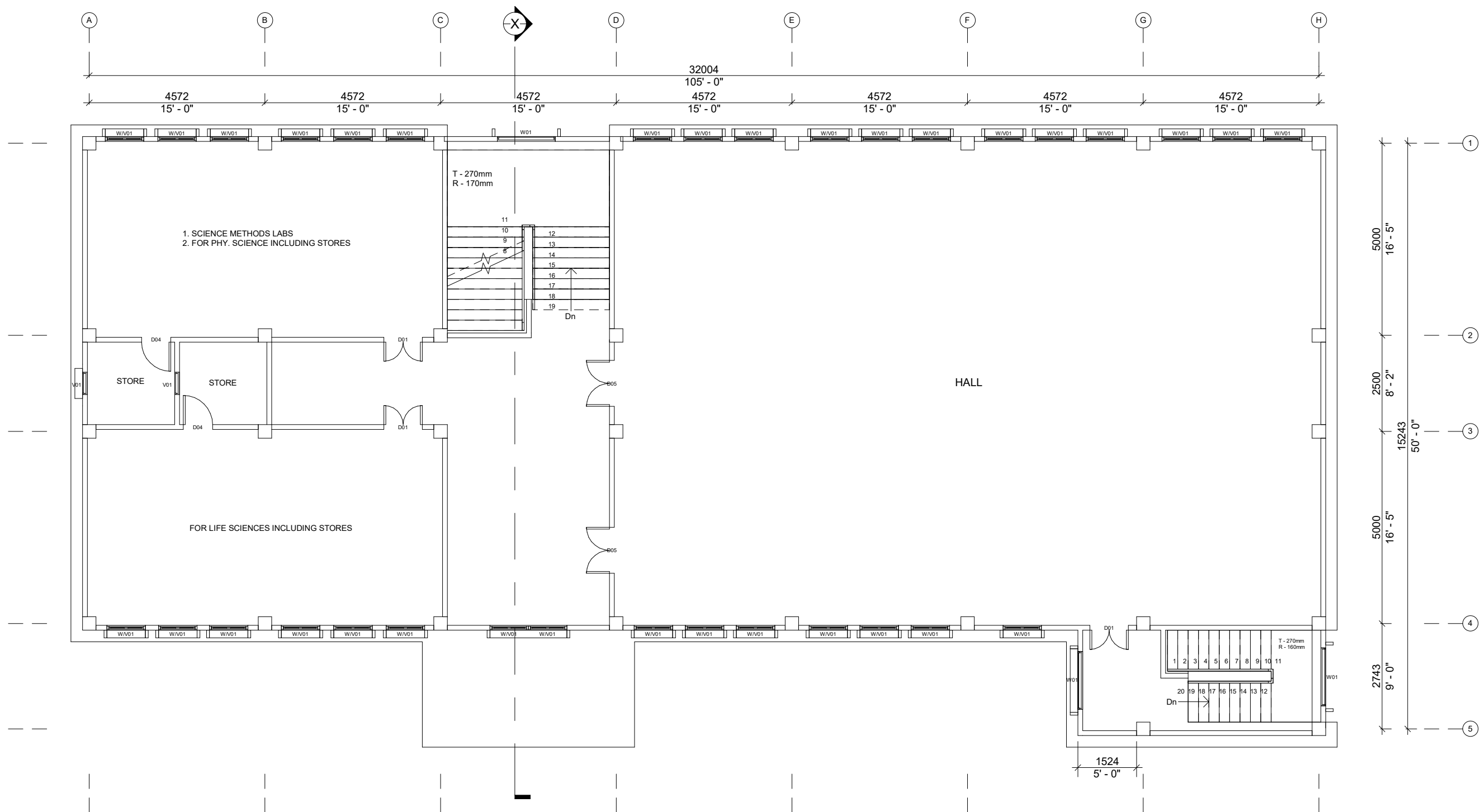
Date 20.09.2023

SHEET NUMBER

02

Drawn by
ENGINEERING CELL
SAMAGRA SHIKSHA
MIZORAM

Scale 1 : 100



PROJECT NAME

CONSTRUCTION OF DIET BUILDING, HNAHTHIAL DISTRICT

NOTE

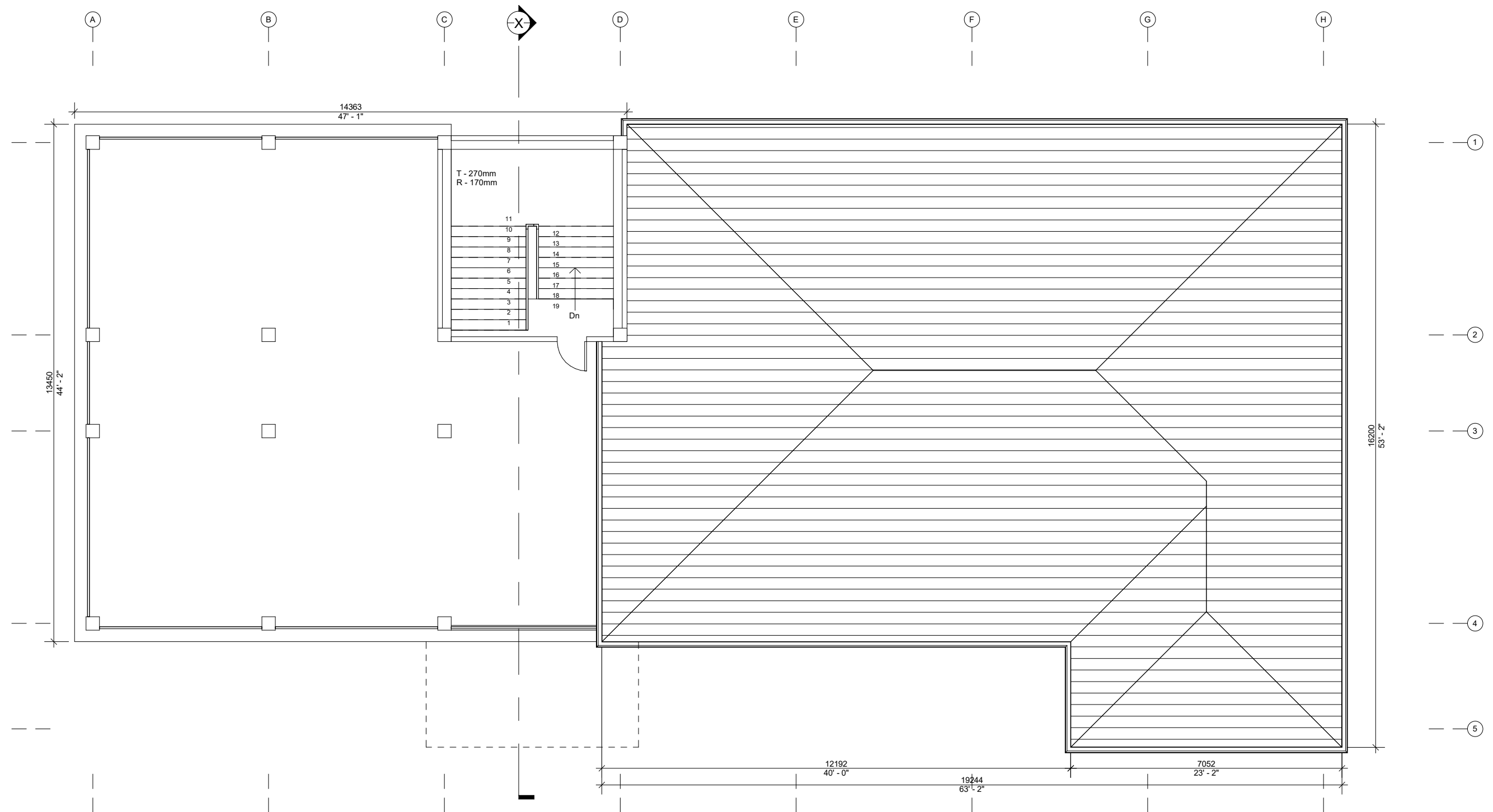
SHEET:
SECOND FLOOR

Date 20.09.2023

SHEET NUMBER 03

Drawn by
ENGINEERING CELL
SAMAGRA SHIKSHA
MIZORAM

Scale 1 : 100



PROJECT NAME

CONSTRUCTION OF DIET BUILDING, HNAHTHIAL DISTRICT

NOTE

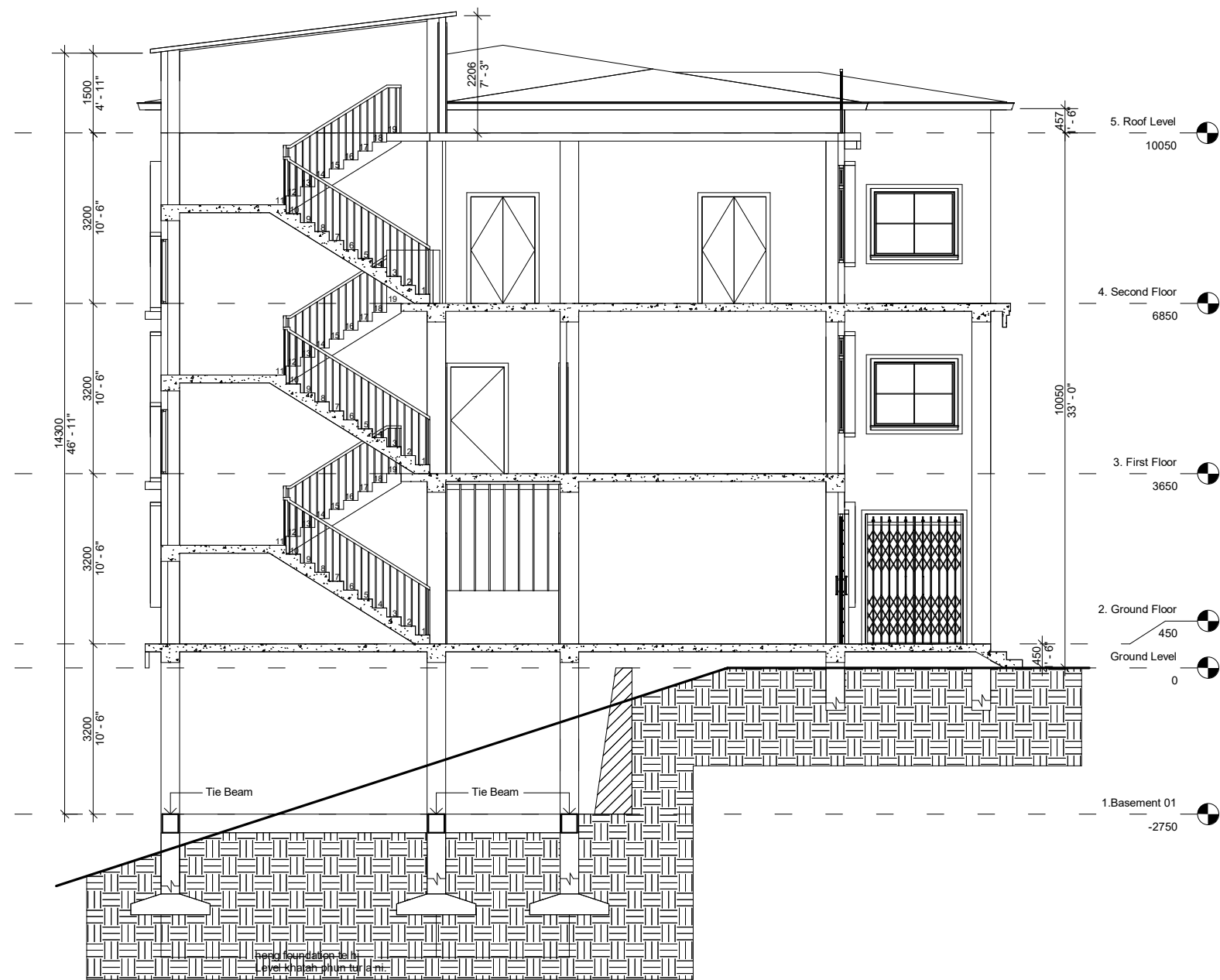
SHEET:
ROOF PLAN

Date 20.09.2023

SHEET NUMBER 04

Drawn by
ENGINEERING CELL
SAMAGRA SHIKSHA
MIZORAM

Scale 1 : 100



PROJECT NAME

CONSTRUCTION OF DIET BUILDING, HNAHTHIAL DISTRICT

NOTE

SHEET:
SECTION X

Date 20.09.2023

SHEET NUMBER 05

Drawn by
ENGINEERING CELL
SAMAGRA SHIKSHA
MIZORAM

Scale 1 : 100



PROJECT NAME

CONSTRUCTION OF DIET BUILDING, HNAHTHIAL DISTRICT

NOTE

SHEET:
FRONT ELEVATION

Date 20.09.2023

SHEET NUMBER 06

Drawn by
ENGINEERING CELL
SAMAGRA SHIKSHA
MIZORAM

Scale 1 : 125



PROJECT NAME

CONSTRUCTION OF DIET BUILDING, HNAHTHIAL DISTRICT

NOTE

SHEET:
VIEW 01

Date 20.09.2023

SHEET NUMBER 07

Drawn by
ENGINEERING CELL
SAMAGRA SHIKSHA
MIZORAM

Scale



PROJECT NAME

CONSTRUCTION OF DIET BUILDING, HNAHTHIAL DISTRICT

NOTE

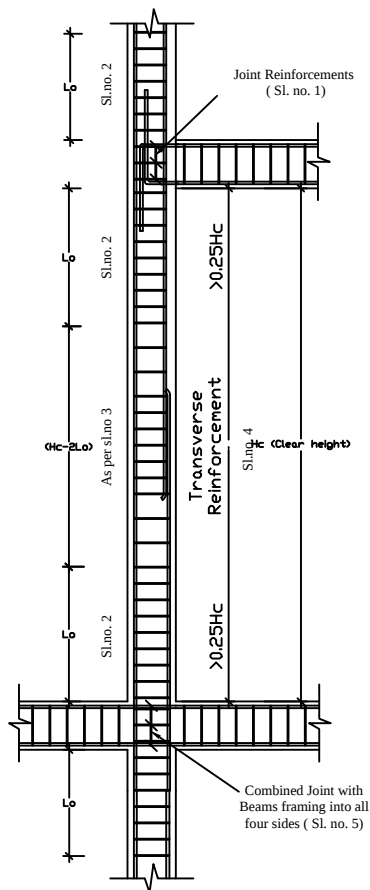
SHEET:
VIEW 02

Date 20.09.2023

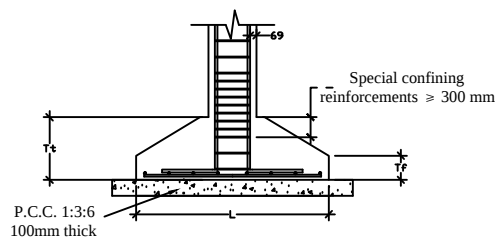
SHEET NUMBER 08

Drawn by
Author

Scale



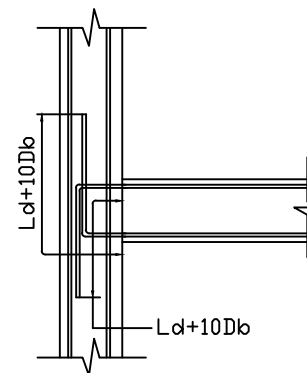
Column and joint detailing



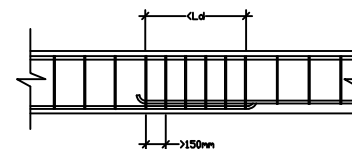
**TYPICAL
FOUNDATION**

NOTES :

1. Joint which has beam framing into one/two sides shall be provided with special confining steel with a spacing equal to Sl.No 2 within the joint
2. Special Confining Reinforcements shall be provided over a length 'Lo' from each joint face, towards mid span and on either side of any section where flexural yielding may occur under the effect of earthquake forces. The length 'Lo' shall not be less than -
a). Larger lateral dimension of the member at the section where yielding occurs. b). 1/6 of the clear span of the member. c). 450mm. The spacing of hoops used as special confining steel shall not exceed 1/4 of minimum member dimension but need not be less than 75mm nor more than 100mm.
3. The spacing of hoops within 'Hc-2Lo' shall not exceed half the least lateral dimension of the column, except where special confining reinforcements is provided for splice.
4. Lap length shall be 69 times the diameter of longitudinal reinforcements.
5. A Joint which has beams framing into all four faces shall be provided with a spacing double the special confining steel required at the end of the column. The spacing of the hoop within the joint shall not exceed 150mm.
6. Beam with higher reinforcement should be adopted at the point where two different types of beam meet.

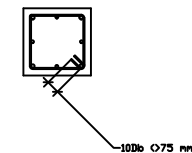


**ANCHORAGE OF BEAM AND BAR
IN EXTERNAL JOINT**



LAP SPLICE IN BEAM

Ld = Development length in tension
Db = Bar diameter



Extension of Hoop in column



HOOK DETAILS

DESIGNED BY:

**CONSTRUCTION OF DIET BUILDING AT
HNAHTHIAL**

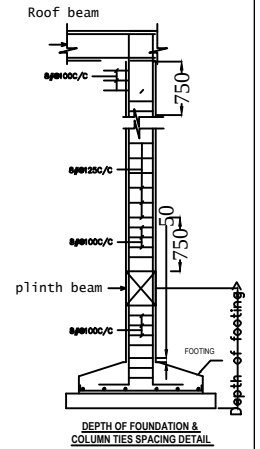
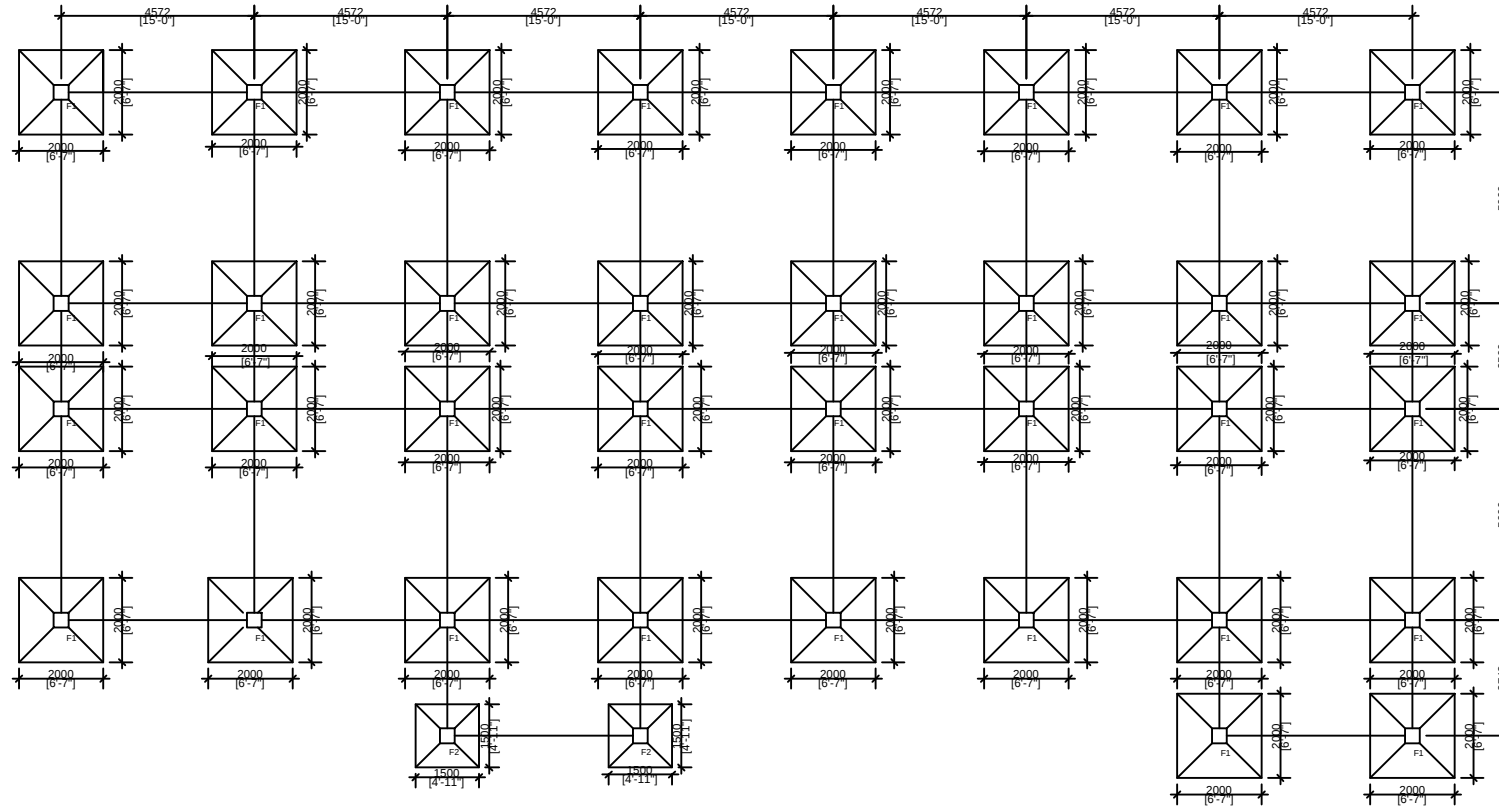
GENERAL SPECIFICATIONS
FOR STRUCTURAL DETAILS

SCALE :
NTS

DRAWING
NO:
1

ALL DIMENSIONS ARE IN MM

FOUNDATION LAYOUT



NOTES :

1. P.C.C. 1:3:6 100mm thick shall be provided for levelling course below foundation.
2. Special confining reinforcement shall be extended at least 300mm into the footing or mat when column terminates into the footing of mat.
3. Clear Cover = 50 mm.
4. Concrete Grade = M20, Steel = Fe415(Tor Steel)

SHEET NO: 2

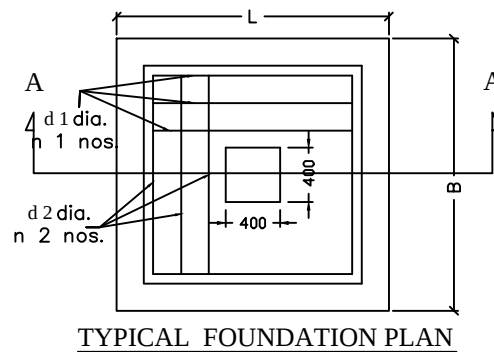
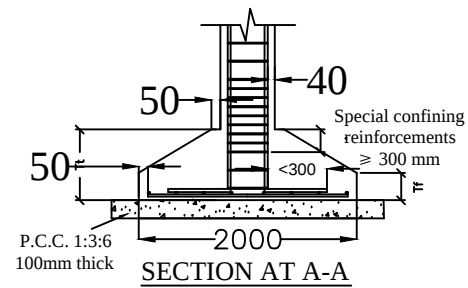
CONSTRUCTION OF DIET BUILDING AT HNAHTIAL

Scale:
Not to Scale

All dimensions
in mm

Prepared by:

FOUNDATION DETAILS



NOTES :

1. P.C.C. 1:3:6 100mm thick shall be provided for levelling course below foundation.
2. Special confining reinforcement shall be extended at least 300mm into the footing or mat when column terminates into the footing of mat.
3. Clear Cover = 50 mm.
4. Concrete Grade = M20, Steel = Fe415(Tor Steel)

Type of Footing :	Dimensions :	Tf	Tt	L Direction :		B Direction :	
	L x B			d 1 dia.	n 1 nos.	Dia. d 2	n 2 nos.
F1	2000 X 2000	150	300	12 mm	20	12 mm	20
F2	1500 X 1500	150	300	12 mm	15	12 mm	15

SHEET NO: 3

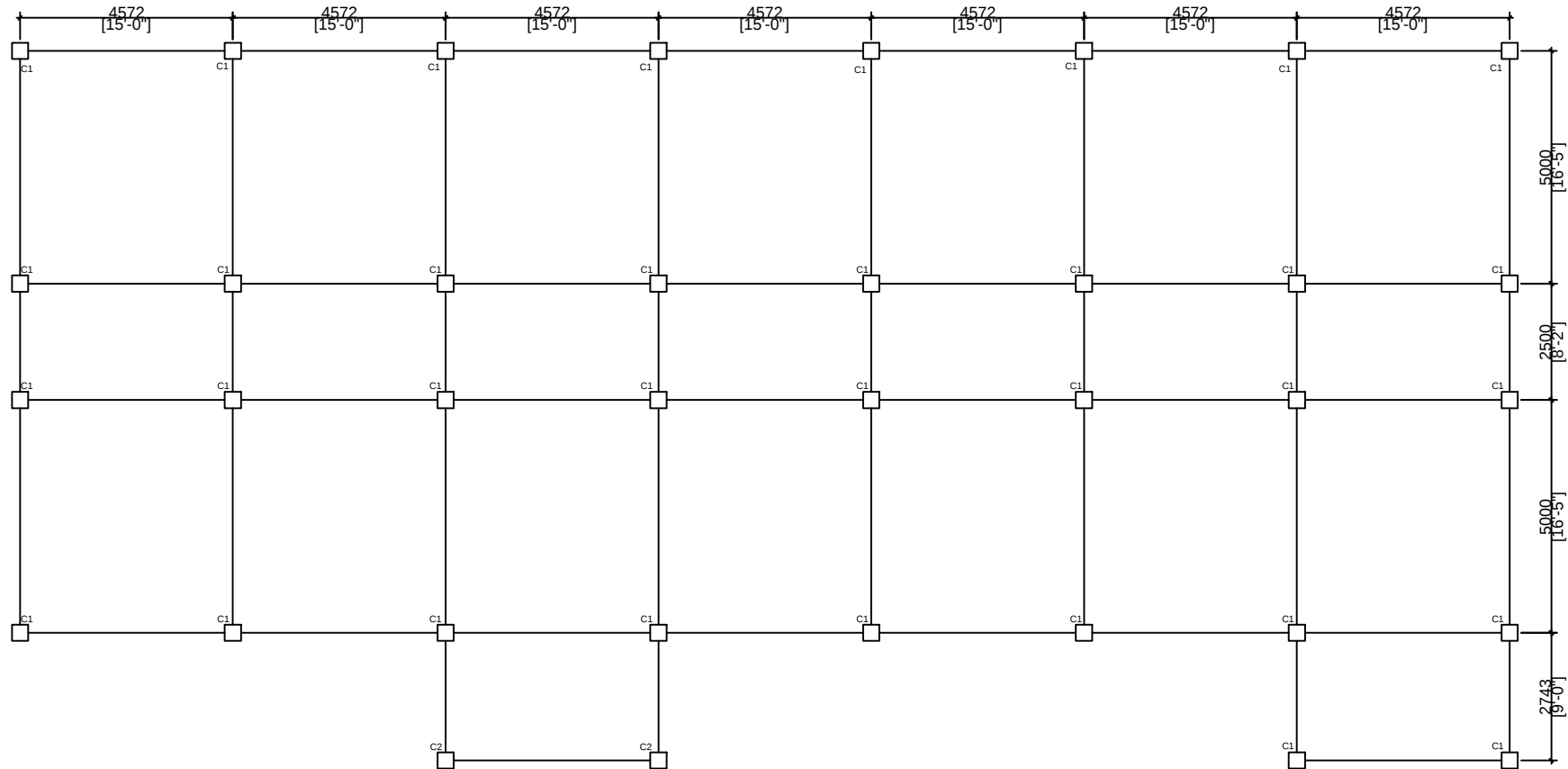
CONSTRUCTION OF DIET BUILDING AT HNAHTHIAL

Scale :
Not to Scale

Prepared by:

All dimensions
in mm

COLUMNS LAYOUT



NOTES:

1. Main Reinforcement and Lateral ties shall be of Tor Steel Fe415 Grade.
2. Lap length of steel in compression members shall be at least 480 mm and lapping to be provided at a distance $H_c/4$ beyond beam-column joint with ties 8mm @ 150 mm c/c.
3. Clear Cover shall be maintained as specified.
4. Provide 135 degree hook, hook length = 80mm at each hook.
5. Grade of Concrete = M20.

SHEET NO: 4

CONSTRUCTION OF DIET BUILDING AT HNAHTHIAL

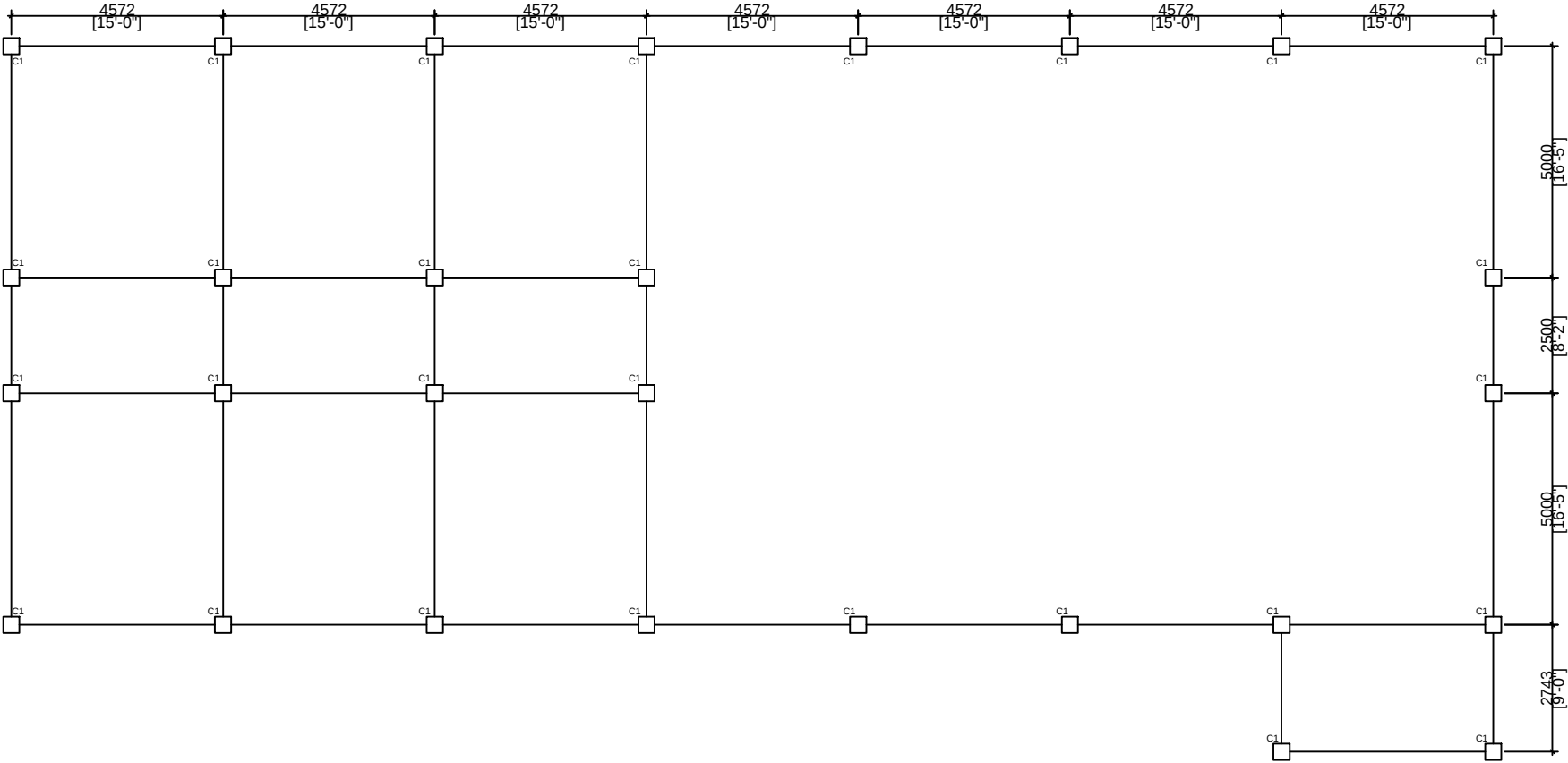
Certified that the requirements of Regulation 30 of the Aizawl Municipal Council Building regulations, 2012, have been complied with in the preparation of this structural drawing.

Scale :
Not to Scale

All dimensions
in mm

Prepared by:

COLUMNS LAYOUT



AT SECOND FLOOR

NOTES :
1. Main Reinforcement and Lateral ties shall be of Tor Steel Fe415 Grade.
2. Lap length of steel in compression members shall be at least 480 mm and lapping to be provided at a distance $H_c/4$ beyond beam-column joint with ties 8mm @ 150 mm c/c.
3. Clear Cover shall be maintained as specified.
4. Provide 135 degree hook, hook length = 80mm at each hook.
5. Grade of Concrete = M20.

SHEET NO: 5

CONSTRUCTION OF DIET BUILDING AT HNAHTHIAL	
Certified that the requirements of Regulation 30 of the Aizawl Municipal Council Building regulations, 2012, have been complied with in the preparation of this structural drawing.	
Scale : Not to Scale	Prepared by:
All dimensions in mm	

COLUMN DETAILS

CONSTRUCTION OF DIET BUILDING AT HNAHTHIAL

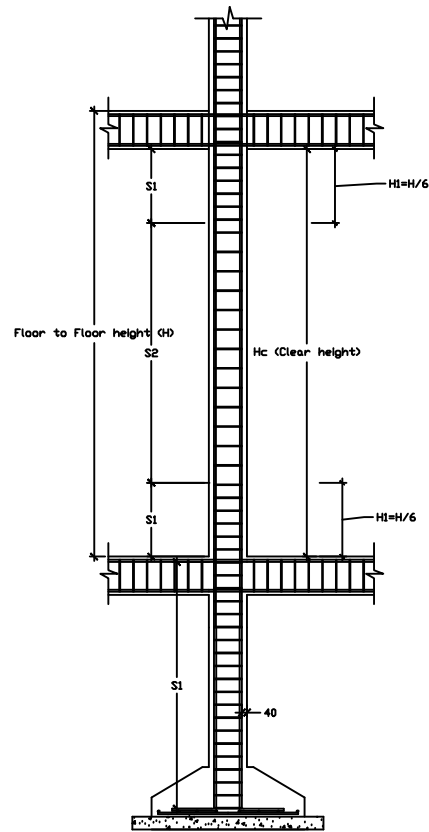
STRUCTURAL DETAILS
FOR ALL FLOOR
COLUMNS

DRAWING
NO:
6

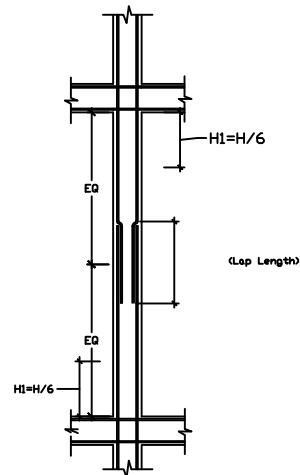
DESIGNED BY:

SCALE :
NTS

ALL DIMENSIONS ARE IN MM



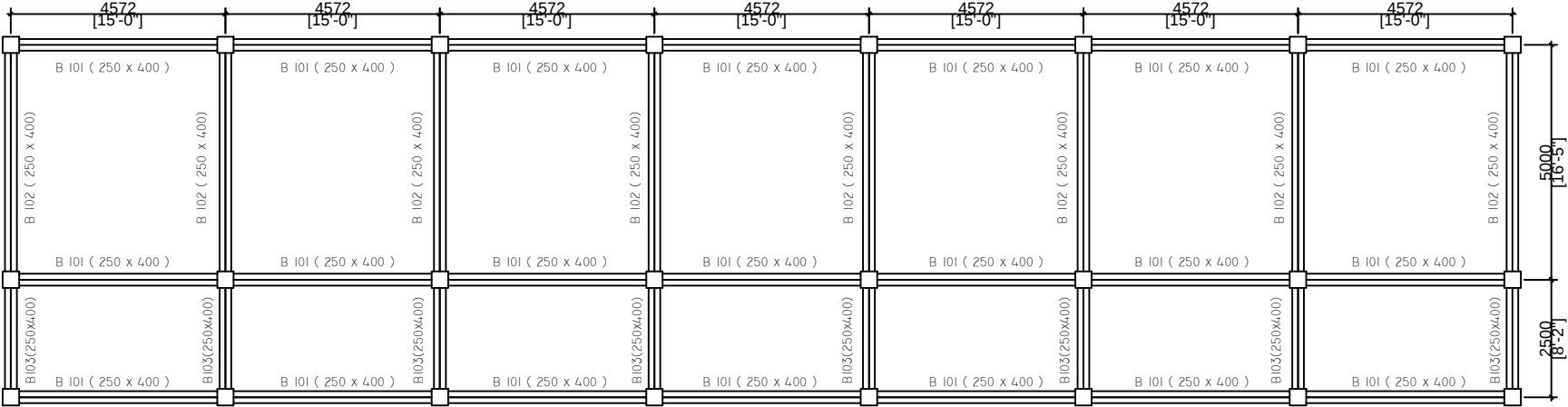
Typical Cross-Section of Column



Typical Lap Joint in Column

COLUMN MARKED	DETAIL OF COLUMN SECTIONS			Lateral Ties			
	AT GROUND FLOOR	AT SECOND FLOOR	AT MUMTY	S1 mm	S2 mm	H1 mm	Dia. mm
C1				100	150	500	8
C2				100	150	500	8

DETAILS OF BEAM



BASEMENT

SHEET NO: 7

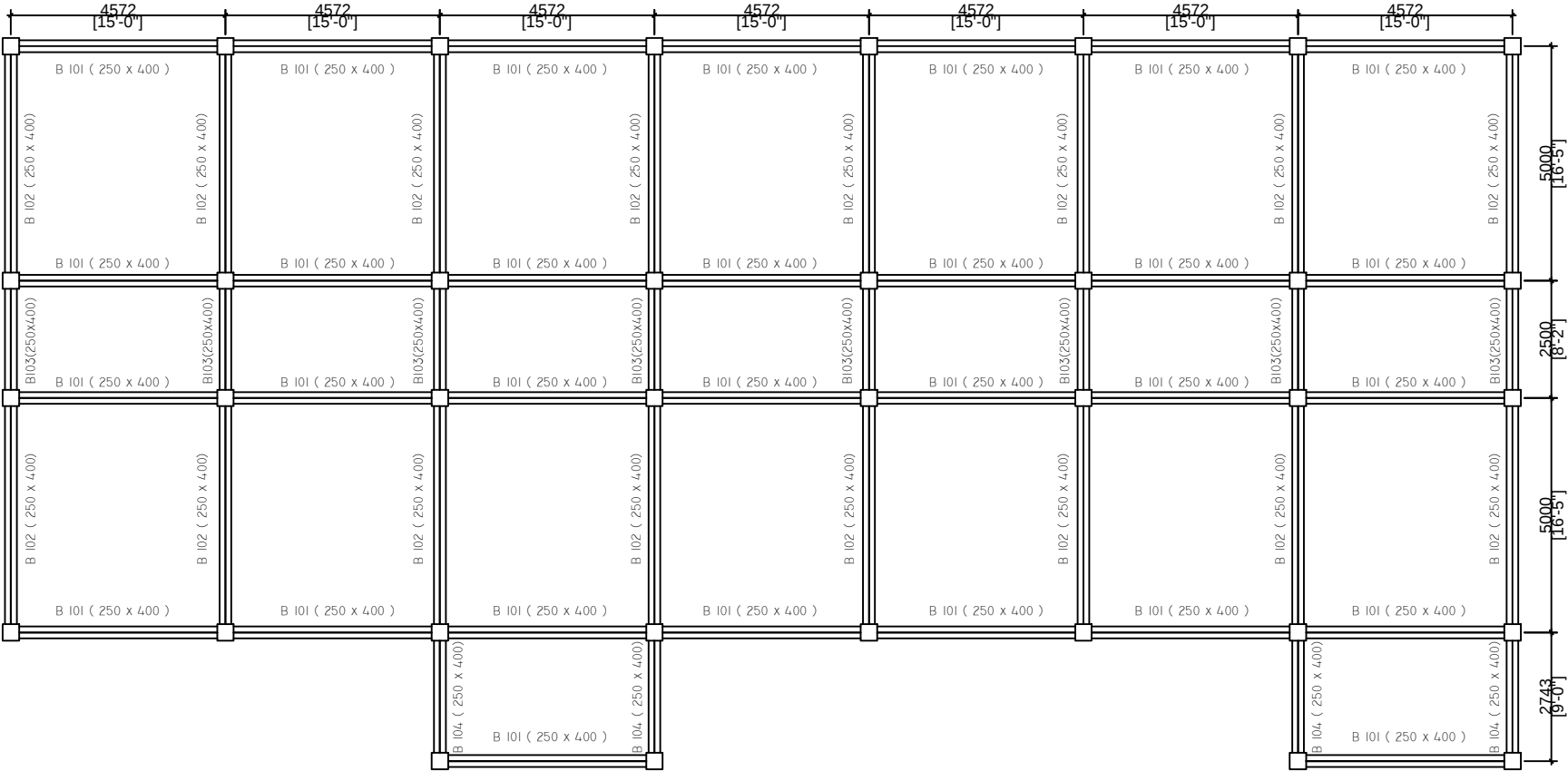
CONSTRUCTION OF DIET BUILDING AT HNAHTHAL

Scale :
Not to Scale

Prepared by:

All dimensions
in mm

DETAILS OF BEAM



SHEET NO: 8

CONSTRUCTION OF DIET BUILDING AT HNAHTHAL

Scale :
Not to Scale

Prepared by:

All dimensions
in mm

DETAILS OF BEAM



AT SECOND FLOOR

SHEET NO: 9

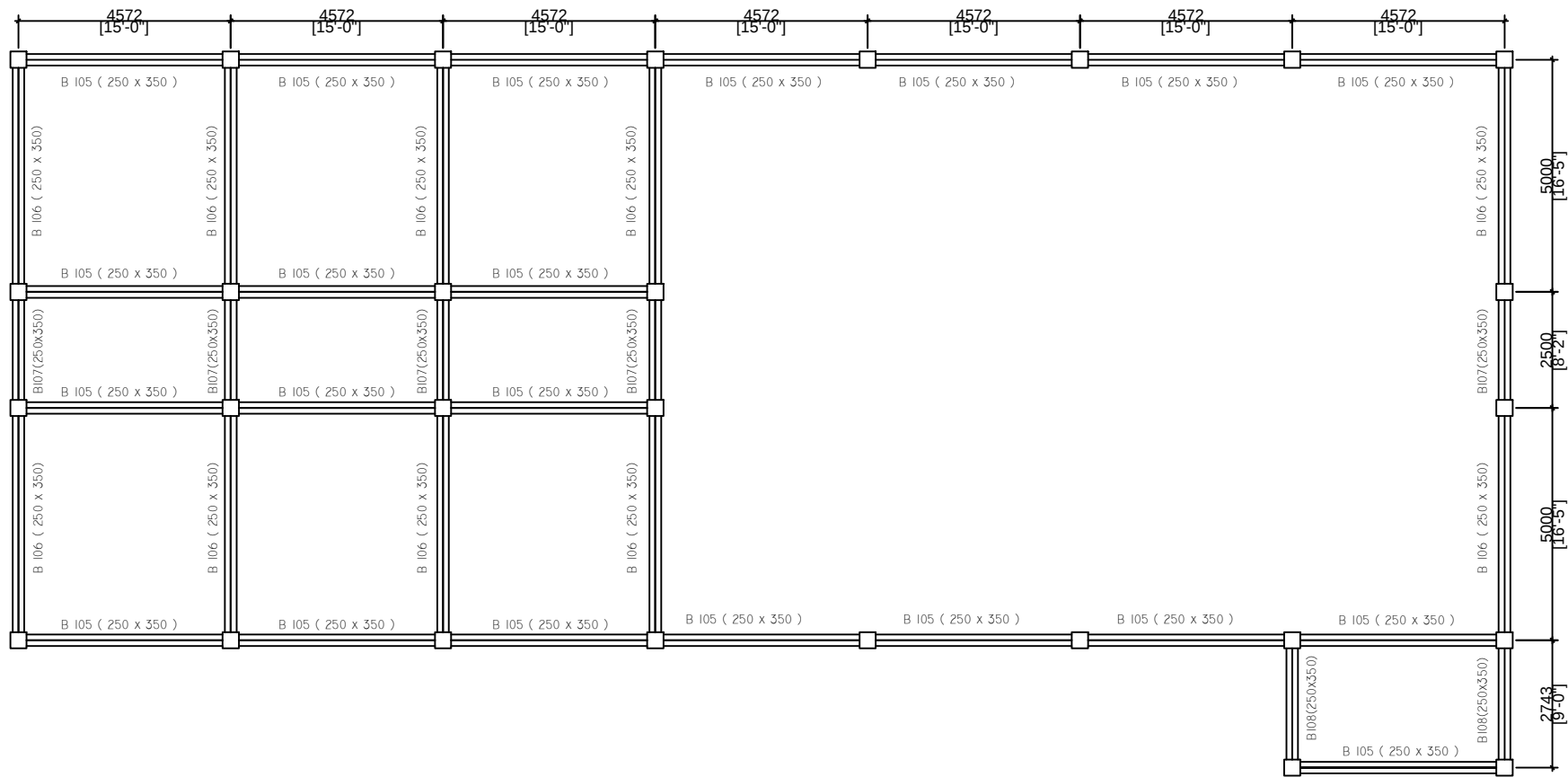
CONSTRUCTION OF DIET BUILDING AT HNAHTHIAL

Scale :
Not to Scale

Prepared by:

All dimensions
in mm

DETAILS OF BEAM



AT ROOF

SHEET NO: 10

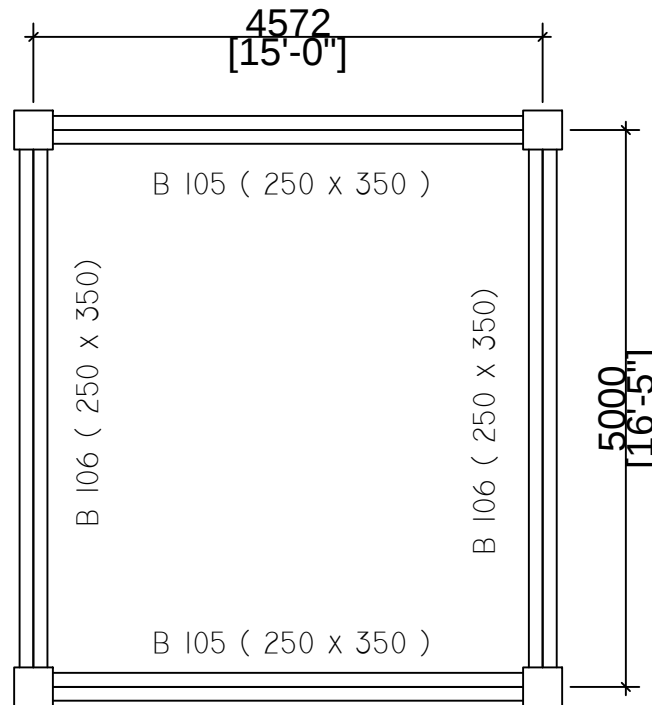
CONSTRUCTION OF DIET BUILDING AT HNAHTHIAL

Scale :
Not to Scale

Prepared by:

All dimensions
in mm

DETAILS OF BEAM



AT MUMTY

SHEET NO: 11

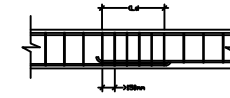
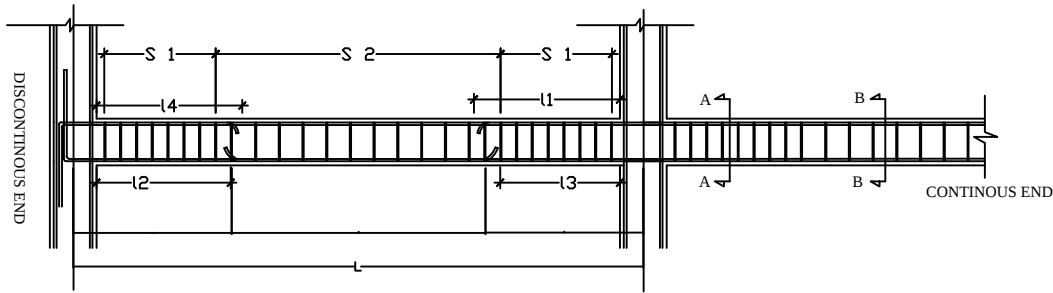
CONSTRUCTION OF DIET BUILDING AT
HNAHTHIAL

Scale :
Not to Scale

All dimensions
in mm

DESIGNED BY:

TYPICAL LONG SECTION OF BEAM



LAP SPLICE IN BEAM

Ld = Development length in tension
Db = Bar diameter

Where,
S1 = Spacing of stirrups for a length of 2d
S2 = Spacing of stirrups in the mid-span
Ld = development length of bar in tension
L = Length of beam (C/C of column)

Typical long section of beam

Type of Beam :	Dimensions : (mm)	Section at B-B'	Section at C-C'	L (mm)	l 1 (mm)	l 2 (mm)	l 3 (mm)	l 4 (mm)	S 1	S 2
B 101	250 x 400			4572	1370	690	1150	900	8mm dia. Tor steel, 2 legged, @ 100 mm c/c	8mm dia. Tor steel, 2 legged, @ 150 mm c/c
B 102	250 x 400			5000	1500	750	1250	1000	8mm dia. Tor steel, 2 legged, @ 100 mm c/c	8mm dia. Tor steel, 2 legged, @ 150 mm c/c
B 103	250 x 400			2500	750	375	625	500	8mm dia. Tor steel, 2 legged, @ 100 mm c/c	8mm dia. Tor steel, 2 legged, @ 150 mm c/c
B 104	250 x 400			2743	800	400	690	550	8mm dia. Tor steel, 2 legged, @ 100 mm c/c	8mm dia. Tor steel, 2 legged, @ 150 mm c/c
B 105	250 x 350			4572	1370	690	1150	900	8mm dia. Tor steel, 2 legged, @ 100 mm c/c	8mm dia. Tor steel, 2 legged, @ 150 mm c/c
B 106	250 x 350			5000	1500	750	1250	1000	8mm dia. Tor steel, 2 legged, @ 100 mm c/c	8mm dia. Tor steel, 2 legged, @ 150 mm c/c
B 107	250 x 350			2500	750	375	625	500	8mm dia. Tor steel, 2 legged, @ 100 mm c/c	8mm dia. Tor steel, 2 legged, @ 150 mm c/c
B 108	250 x 350			2743	800	400	690	550	8mm dia. Tor steel, 2 legged, @ 100 mm c/c	8mm dia. Tor steel, 2 legged, @ 150 mm c/c

SPECIFICATIONS :

1. Clear Cover for Beam = 25mm.
2. Grade of Steel = Fe 415
3. Grade of Concrete = M 20
4. The first hoop shall be at a distance not exceeding 50mm from the joint face.
5. Minimum Curing Period = 28 days
6. Beam with higher reinforcement should be adopted at the point where two different types of beam meet.

SHEET NO: 12

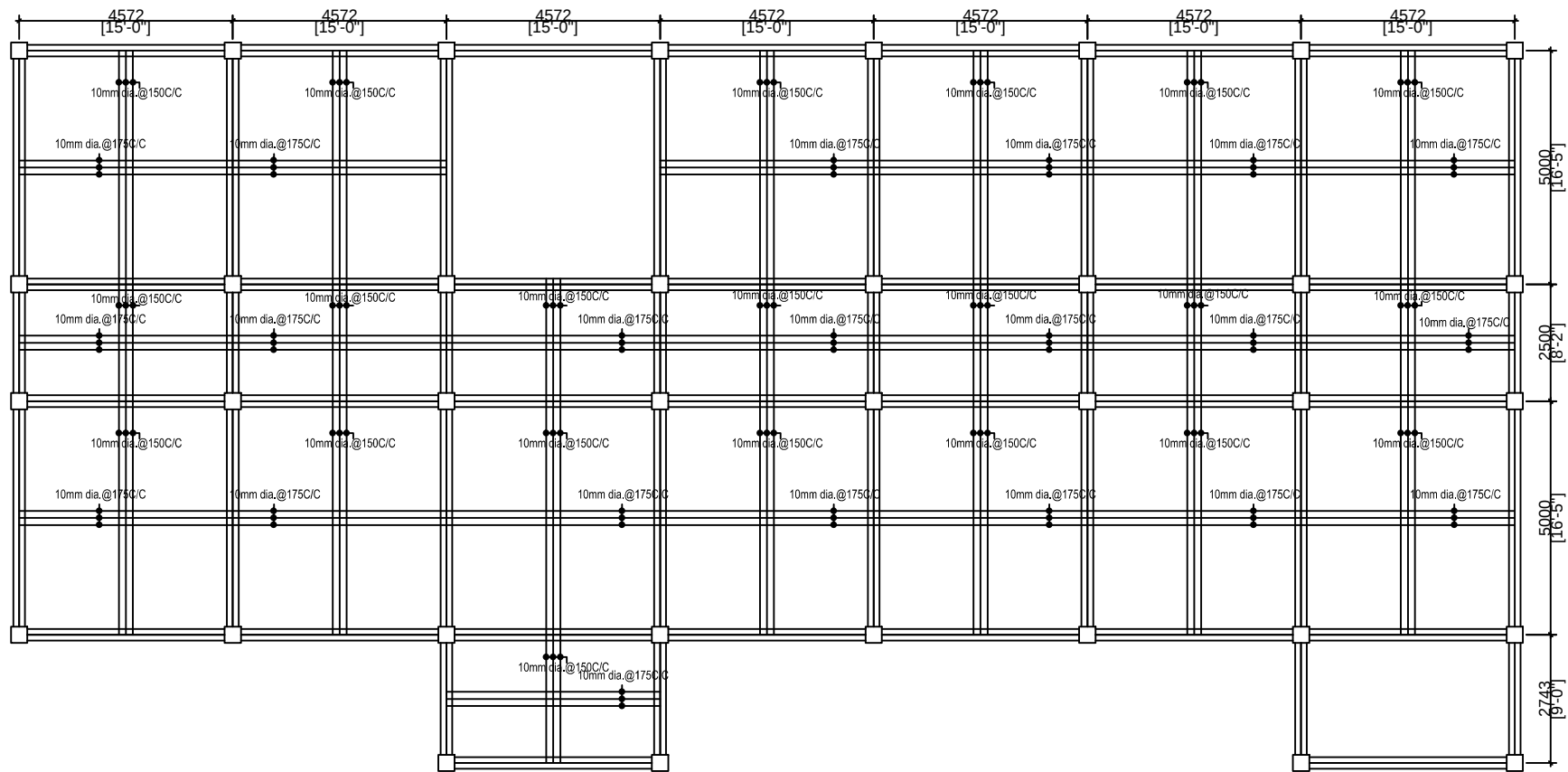
CONSTRUCTION OF DIET BUILDING AT HNAHTIAL

Certified that the requirements of Regulation 30 of the Aizawl Municipal Council Building regulations, 2012, have been complied with in the preparation of this structural drawing.

Scale :
Not to Scale

All dimensions
in mm

DETAILS OF SLAB



BOTTOM REINFORCEMENT

SHEET NO: 13

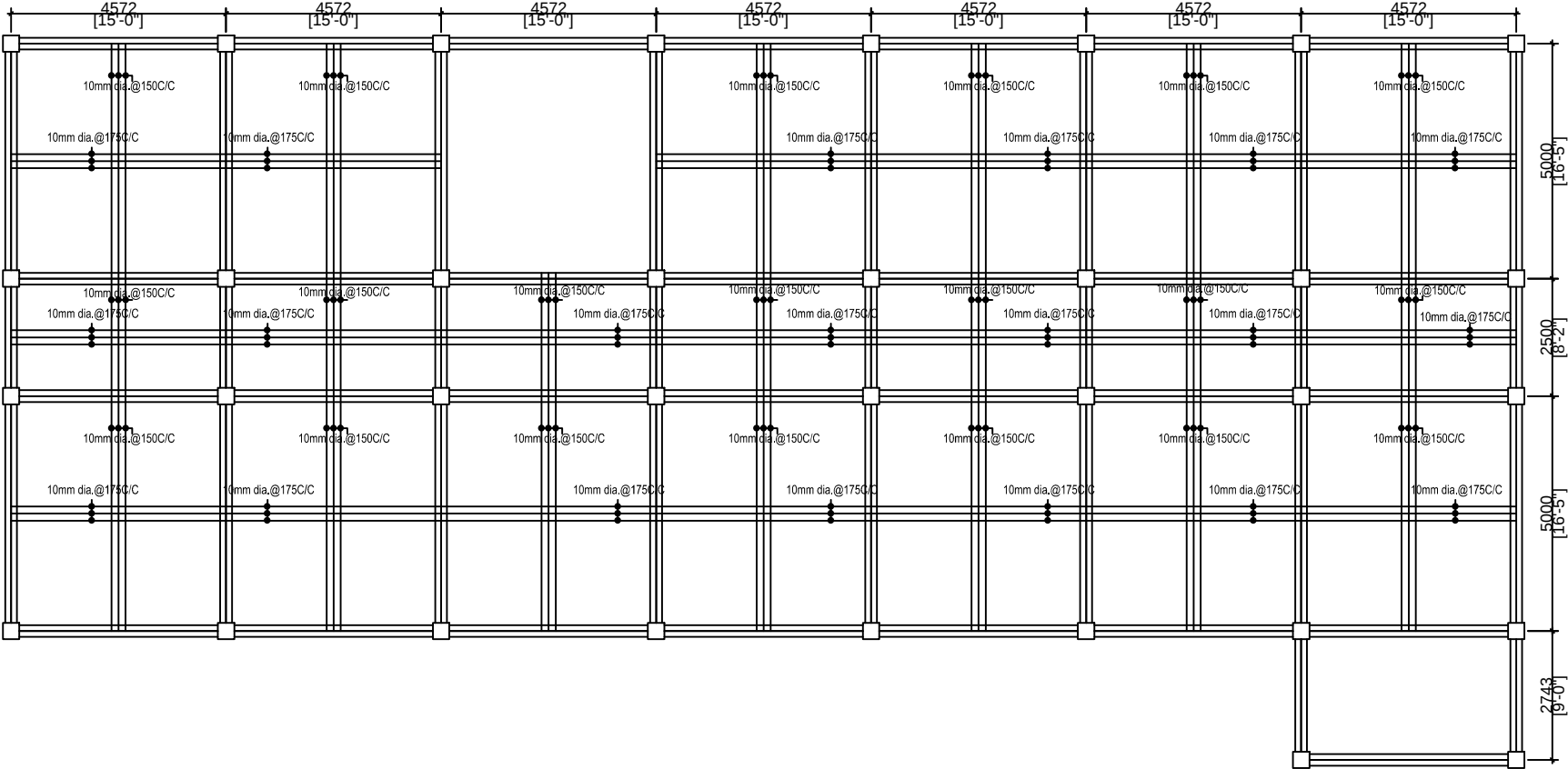
CONSTRUCTION OF DIET BUILDING AT HNAHTHAL

Scale :
Not to Scale

Prepared by:

All dimensions
in mm

DETAILS OF SLAB



BOTTOM REINFORCEMENT

AT SECOND FLOOR

SHEET NO: 14

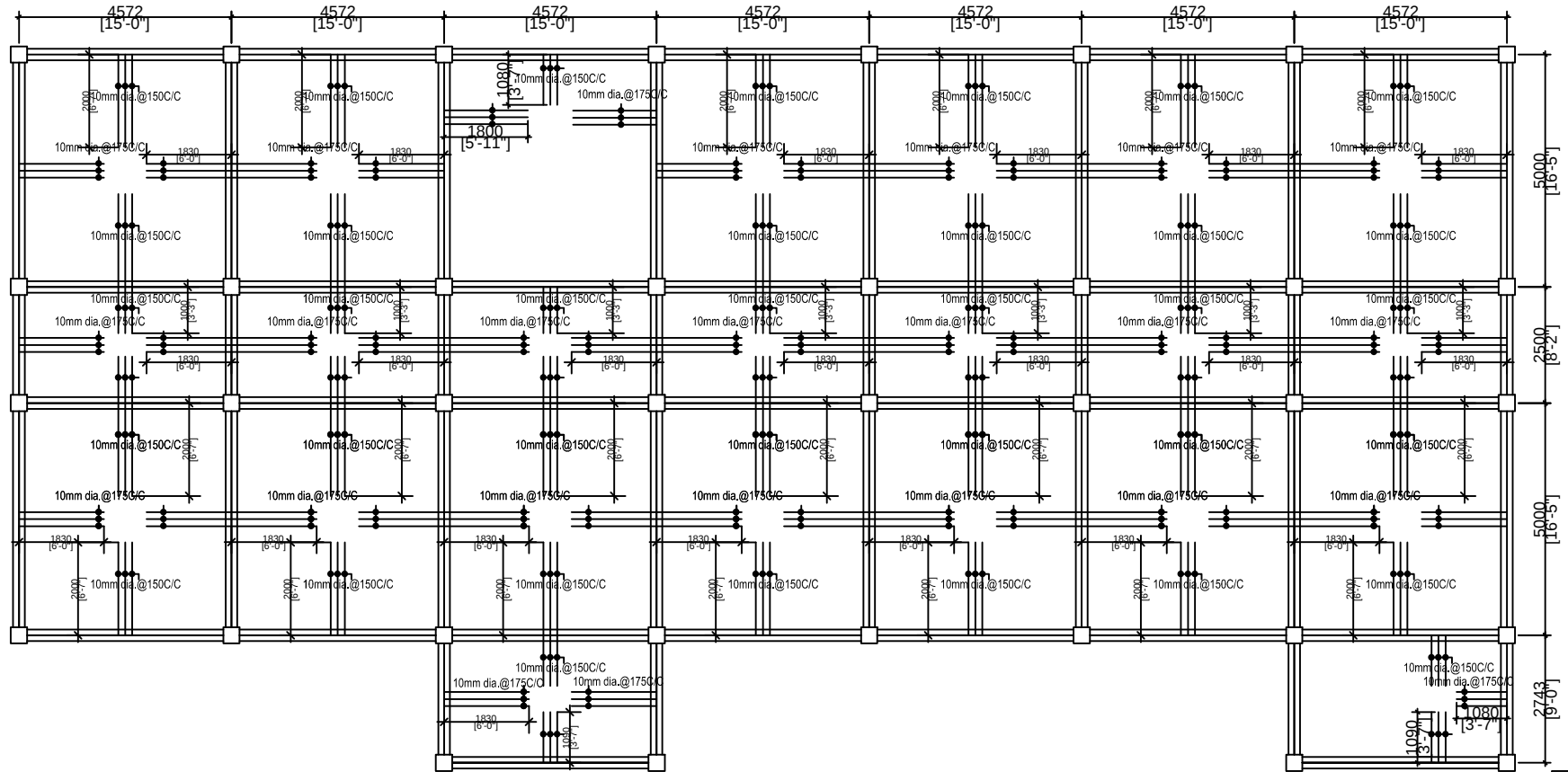
CONSTRUCTION OF DIET BUILDING AT HNAHTHAL

Scale :
Not to Scale

Prepared by:

All dimensions
in mm

DETAILS OF SLAB



TOP REINFORCEMENT

SHEET NO: 15

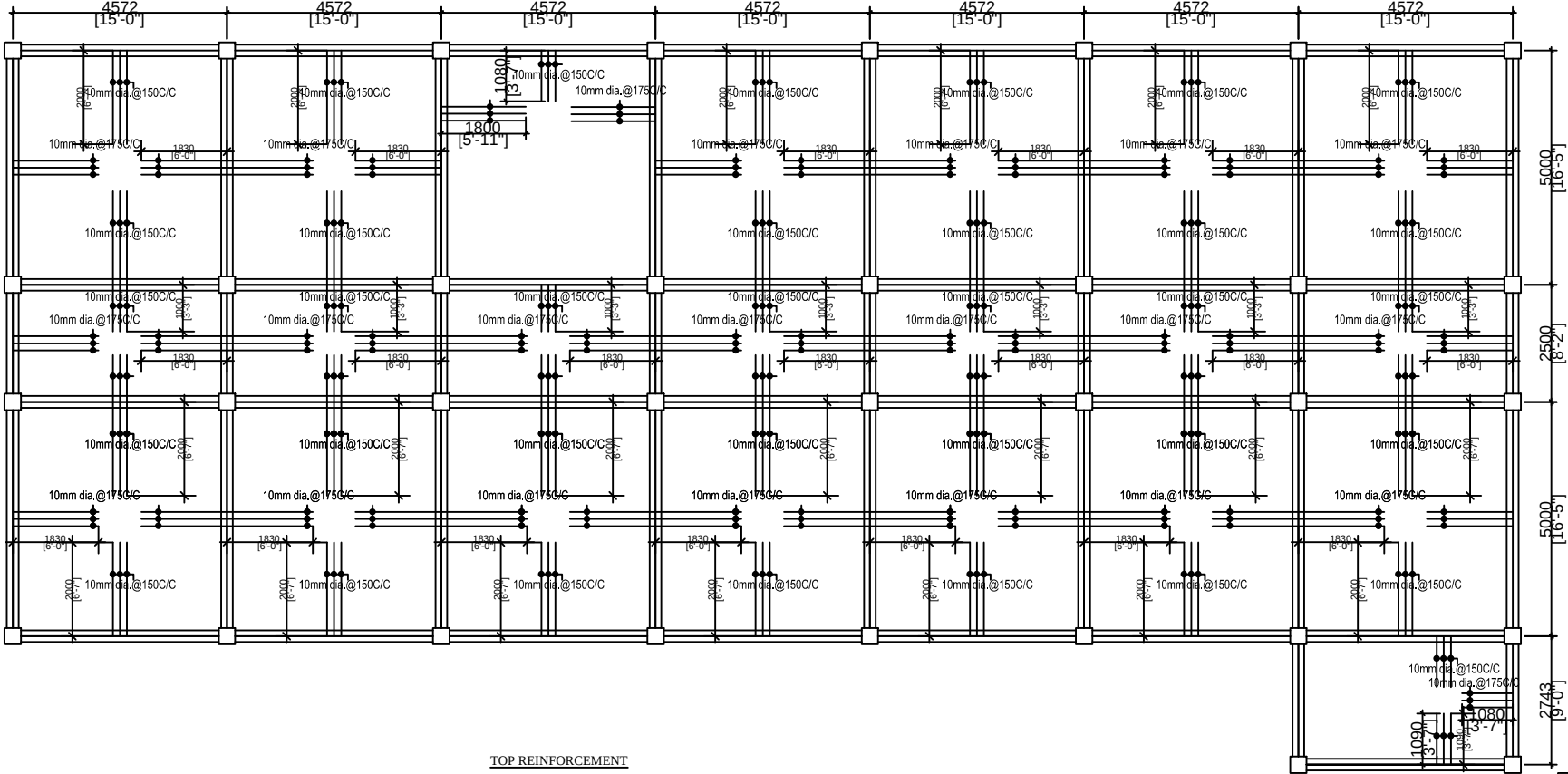
CONSTRUCTION OF DIET BUILDING AT HNAHTHAL

Scale :
Not to Scale

Prepared by:

All dimensions
in mm

DETAILS OF SLAB



TOP REINFORCEMENT

AT SECOND FLOOR

SHEET NO: 16

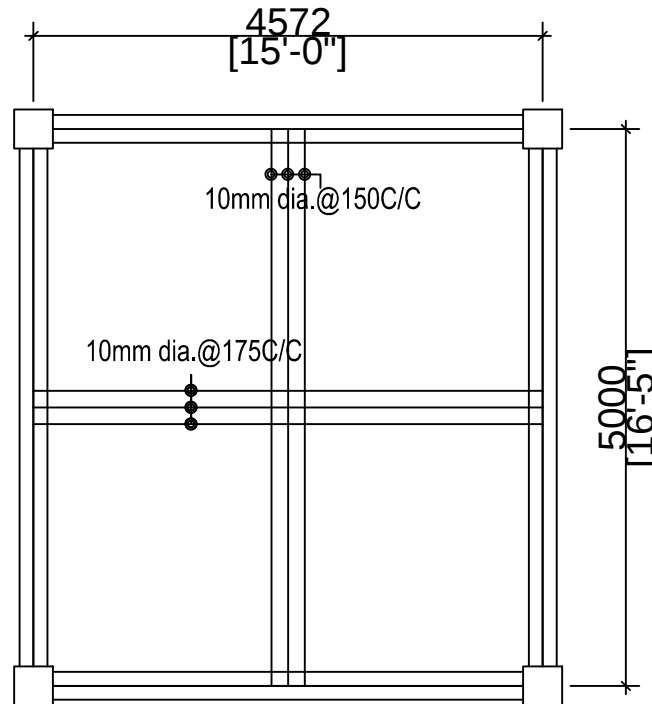
CONSTRUCTION OF DIET BUILDING AT HNAHTHIAL

Scale :
Not to Scale

Prepared by:

All dimensions
in mm

DETAILS OF SLAB



AT MUMTY

SHEET NO: 17

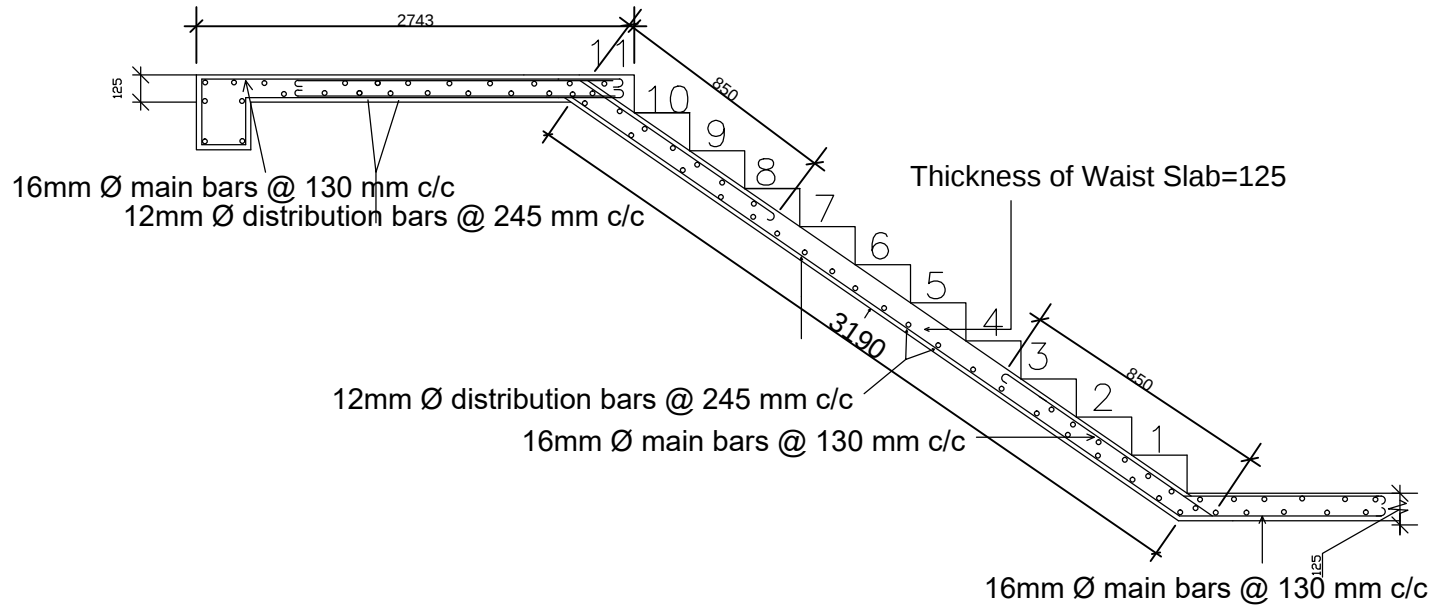
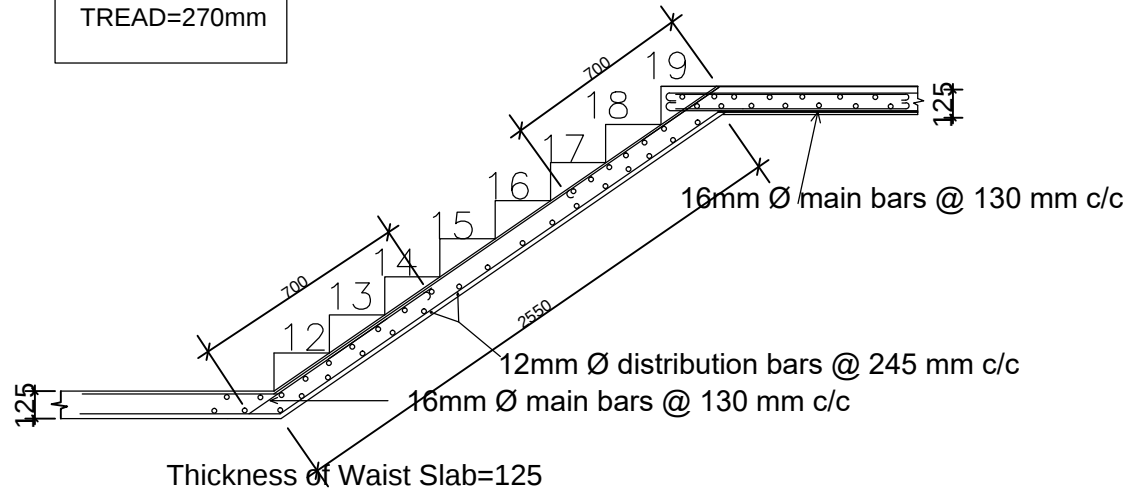
CONSTRUCTION OF DIET BUILDING AT
HNAHTHIAL

Scale :
Not to Scale

All dimensions
in mm

DESIGNED BY:

RISER=170mm
TREAD=270mm



1. Grade of Cement Concrete = M20.
2. Grade of Steel = Fe 415.
3. Clear Cover = 20mm.
4. Minimum Curing Period = 28 days.
5. Concrete and Steel must be tested and should satisfy the strength specified above.
6. At the point where two different types of Beam meet, Beam with higher reinforcement should be adopted.
7. R.C.C. Slab & Brick Walling
8. All dimension are in mm, but not to scale.

CONSTRUCTION OF DIET BUILDING AT HNAHTHIAL

STRUCTURAL DETAILS FOR STAIRCASE

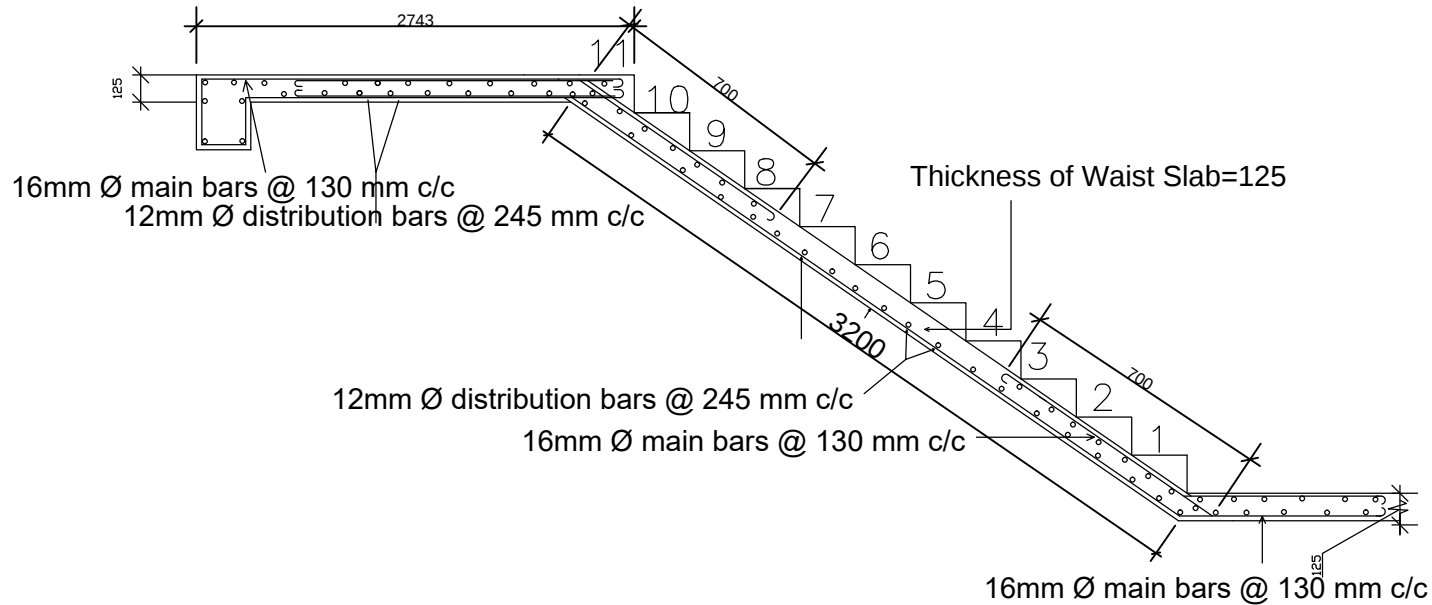
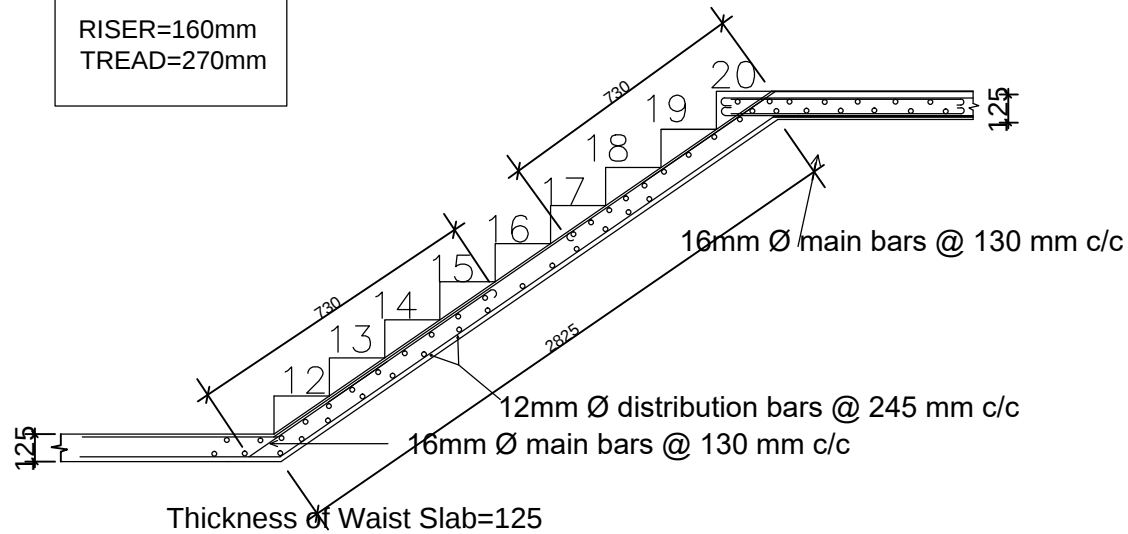
DESIGNED BY:

SCALE :

NTS

ALL DIMENSIONS ARE IN MM

RISER=160mm
TREAD=270mm



1. Grade of Cement Concrete = M20.
2. Grade of Steel = Fe 415.
3. Clear Cover = 20mm.
4. Minimum Curing Period = 28 days.
5. Concrete and Steel must be tested and should satisfy the strength specified above.
6. At the point where two different types of Beam meet, Beam with higher reinforcement should be adopted.
7. R.C.C. Slab & Brick Walling
8. All dimension are in mm, but not to scale.

CONSTRUCTION OF DIET BUILDING AT HNAHTHIAL

STRUCTURAL DETAILS FOR STAIRCASE

DESIGNED BY:

SCALE :

NTS

ALL DIMENSIONS ARE IN MM

ESTIMATE FOR THE CONSTRUCTION OF DIET BUILDING AT HNAHTHIAL							
Sl.no	Description of Items		Unit	Qty	Rate		Amount
					in figure	in words	
1/2.06	Earthwork in excavation over areas (exceeding 30cm in depth,1.5m in width as well as 10sqm on plan) including disposal of excavated earth, lead upto 50m and lift upto 1.5m, disposed earth to be levelled and neatly dressed.						
	(a)	Ordinary and Hard Soil					
			cum	814.800			
2/2.08	Earthwork in excavation in foundation trenches etc. not exceeding 2 meters depth including dressing of bottom and sides of trenches and subsequent filling and compaction in 15cm layers as in column foundations, fence posts, etc. and disposal of all surplus soil as directed within a lead of 30 metres.						
	(a)	Ordinary Soil					
			cum	278.750			
3/2.17	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.						
		2/3 of qty taken from 2/2.08	cum	185.833			
4/4.03	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work upto plinth level:						
	b)	1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40mm nominal size)					
			cum	43.850			
5/5.01	Providing and laying in position reinforced cement concrete excluding cost of centering and shuttering , finishing and reinforcement in -						
	All work upto plinth level :						
	(a)	1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size)					
			cum	53.300			

6/5.02	Reinforced cement concrete work in walls including attached pillasters, columns, pillars, posts, piers, abutments, return walls, retaining walls, struts, buttresses, string or lacing courses, fillets etc. upto floor five level excluding cost of centering shuttering etc complete.					
	a) 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size)					
		cum	62.01			
7/5.03	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases above plinth level up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement complete.					
	a) 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size)					
		cum	296.87			
8/5.18	Steel reinforcement for RCC work including straightening, cutting, bending, placing in position and binding all complete					
	b) Thermo-Mechanically Treated Bars					
		kg	73151.317			
9/5.10	Centering and shuttering including strutting, propping, etc. and removal of form works in -					
	c) Columns, pillars, piers, abutments, posts and struts.					
		sqm	578.000			
	Lintels, beams, plinth beams, girders, bressumers and cantilevers, etc.					
	d)					
		sqm	840.00			
	Suspended floors, roofs, landings, shelves and their support, balconies and chajja, etc.					
	e)					
		sqm	1419.45			
	f) Staircases (except spiral staircase) excluding landings.					
		sqm	114.28			

10/6.06		Half brick masonry with first class brick in superstructure above plinth level upto floor V level.					
	a)	in cement mortar 1:3 (1 cement : 3 coarse sand)					
			sqm	1356.834			
11/9.06		Providing 1st class local wood dressed in frames of chaukat for doors, windows, clerestory windows fixed in position.					
			cum	1.836			
12/9.10		Providing and fixing 1st class teak wood <i>panelled</i> shutters for doors etc. including M.S. butt hinges with necessary screws, etc. complete.					
	a)	40 mm thick.					
			sqm	64.86			
13/11.01		Providing and fixing anodised aluminium work for doors, windows, ventilators and partitions with extruded built up standard sections/ other sections of approved make conforming to IS : 733 and IS : 1285 fixing with dash fasteners of required dia and size, including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/ neoprene gaskets etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, aluminium snap beading for glazing /panelling, CP brass /stainless steel screws all complete including fixing of glasses but excluding cost of glasses.					
	(a)	Natural Colour					
	(i)	2 - track sliding windows/ventilators.					
			sqm	192.83			
14/11.02		Supplying of glass panes at site					
	a)	4mm thick plate sheet glass.					
			sqm	192.83			
15/20.08		12mm cement plaster 1 : 4 (1 cement : 4 fine sand).					
			sqm	5554.91			

16/10.09	Supplying and fixing M.S. decorative railing consisting of top and bottom rails of 40mmx40mm square or circular section at distance of 788mm apart, 30mmx30mm square or circular section decorative intermediate balusters welded to top and bottom rails at 280mm apart. The base of balusters at 560mm apart welded with base plate of 60mmx3mm thick and fixed with cement grouting firmly to concrete section including steel priming and steel painting complete etc.					
		sqm	73.51			
17/12.11	Providing and laying ceramic glazed floor tiles of size 300x300mm or more (thickness to be specified by the manufacturer) of 1st quality conforming to IS: 15622 of approved make in all colours, shades, except white, ivory, grey, fume red brown, laid on 20mm thick cement mortar 1 : 4 (1cement : 4 course sand) including pointing the joints with white cement and matching pigments etc. complete. as per designed colour.					
	b) Matt/Antiscratch					
		sqm	1093.69			
18/20.51	Applying priming coat with ready mixed pink or Grey primer of approved brand and manufacture on wood work (hard and soft wood) & Plywood.					
		sqm	174.39			
19/20.72	Painting with synthetic enamel paint of approved brand and manufacture in all shades on new work (<i>two or more coats</i>).					
	a) General quality					
		sqm	174.389			
20/20.75	Finishing walls with exterior emulsion of required shade on new work (<i>three or more coats</i>) to give an even shade.					
	a) Regular exterior emulsion like supercote, walmasta etc.					
		sqm	5554.91			
21/20.50	Applying one coat of water thinnable cement primer of approved brand and manufacture on wall surface :					

			<i>sqm</i>	5554.91			
22/7.01	Regular coursed rubble masonry with hard stone in foundation upto one storey above and below ground level including curing, etc. complete.						
	C)	in cement mortar 1 : 6 (1cement : 6 fine sand)					
			<i>cum</i>	80.27			
23/14.11	Providing and fixing bright finished M.S two lever mortise door lock with necessary screws, etc. complete.						
	a)	Union type	Nos	29.00			
24/14.07	Providing and fixing M.S. Tower bolts (socket bolts) bright finished with necessary screws etc. complete.						
	(a)	300 mm	Nos	29.00			
25/14.10		Providing and fixing M.S. handles with necessary screws, etc. complete					
	(a)	150mm					
			Nos	116.00			
26/18.01	Providing and fixing on terrace (<i>at all floor levels</i>) Polyethylene storage tank of approved brand and manufacture with cover and mosquito proof coupling and suitable locking arrangement and making nescessary connections for inlet, outlet and overflow pipes but without the cost for base support.						
	a)	Sintex or quivalent	<i>lit</i>	6000.00			
27/17.33	Providing and fixing on wall face SWRPVC soil, waste and vent pipes including jointing with rubber lubricant/cement solvent complete.						
	a)	110mm dia.					
			<i>m</i>	50.00			
28/17.34	Providing and fixing SWRPVC plain bend of required degree (87.50°) including jointing with rubber lubricant/cement solvent complete.						
	a)	110 mm dia.					
			<i>No</i>	30.00			
29/17.35	Providing and fixing SWRPVC plain bend of required degree (45°) including jointing with rubber lubricant/cement solvent complete.						
	a)	110 mm dia.					

			No	30.00			
30/17.37	Providing and fixing single equal SWRPVC plain junction of required degree (T-junction) .						
	a)	110x110x110 mm					
			No	20.00			
31/17.42	Providing and fixing ventilation cowl including jointing with rubber lubricant/cement solvent complete.						
	a)	110 mm dia.					
			No	9.00			
32/17.01	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100 mm uPVC P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required:						
	(a) Orrisa pan with integral type foot rests						
	(i)	White	no	8			
33/17.04	Providing and fixing vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings						
	(i)	White	no	1			
34/17.11	Providing and fixing vitreous china Urinal Flat Back Small 44 x 26.5 x 31.5cm size of Parryware/ Hindware/ Cera and equivalent make with flush valve/spray with C.I or R.S brackets standard size of G.I flush pipe and C.P brass spreaders with brass unions and G.I clamps complete including painting of						
	(i)	White	no	6			
35/17.14	Providing and fixing vitreous Division Plate 69 x 30 cm size for Urinals.						
	(i)	White	no	4			
36/18.25	Providing and fixing PVC pipes complete with fittings and clamps, including cutting and making good the walls etc. (internal work).						
	a)	20mm dia nominal bore					
			rm	150.00			

37/18.07	Providing and fixing brass bib cock of approved quality.					
	b)	20mm nominal bore	No.	22.000		
38/18.09	Providing and fixing G.I. Union in G.I. pipe including cutting and threading the pipe and making long screws etc. complete (New work) .					
	b)	20 mm nominal bore	No.	50.000		
39/17.16	Providing and fixing White vitreous china wash basin Standard of Parryware/ Hindware/ Cera and equivalent make with R.S. or C.I. brackets, 15mm C.P. brass pillar taps, C.P. brass chain with rubber plugs, 32mm C.P. brass waste of standard pattern, 32mm C.P. brass traps and union complete including painting of fittings and brackets, cutting and making good the walls wherever required.					
	a)	Vitreous China Wash basin size 630x450 mm with single 15 mm C.P. brass pillar taps				
	i)	white				
			No	13.000		
40/18.51	Providing and placing in position electric water pump of approved manufacture including connections to G.I pipes etc. complete with accessories.					
	(b)	750 watts	each	1.00		
41/10.18	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete.					
			sqm	85.68		
42/17.24	Providing and fixing mirror of superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shade with 6 mm thick hard board backing :					
			No	13.00		
43/10.04	Providing and fixing in position collapsible steel shutters with vertical channels 20x10x2mm and braced with flat iron diagonals 20x5mm size with top and bottom rails of T-iron 40x40x6mm with 40mm dia. steel pulleys complete with bolts, nuts, locking					

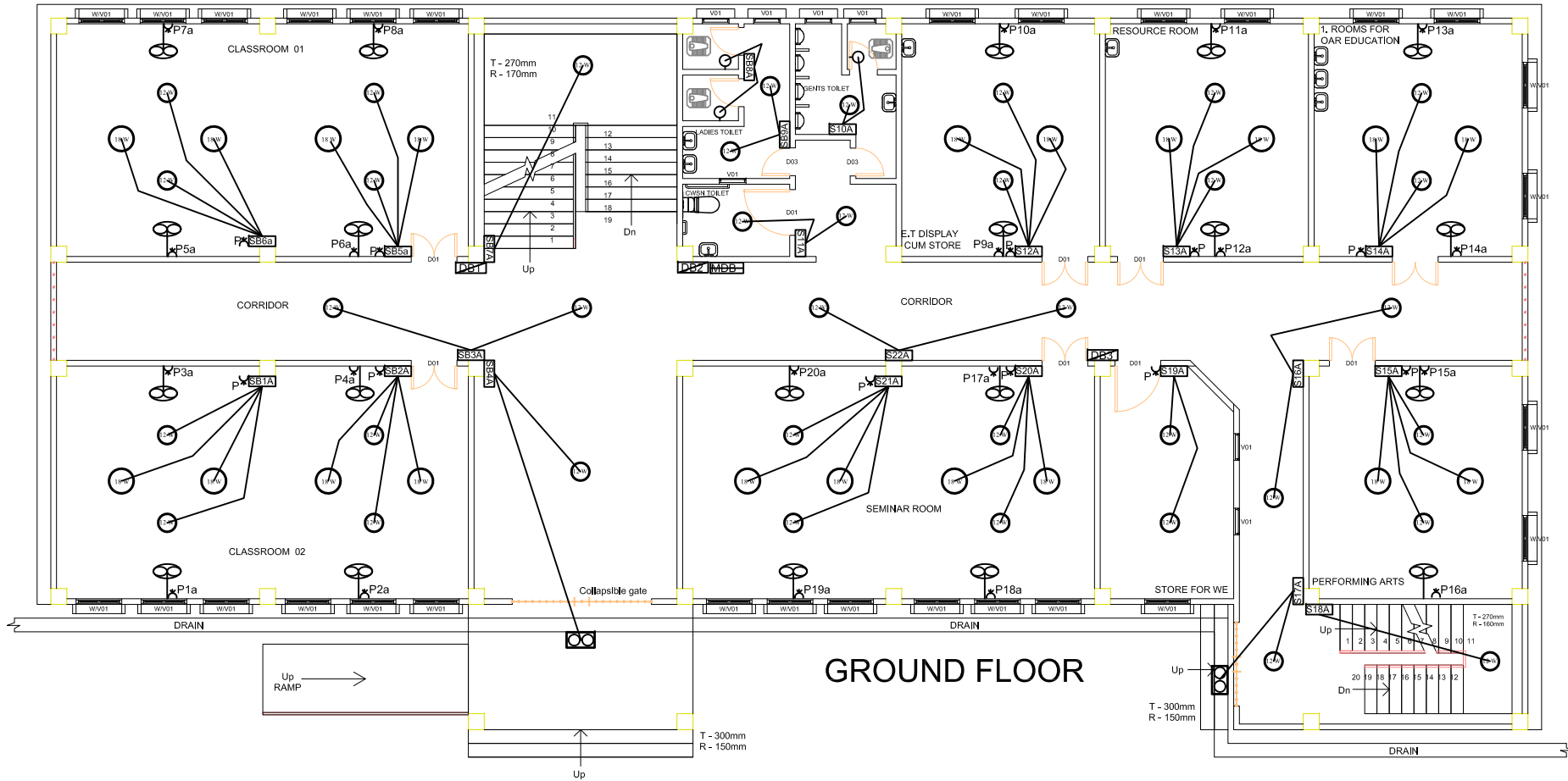
		Collapsible Steel Gate				
			sqm	20.16		
44/10.16		Steel work welded in built up sections/framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.				
	(b)	In a grating, frames, guard bar, ladders, railings, brackets, gates & similar works.				
		Steel ladder	Kg	30.00		
45/16.11		Providing Trapezoidal Polyester Coated Galvanised Steel Sheets Roofing of any colour of 1.06m width at all levels including fitting and fixing ridging with self drilling , self tapping screws, EPDM washers etc. complete excluding the cost of purlin, rafter and trusses.				
	ii)	For 0.50 mm thick :				
			sqm	342.83		
46/16.12		Providing and fixing of Polyester Coated Galvanised Steel Sheets of any colour ridges, gutters or valleys 50cm overall width 0.50mm thick with 150 mm overlapping fixed with Self Drilling & Tapping Screws with EPDM washer but excluding the cost of base frame.				
	ii)	For 0.50 mm thick :				
			m	82.93		
47/10.08		Steel work in built up tubular (round, square or rectangular hollow tubes etc.)trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete.				
			Kg	5268.57		
		SEPTIC TANK				

1/2.08	Earthwork in excavation in foundation trenches etc. not exceeding 2 meters depth including dressing of bottom and sides of trenches and subsequent filling and compaction in 15cm layers as in column foundations, fence posts, etc. and disposal of all surplus soil as directed within a lead of 30 metres.					
	(a) Ordinary Soil					
		m^3	19.760			
2/5.03	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases above plinth level up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement complete.					
	(a) 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size)					
		m^3	1.185			
3/5.10	Centering and shuttering including strutting, propping, etc. and removal of form works in -					
	(e) Suspended floors, roofs, landings,					
		m^2	4.671			
4/20.08	12mm cement plaster 1 : 4 (1 cement : 4 fine sand).					
		m^2	8.365			
5/5.18	Steel reinforcement for RCC work including straightening, cutting, bending, placing in position and binding all complete					
	(b) Thermo-Mechanically Treated Bars					
	Using 10mm Dia. Bar					
	@ 0.62/ Rm	kg	66.87			
6/6.09	7.5 cm thick brick masonry with first class brick in superstructure above plinth level upto floor two level including curing, etc. complete .					
	(b) in cement mortar 1:4 (1 cement : 4 fine sand)					
		m^2	6.28			
7/6.08	Honey-comb of half brick masonry with first class brick in foundation up to one storey above and below ground level including curing, etc. complete					

	b)	in cement mortar 1:4 (1 cement : 4 fine sand)				
			m^2	3.68		
		Total				
		Add 34.55 % C.I for Hnahthial District				
		Total inclusive of Cost Indices				
		Add 6% for GST				
		Add 1% for Labour Cess				
		Grand Total:				

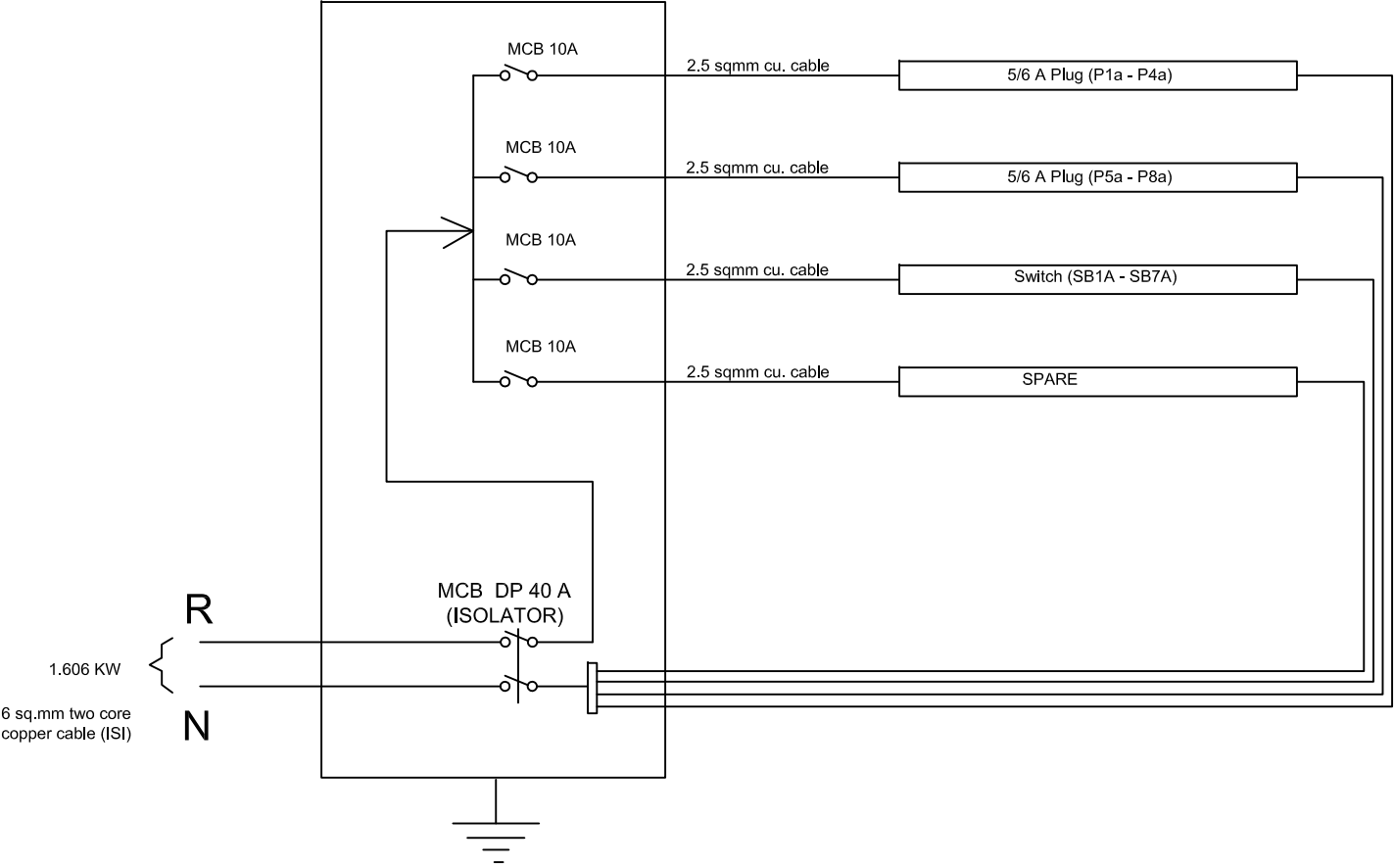
LEGENDS

18 W LED	
12 W LED	
Wall mounting light(15 W CFL)	
Flood light(2X65 W CFL)	
Bracket wall mounted fan 400mm sweeps	
Exhaust Fan 230mm sweeps	
AC 1.5 Ton	
Control Switch board(Modular)	
5amp S/S comb Plug	
16amp S/S comb Plug	
Circuit Distribution board	
Main Distribution Board	



GROUND FLOOR

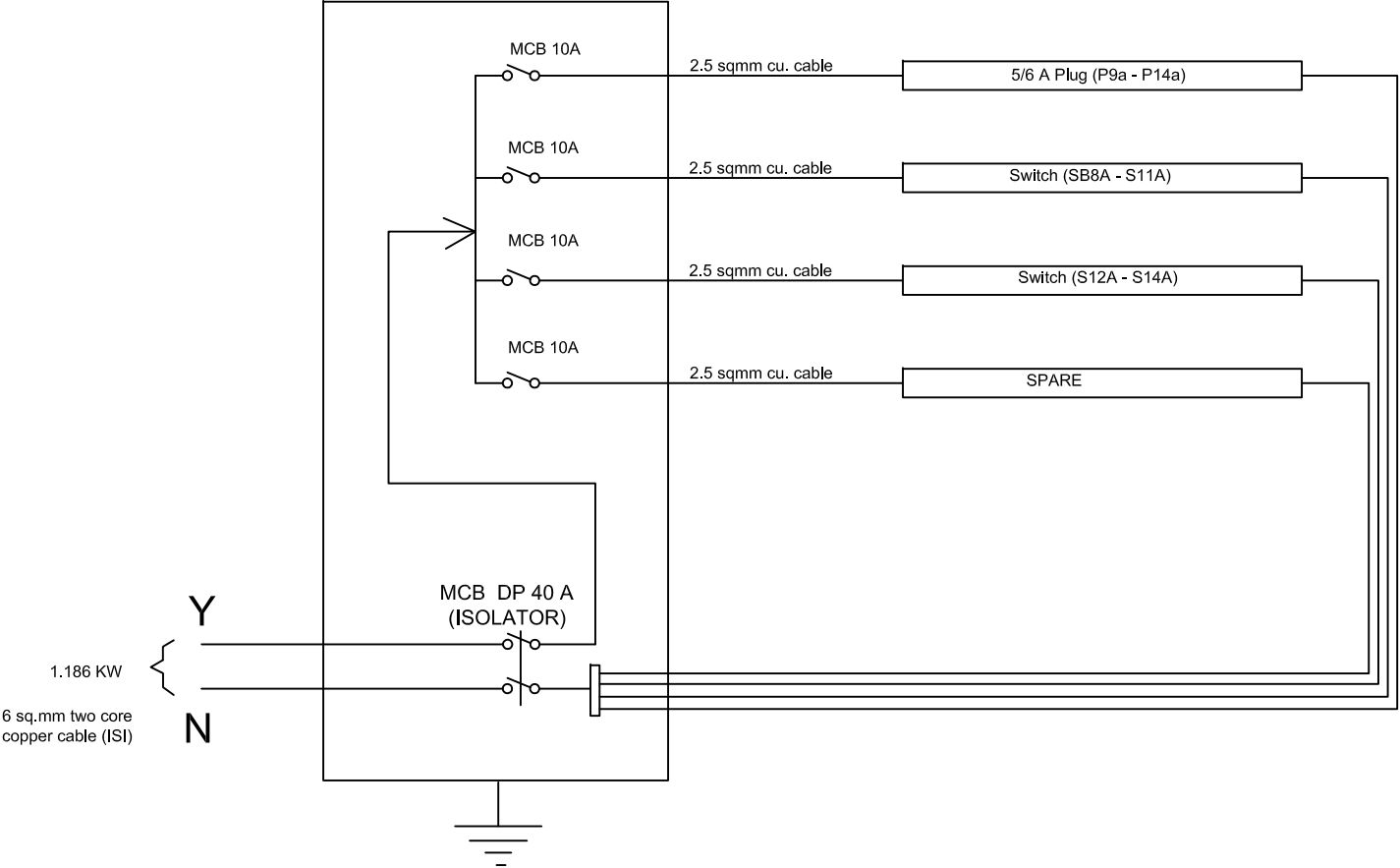
6-way MCB DB SP & N D/D



CIRCUIT DISTRIBUTION(1)

PROJECT	
DIET BULDING AT HNAHTHIAL DISTRICT	
NOTES	
STATE PROJECT OFFICE SAMAGRA SHIKSHA, MIZORAM	
DRAWING : SINGLE LINE DIAGRAM	
	
DATE : 20/09/2023	SHEET NO : 02
SCALE : NOT TO SCALE	
DRAWN BY	
COUNTERSIGNED BY	

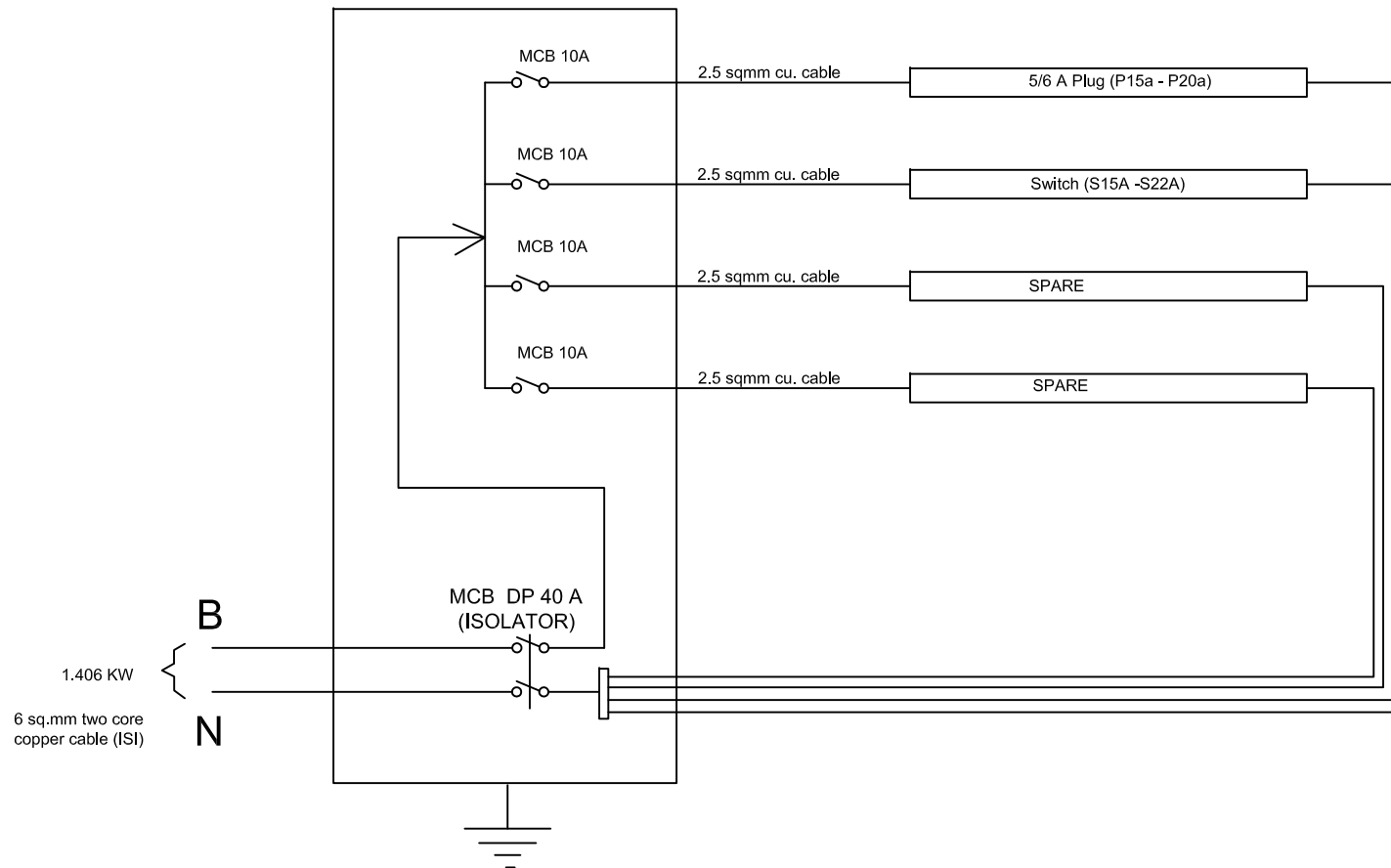
6-way MCB DB SP & N D/D



CIRCUIT DISTRIBUTION(2)

PROJECT	
DIET BUILDING AT HNAHTHIAL DISTRICT	
NOTES	
STATE PROJECT OFFICE SAMAGRA SHIKSHA, MIZORAM	
DRAWING : SINGLE LINE DIAGRAM	
	
DATE : 20/09/2023	SHEET NO : 03
SCALE : NOT TO SCALE	
DRAWN BY	
COUNTERSIGNED BY	

6-way MCB DB SP & N D/D



CIRCUIT DISTRIBUTION(3)

PROJECT	
DIET BUILDING AT HNAHTHIAL DISTRICT	
NOTES	
STATE PROJECT OFFICE SAMAGRA SHIKSHA, MIZORAM	
DRAWING : SINGLE LINE DIAGRAM	
	
DATE : 20/09/2023	SHEET NO : 04
SCALE : NOT TO SCALE	
DRAWN BY	
COUNTERSIGNED BY	

FIRST FLOOR

LEGENDS

- 



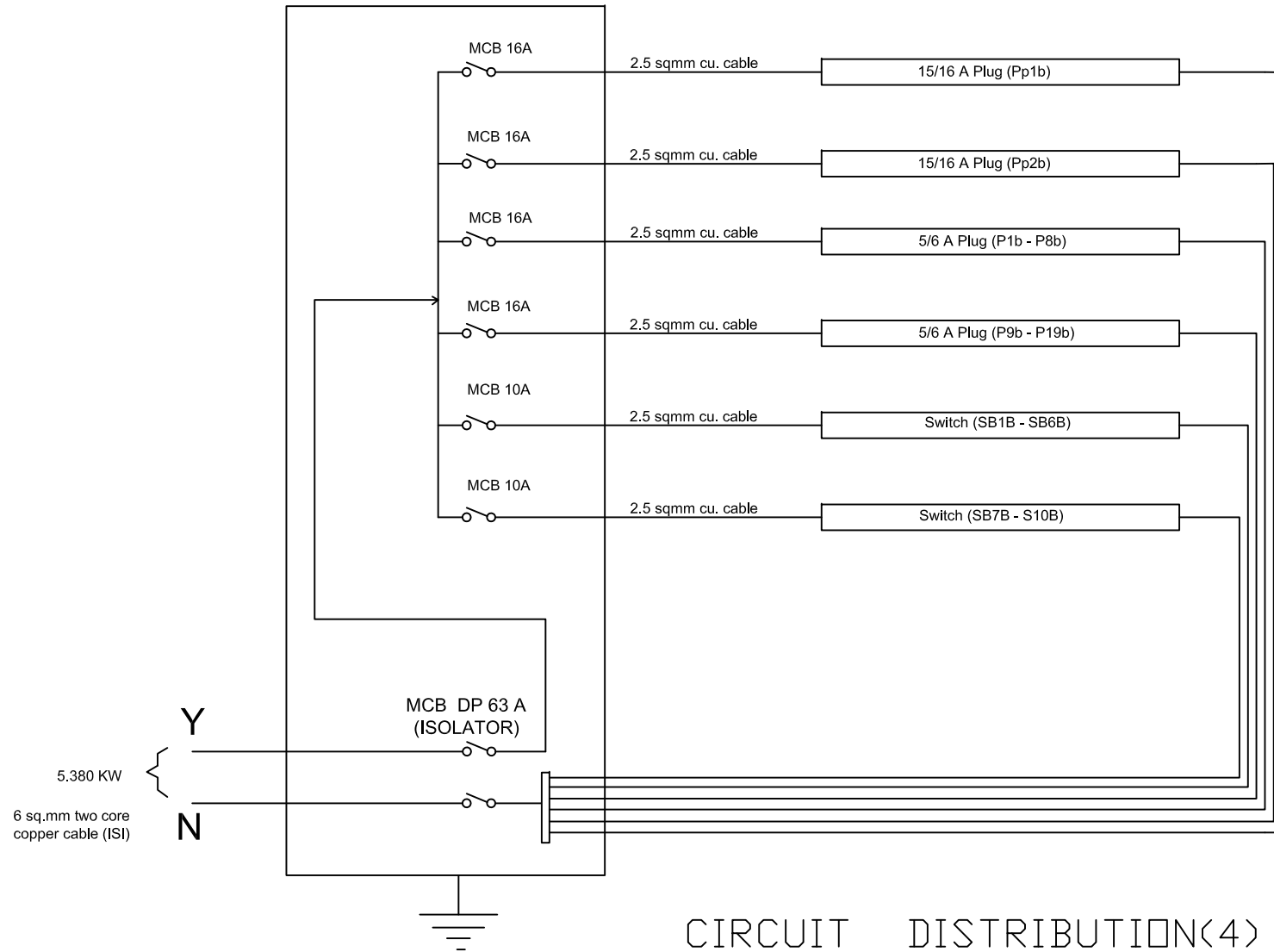






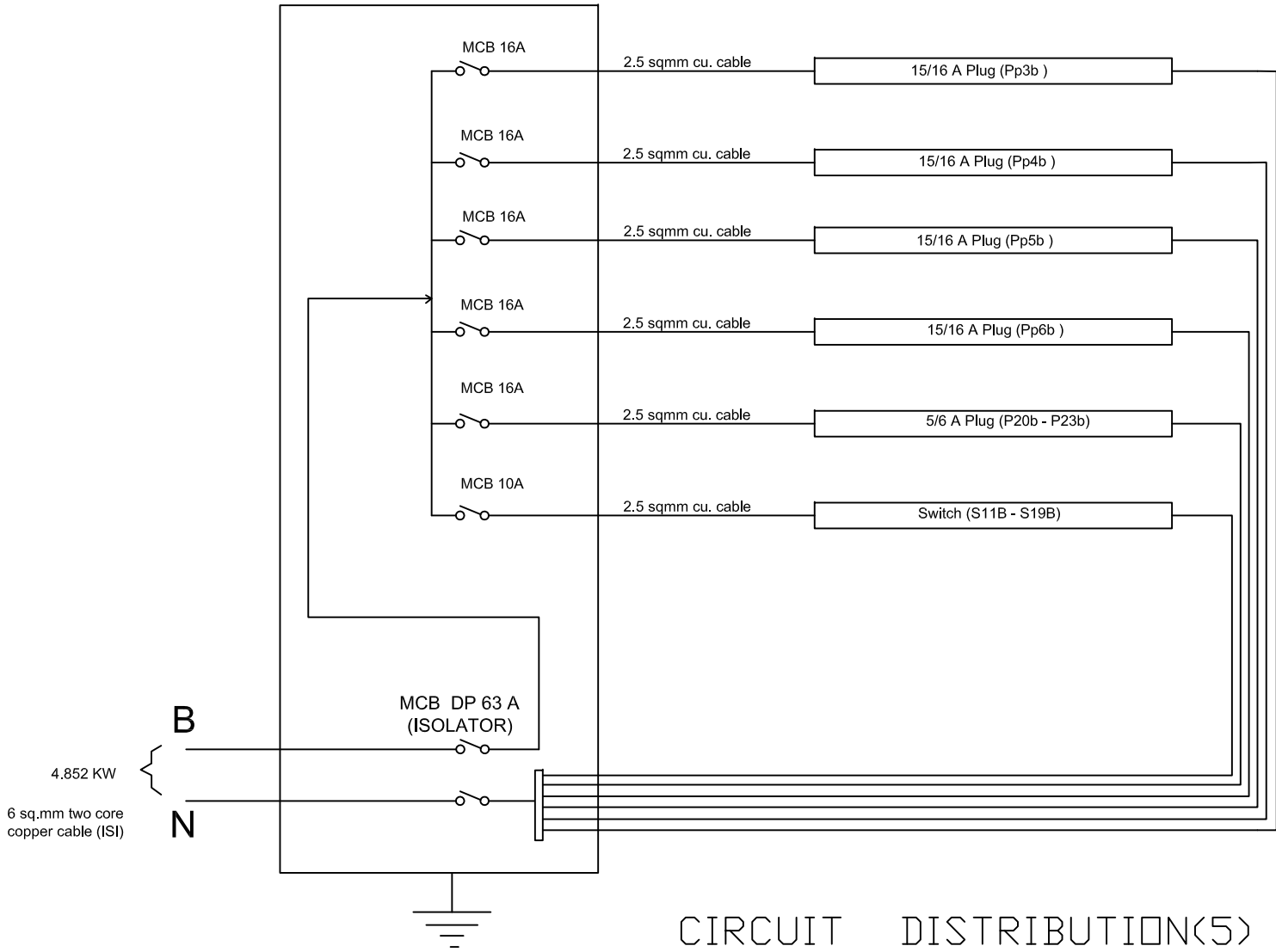



6-way MCB DB SP & N D/D



PROJECT	
DIET BULDING AT HNAHTIAL DISTRICT	
NOTES	
STATE PROJECT OFFICE SAMAGRA SHIKSHA, MIZORAM	
DRAWING : SINGLE LINE DIAGRAM	
	
DATE : 20/09/2023	SHEET NO : 06
SCALE : NOT TO SCALE	
DRAWN BY	
COUNTERSIGNED BY	

6-way MCB DB SP & N D/D



CIRCUIT DISTRIBUTION(5)

PROJECT

DIET BUILDING AT HNAHTHIAL DISTRICT

NOTES

STATE PROJECT OFFICE
SAMAGRA SHIKSHA, MIZORAM

DRAWING : SINGLE LINE DIAGRAM



DATE : 20/09/2023

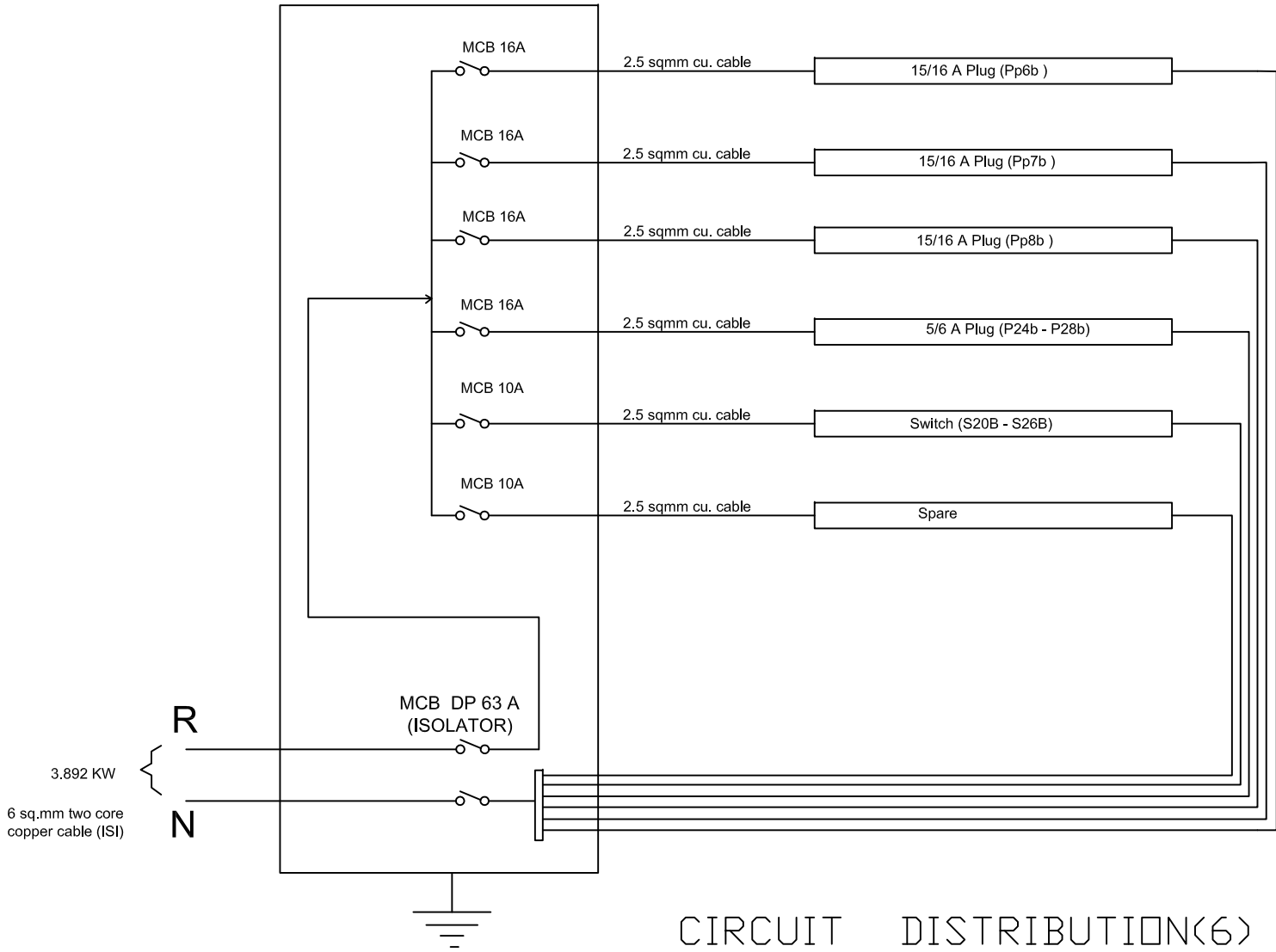
SCALE : NOT TO SCALE

SHEET NO : 07

DRAWN BY

COUNTERSIGNED BY

6-way MCB DB SP & N D/D



CIRCUIT DISTRIBUTION(6)

PROJECT

DIET BUILDING AT HNAHTHIAL DISTRICT

NOTES

STATE PROJECT OFFICE
SAMAGRA SHIKSHA, MIZORAM

DRAWING : SINGLE LINE DIAGRAM



DATE : 20/09/2023

SHEET NO : 08

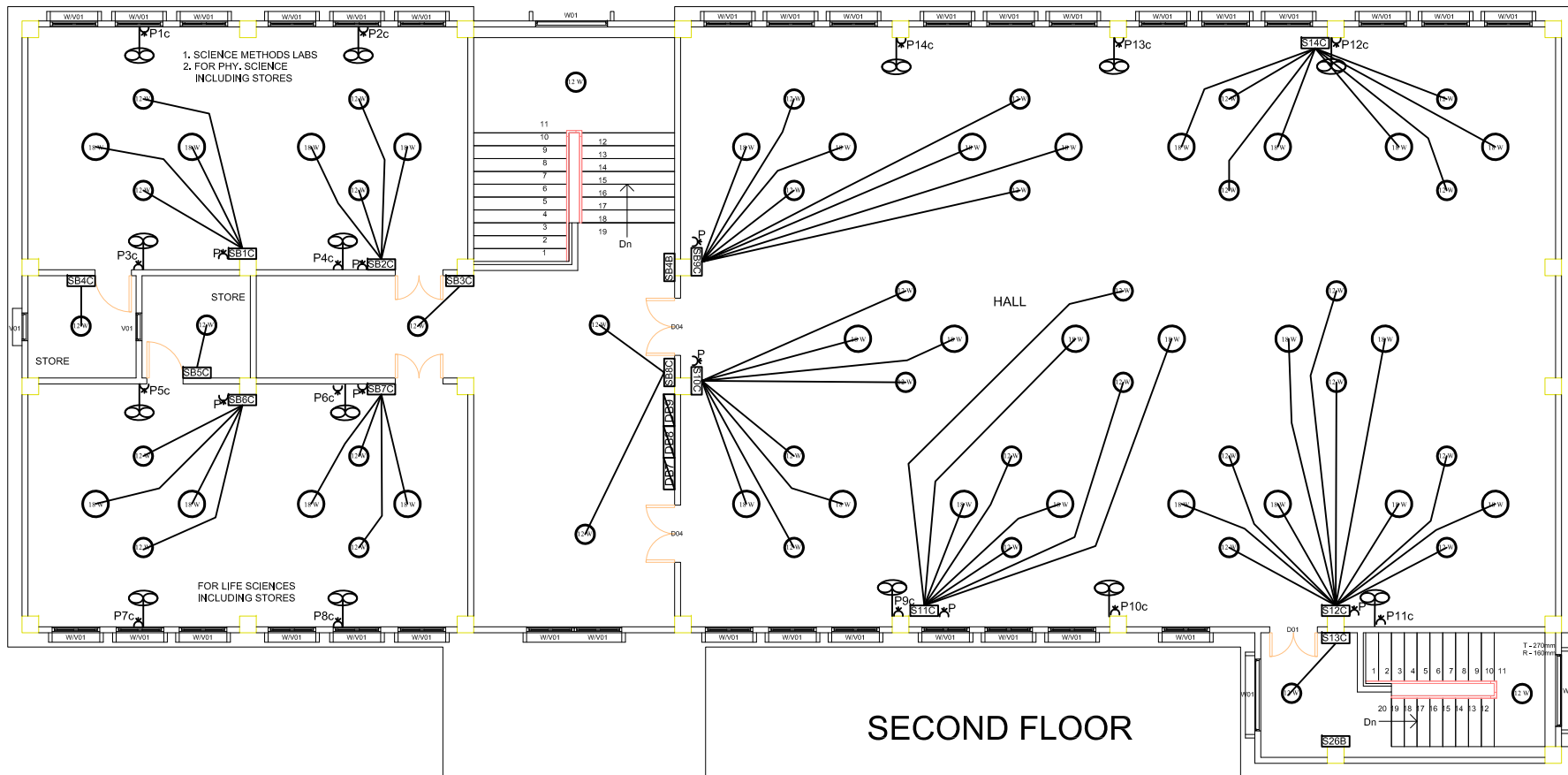
SCALE : NOT TO SCALE

DRAWN BY

COUNTERSIGNED BY

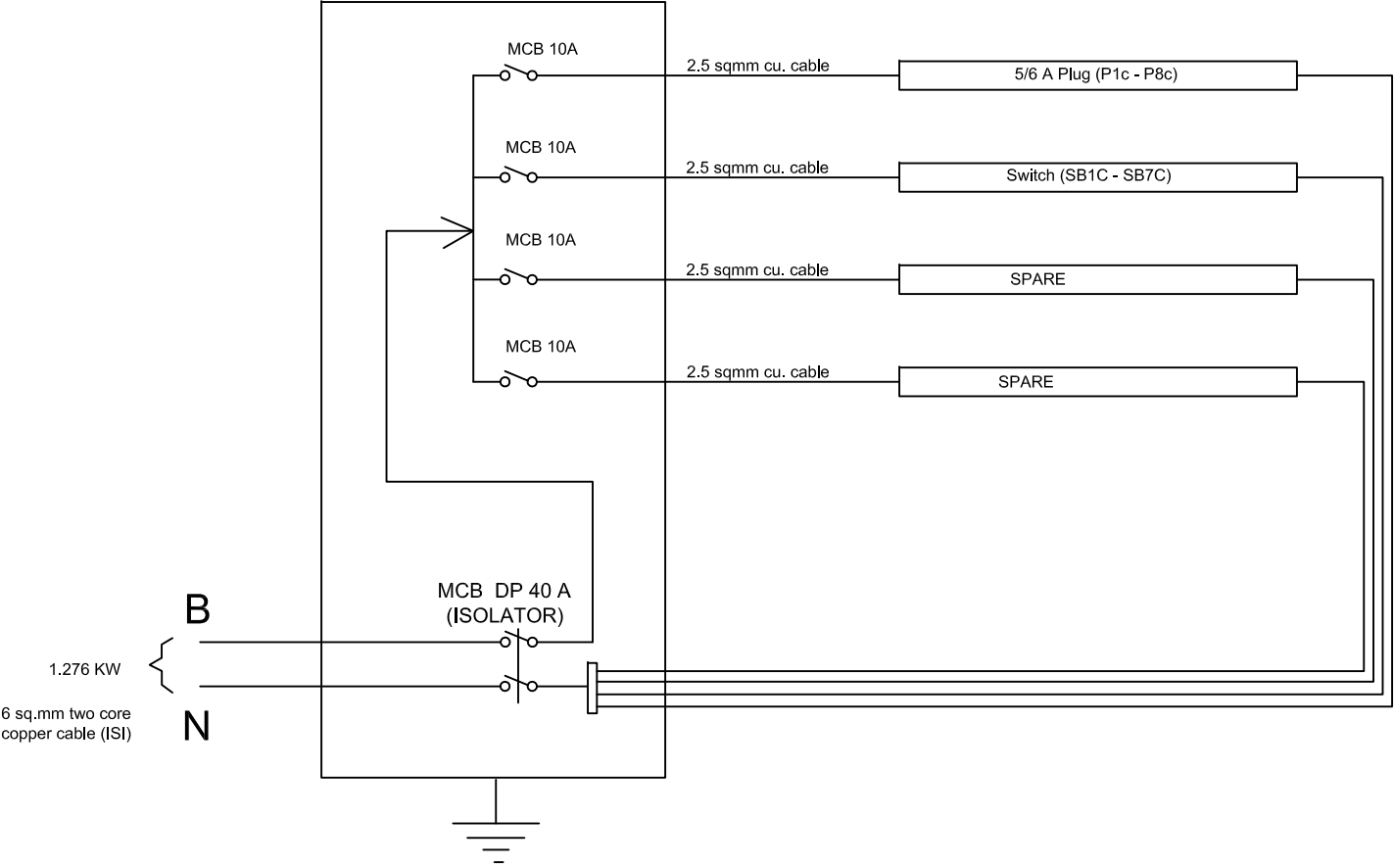
LEGENDS

18 W LED	
12 W LED	
Wall mounting light(15 W CFL)	
Flood light(2X65 W CFL)	
Bracket wall mounted fan 400mm sweeps	
Exhaust Fan 230mm sweeps	
AC 1.5 Ton	
Control Switch board(Modular)	
5amp S/S comb Plug	
16amp S/S comb Plug	
Circuit Distribution board	
Main Distribution Board	



SECOND FLOOR

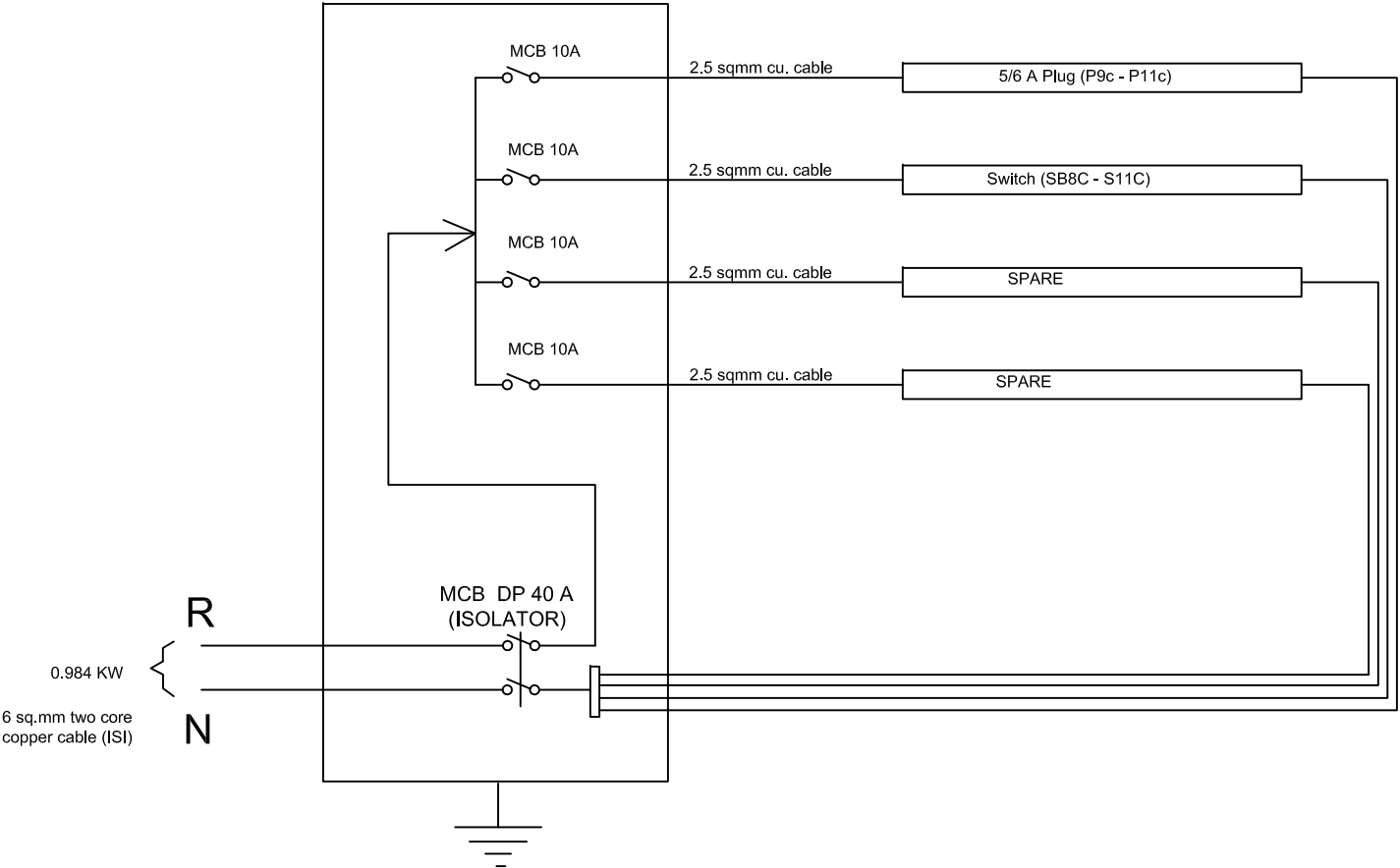
6-way MCB DB SP & N D/D



CIRCUIT DISTRIBUTION<7>

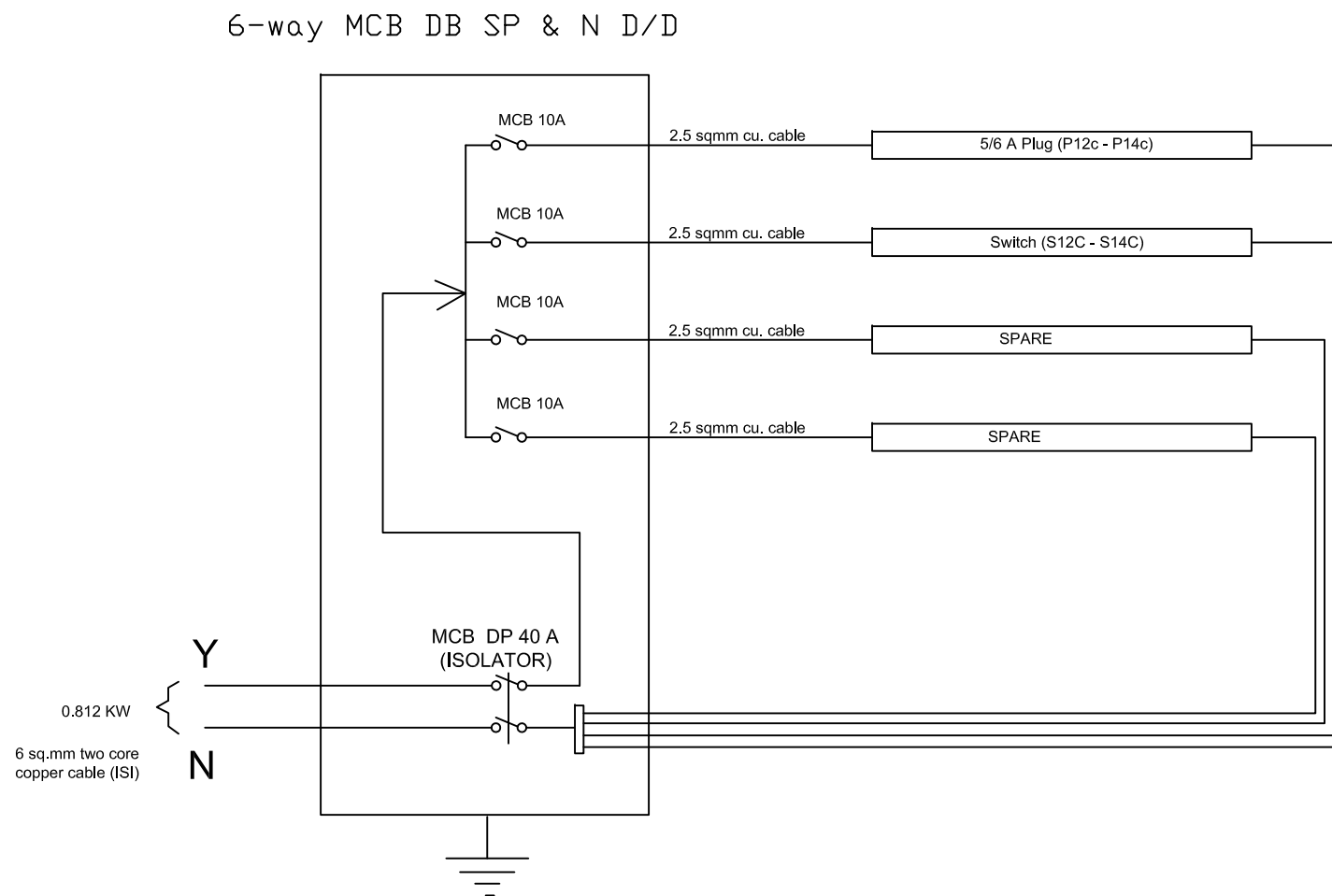
PROJECT	
DIET BUILDING AT HNAHTHIAL DISTRICT	
NOTES	
STATE PROJECT OFFICE SAMAGRA SHIKSHA, MIZORAM	
DRAWING : SINGLE LINE DIAGRAM	
	
DATE : 20/09/2023	SHEET NO : 10
SCALE : NOT TO SCALE	
DRAWN BY	
COUNTERSIGNED BY	

6-way MCB DB SP & N D/D



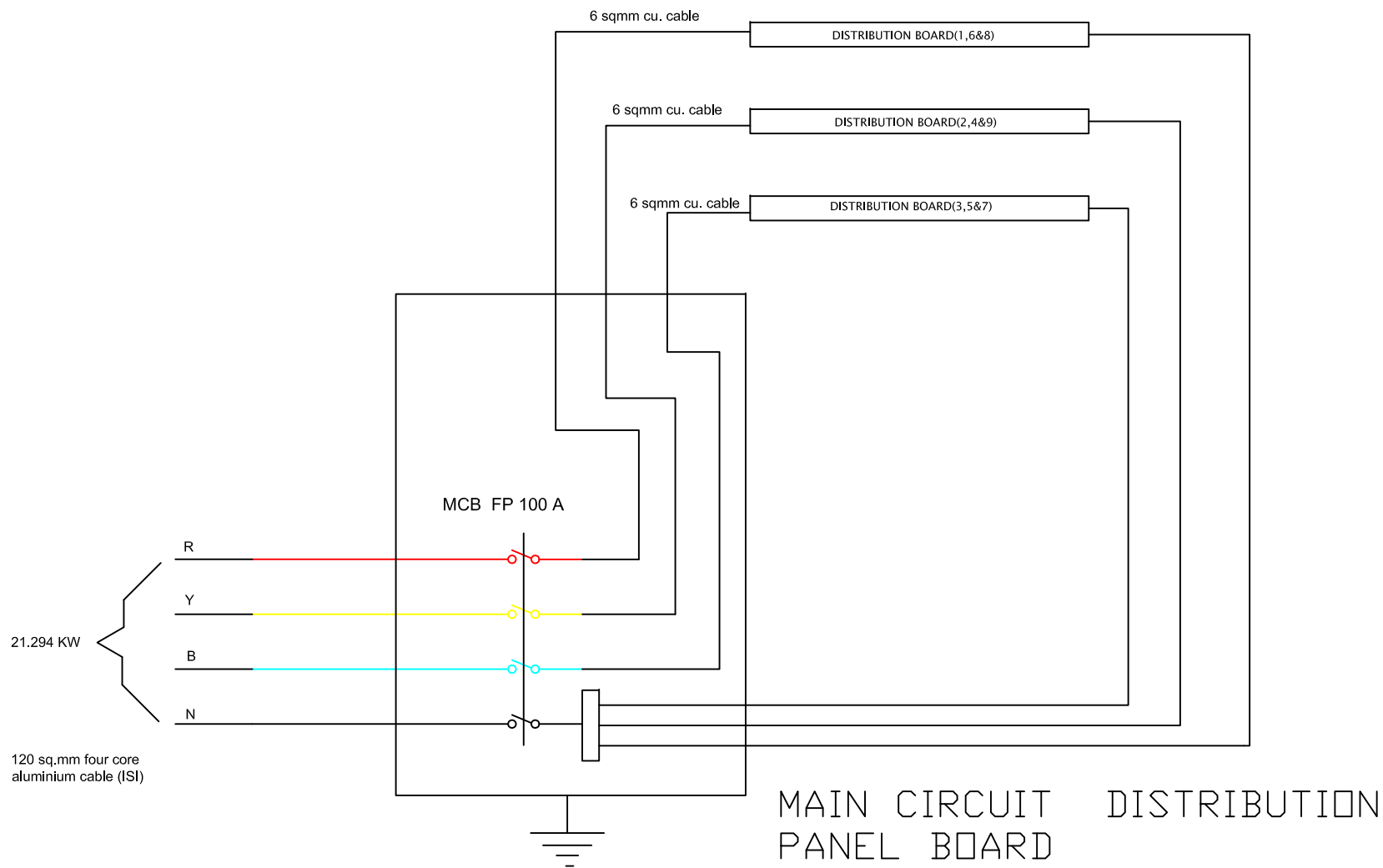
CIRCUIT DISTRIBUTION(8)

PROJECT	
DIET BUILDING AT HNAHTHIAL DISTRICT	
NOTES	
STATE PROJECT OFFICE SAMAGRA SHIKSHA, MIZORAM	
DRAWING : SINGLE LINE DIAGRAM	
	
DATE : 20/09/2023	SHEET NO : 11
SCALE : NOT TO SCALE	
DRAWN BY	
COUNTERSIGNED BY	



CIRCUIT DISTRIBUTION(9)

PROJECT	
DIET BUILDING AT HNAHTHIAL DISTRICT	
NOTES	
STATE PROJECT OFFICE SAMAGRA SHIKSHA, MIZORAM	
DRAWING : SINGLE LINE DIAGRAM	
	
DATE : 20/09/2023	SHEET NO : 12
SCALE : NOT TO SCALE	
DRAWN BY	
COUNTERSIGNED BY	



PROJECT	
DIET BUILDING AT HNAHTIAL DISTRICT	
NOTES	
STATE PROJECT OFFICE SAMAGRA SHIKSHA, MIZORAM	
DRAWING : SINGLE LINE DIAGRAM	
	
DATE : 20/09/2023	SHEET NO : 13
SCALE : NOT TO SCALE	
DRAWN BY	
COUNTERSIGNED BY	

BILL OF QUANTITIES

NAME OF WORK : INTERNAL ELECTRIFICATION OF DIET BUILDING AT KHAWZAWL DISTRICT

SOR	DESCRIPTION OF MATERIAL	UNIT	QUANTITY	RATE		AMOUNT
				in figure	in words	
C:02:00	SURFACE PVC CASING &CAPPING COPPER WIRING (GRADE-II)					
C:02:01	<u>LIGHT POINT,CEILING FAN POINT,EXHAUST FAN POINT ETC (MODULAR TYPE)</u> Wiring in looping system with PVC wire sheathed standard copper conductor/wires as per IS:694 (1990) and Flame retardant low smoke & Halogen (FR-LSH)1100 voltage graded copper flexible wire stranded copper running inside PVC casing & capping (Gr-II) 20mm dia fixed, surface on the wall/ceiling/floor as per convenience including junction box having required numbers of ways from control switch to the light point etc as required:-					
	LIGHT POINT					
	C:02:01 (B) Short Point (Modular)	Each	45			
	C:02:01 (C) Medium Point (Modular)	Each	101			
	C:02:01 (D) Long Point (Modular)	Each	30			
C:02:02	<u>LIGHT PLUG/Socket POINT 5/6 AMPERES (MODULAR TYPE)</u> Wiring in looping system with PVC wire sheathed standard copper conductor/wires as per IS:694 (1990) and Flame retardant low smoke & Halogen (FR-LSH) 1100 voltage graded copper flexible wire stranded copper running inside PVC casing & capping (Gr-II) 20x12mm fixed, surface on the wall/ceiling /floor as per convenience including junction box having required numbers of ways from DB to the light plug/socket 5/6A point etc. as required :-					
	C:02:02(D) Light plug Point Long Point (modular)	Each	58			

C:02:03	<u>POWER PLUG/SOCKET POINT 15/16 AMPERES (MODULAR TYPE)</u> Wiring in looping system with PVC wire sheathed standard copper conductor/wires as per IS:694 1990) and Flame retardant low smoke & Halogen (FR-LSH) 1100 voltage graded copper flexible wire stranded copper running inside PVC casing & capping (Gr-II) 30x12mm fixed, surface on the wall/ceiling /floor as per convenience including junction box having required numbers of ways from DB to the power plug/socket 15/16A point etc. as required :-					
	C:02:03(D)Power plug Point 15/16 A Long Point (Modular)	Each	8			
C:02:06	<u>MAIN TO SUB-MAIN IN COPPER WIRE GRADE-II SURFACE (SINGLE PHASE TWO WIRES)</u> Wiring in looping system with PVC wire sheathed standard copper conductor/wires as per IS:694 (1990) and Flame retardant low smoke & Halogen (FR-LSH) 1100 voltage graded copper flexible wire stranded copper running inside PVC Casing & capping (Grade-II) of all available sizes diameter fixed, surface on the wall/ceiling/floor as per convenience including junction box having required numbers of ways from Main to Sub-Main/DB/Sub-Main/DB to SDB/SDB/Switch boards/SDB to switch boards as required:-					
	C:01:06(A) 2X2.5 Sqmm copper conductor/cable + 1x2.5 Sqmm earth wire	rm	210			
	C:01:06(B) 2X4 Sqmm copper conductor/cable + 1x4 Sqmm earth wire	rm	100			
	C:01:06(C) 2X 6 Sqmm copper conductor/cable + 1 x 6 Sqmm earth wire	rm	200			
I:01:00	<u>SUPPLYING AND FIXING OF SWITCH BOARDS (MODULAR TYPE) grade-I</u> Supplying and fixing of Modular switch board grade-II of the following sizes/modules on surface/recess including PVC/Steel boxes, modular plate and necessary switches, plug/socket, and fan regulators etc. with necessary painting if necessary					
	One Module Switch Board (Modular)					
	I:02:01 1 S	No	11			
	I:02:03 1 S two ways	No	7			
	Two modules Switch Board (Modular)					
	I:01:13 2 S	No	16			

	Four modules Switch Board (Modular)					
	I:02:56 2S + 1Soc	No	1			
	Six modules Switch Board (Modular)					
	I:01:95 4 S + 1 Soc	No	25			
	Twelve modules Switch Board (Modular)					
	I:02:233 8 S+ 2 SOC	No	4			
	Sixteen modules Switch Board (Modular)					
	I:02:408 12 S+ 2 SOC	No	1			
M:00:00	PANEL BOARDS WITH METAL BOARDS ETC.					
M:01:00	PANEL BOARDS WITH METAL BOARDS COMPARMETALISED CONSTRUCTION					
	M:01:01 Supplying, and fixing on the wall/floor mounted metal board of welded construction, fabricated with minimum sizes of 50mmX50mmX6mm angle iron frame work, with 25mm X 6mm flat Iron as horizontal and vertical intermediate members of suitable angle/flat Iron for mounting of switch gears including painting etc , as required.	Sqm	1			
M:02:00:	<u>PANEL BOARD MEASURING INSTRUMENT AND INTER-CONNECTION FOR I/C AND B/B</u> Providing, and fixing of measuring instruments, selector switches, current transformer, Phase indication light (for RYB) 440/650 Volts, including inter-connection of incoming SFU/ACB of the following rating in standard copper cable/ alluminium/copper strips for the following rating of Bus bar, drilling holes on the board, earthing the body etc as required.					
	M:02:06 200 A B/B (125/100A I/C M/S)	Each	1			
M:03:00:	<u>PANEL BOARD MEASURING INSTRUMENTS AND INTER-CONNECTION:-</u> Providing and fixing of inter-connection of Out-going SFU/ACB of the following rating in standard copper cable/alluminium/copper strips with standard Bus Bar , drilling holes on the board, earthing the body etc as required.					
	M:03:04 125 A O/G M/S	Each	1			
N:00:00	MCBs/RCCBs/ELCBs/MCCBs/EARTH FAULT RELAY SP/SPN/DP/DP&N/TP/TP&N/FP					

N:01:00	MCBs SP/SP&N/DP/TP/TP&N/FP Supplying and fixing of all types and rating MCBs, RCCBs, ELCBs etc, 240/415 Volts 50 Hz AC supply in the existing MCB DB complete with connections, testing & commissioning etc in					
	N:01:01 5 to 32 Amps ,SP, MCB B- series	Each	48			
	N:01:27 63 Amps' DP, MCB Isolator	Each	9			
	N:01:37 100 Amps' FP, MCB Isolator	Each	1			
N:04:00	MOULDED CASE CIRCUIT BREAKERS(MCCB) Supplying, and fixing of different rating 415 volts, Moulded Case Circuit breaker (MCCB) G-frame IP-1 conforms to IEC:947/IS:13947-II of different Breaking Capacity, Icu at 415 Volts different poles including testing & commissioning etc, as required.					
	N:04:03 25-100 Amps' FP, 16KA MCCB	Each	3			
O:00:00	DISTRIBUTION BOARDS					
O:03:00	MCB DISTRIBUTION BOARD Supplying,fitting,&fixing of 63 amps' 6-Ways Distribution Board with Bakelite fused fitting with fused links, 240 Volts 50 Hz AC on surface/recess completed including inter-connection,painting etc, as required.					
	O:03:06 8-ways MCB DB SP&N DD metallic door	Each	3			
	O:03:75 6-ways MCB DB SP&N DD Metallic Door	Each	6			
O:06:00	MCCB DISTRIBUTION PANEL Supplying,fitting,&fixing of MCCB Distribution panel 4-ways suitable for Tab 2 , 3 Poles MCCB incomer and Tap 1, 3 Poles MCCB out going, Bus Bar,Neutral links,Blanking plates in Sheet steel Acrylic cover Phosphatised powder painted conforms to IS:13032,IS:8623,BS:5486 with 3 nos indicating light 415 Volts,50 Hz, AC on surface/recess including inter-connection,painting etc, as required					
	O:06:04 MCCB Distribution Panel 6 ways with TP i/c Tap 2, 3P and TP o/g Tab 1 ,3 P with MCCB 125 Amp Tab 3 TP 25 KA & 25-100 Amps Tab1 TP 16 KA with digital metering modules	Each	1			
J:00:00	LIGHTING FIXTURES(SURFACE/RECESS)					
	LIGHTING FIXTURES CEILING/WALL MOUNTED:-					
	J:01:03 Supplying, fitting and fixing Batten Holder including connection etc, as required	Each	7			
	(1661) CFL Curvy 15W(SP) B22,E27 Base Havells/Equivalent	No	7			

J:01:00	J:01:30 Installation, testing & commissioning of pre-wired fluorescent Light fittings of all types, with all accessories and tubes etc, directly on ceiling/wall, including connection with 1.5 Sqmm copper conductor single core cable etc as required.	Each	165			
	J:01:50 12W LED Panel Light Cool Daylight(Havells/Phillips or Equivalent)	No	97			
	J:01:51 18W LED Panel Light Cool Daylight(Havells/Phillips or Equivalent)	No	68			
	(1625) Flood Light 2X65W CFL Retro ZING 2 Polycarbonate flood light luminaire for twin high Wattage Retrofit CFL. Havells/equivalent	No	1			
	J:01:36 Installation, testing & commissioning of ceiling fan and regulator, including wiring the down rod of standard length (upto 30cm) with 2X1.5 sqmm PVC insulated copper conductor single core cable etc, as required	Each	48			
	(1860)Bracket wall mounting fan 400mm sweeps Mist air Ultra/Stiker High speed ISI marked (Usha/equivalent)	No	48			
J:02:00	Installation of all kind of Electrical appliances					
	J:02:05 Installation of Air Conditioner Split type 1.5/2.0 TR in the existing wall including fixing the Hook in the wall by standard sizes of sleeves Nuts and bolt or Standard Screw for the above Air Conditioner Split type 1.5/2.0 TR, and making good the damage, connection, testing and commissioning etc, as required.	Each	6			
	J:02:08 Extra for fixing of 5/8" cooling pipe/delivery pipe copper pipe for Air Conditioner for the extra length other than Company Provided as required:-	Each	6			
	J:02:70 KS-Q18HYZD1.5T 3-Star inverter split AC (LG/SAMSUNG or equivalent)	Each	6			
	(1917) 2KVA Automatic Stabilizer with built-in high cut, Buzzer & Timer :Input:50VA-280V & Output:210V-240V (Venus/Equivalent)	Each	6			
	EARTHING AND LOOP EARTHING					
	Q:01:07 Earthing with Copper Earth plate 600mmx600mmx6mm thick including accessories and providing masonry enclosure with cover plate having locking arrangement and water pipe, etc. (but without charcoal or coke and salt) complete as required.	Each	1			

Q:01:00	Q:01:10 Extra for using salt and coke for G.I or copper plate earth electrode as required.	Each	1			
	Q:01:38 Supplying & Laying of 8 SWG Copper Wire at .50mbelow ground level for conductor earth electrode, including soldering etc. as required. (8 SWG Copper Wire (4mm dia '))	Metre	18			
	Q:01:55 Supplying and drawing of 1.5 sqmm PVC sheathed copper conductor for loop earthing in the existing surface/recess steel/PVC conduit/PVC cassing & capping alongwith others wires as required.	Metre	365.9			
	3-Phase Service connection 120sqmm four core Aluminium cable in lump sum	Rs				
	Total					
	Add 18% GST					
	Add 1% Labour Cess					
	GRAND TOTAL	Rs				

(Rupees _____)Only