

PROJECT:
**MIZORAM
 HEALTH
 SYSTEM
 STRENGTHENING
 PROJECT**

TITLE :
 PROPOSED CMO
 OFFICE BUILDING
 AT HNAHTHIAL

SHEET TITLE :
 FOUNDATION LAYOUT

SHEET No: SD/1

DATE : 5/10/2020

REVISION No : 1

Date of Revision:
10/12/2020

SCALE : Not to Scale

**All dimensions are in
 mm**

NOTE :
**Please refer Sheet
 no : SD/21**

Design By :

ROZAMPUIA
 STRUCTURE ENGINEER

Drawing By :

(C ZOTHANTLUANGA)
 Assistant Engineer (CPHC/HWC)
 National Health Mission
 Mizoram : Aizawl

PROJECT:
**MIZORAM
 HEALTH
 SYSTEM
 STRENGTHENING
 PROJECT**

TITLE :
 PROPOSED CMO
 OFFICE BUILDING
 AT HNAHTHIAL

SHEET TITLE :
 DETAILS OF FOOTING (F2)

SHEET No: SD/2

DATE : 5/10/2020

REVISION No : 1

Date of Revision:
10/12/2020

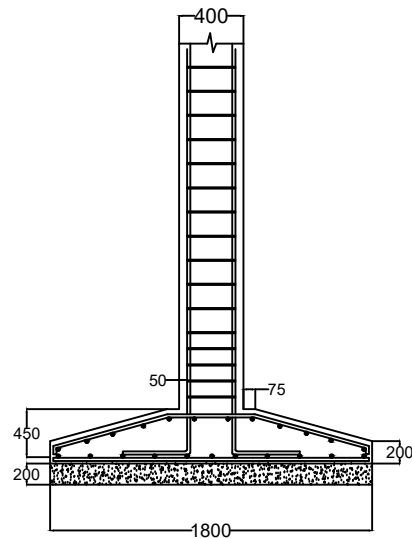
SCALE : Not to Scale

**All dimensions are in
 mm**

NOTE :
**Please refer Sheet
 no : SD/21**

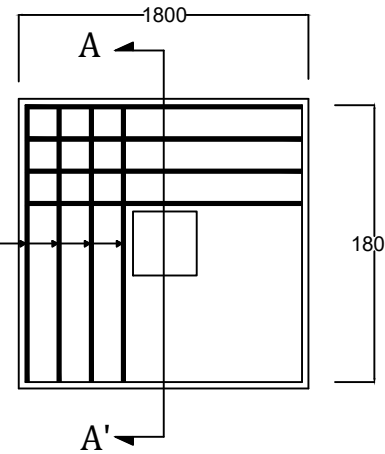
Design By :
 ROZAMPUJA
 STRUCTURE ENGINEER

Drawing By :
 (C ZOTHANTLUANGA)
 Assistant Engineer (CPHC/HWC)
 National Health Mission
 Mizoram : Aizawl



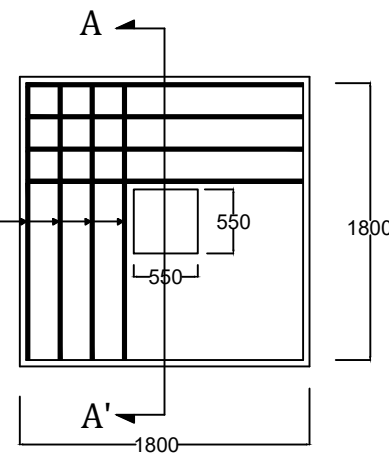
TYPICAL SECTION OF ISOLATE FOOTING (F2)

12mmØ @ 240mm
 c/c in both direction



DETAILS OF TOP REINFORCEMENTS

12mmØ @ 210mm
 c/c in both direction



DETAILS OF BOTTOM REINFORCEMENTS

FOOTING DETAIL

FOOTING MARKED	L x B (mm)	T _f (mm)	T _t (mm)	Top Rft. Along 'L'		Top Rft. Along 'B'		Bottom Rft. Along 'L'		Bottom Rft. Along 'B'	
				D ₁	N ₁	D ₂	N ₂	D ₁	N ₁	D ₂	N ₂
F2	1800 x 1800	200	450	12mmØ	8	12mmØ	8	12mmØ	9	12mmØ	9

PROJECT:
MIZORAM HEALTH SYSTEM STRENGTHENING PROJECT

TITLE :
 PROPOSED CMO OFFICE BUILDING AT HNAHTHIAL

SHEET TITLE :
 DETAILS OF FOOTING (F1)

SHEET No: SD/3

DATE : 5/10/2020

REVISION No : 1

Date of Revision:
 10/12/2020

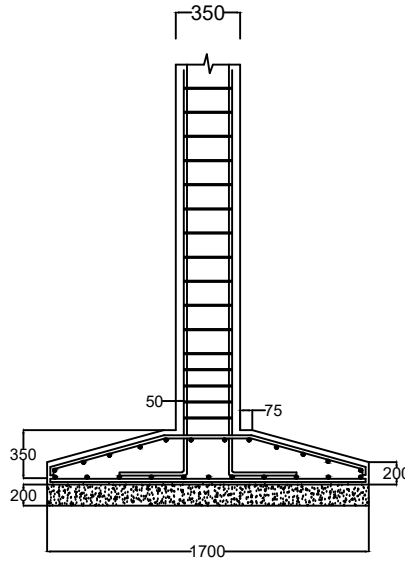
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All dimensions are in mm

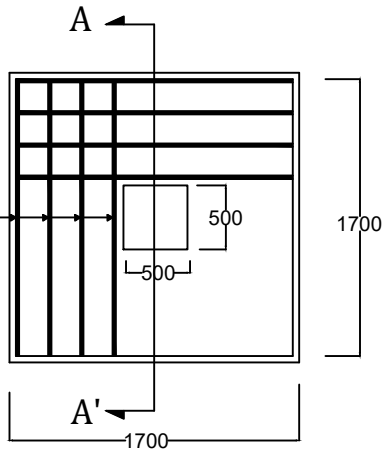
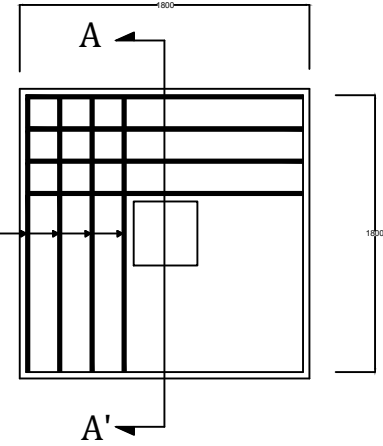
NOTE :
 Please refer Sheet no : SD/21

Design By :
 ROZAMPUJA
 STRUCTURE ENGINEER

Drawing By :
 (C ZOTHANTLUANGA)
 Assistant Engineer (CPHC/HWC)
 National Health Mission
 Mizoram : Aizawl



12mmØ @ 310mm
 c/c in both direction



12mmØ @ 310mm
 c/c in both direction

FOOTING DETAIL

FOOTING MARKED	L x B (mm)	T _f (mm)	T _t (mm)	Top Rft. Along 'L'		Top Rft. Along 'B'		Bottom Rft. Along 'L'		Bottom Rft. Along 'B'	
				D ₁	N ₁	D ₂	N ₂	D ₁	N ₁	D ₂	N ₂
F1	1700x1700	200	350	12mmØ	6	12mmØ	6	12mmØ	6	12mmØ	6

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TITLE :
**PROPOSED CMO
 OFFICE BUILDING
 AT HNAHTHIAL**

SHEET TITLE :
 COLUMN LAYOUT at +0.00 Lvl;
 +3.20 Lvl; +6.40 Lvl; +9.60 Lvl.

SHEET No: SD/4

DATE : 5/10/2020

REVISION No : 1

Date of Revision:
10/12/2020

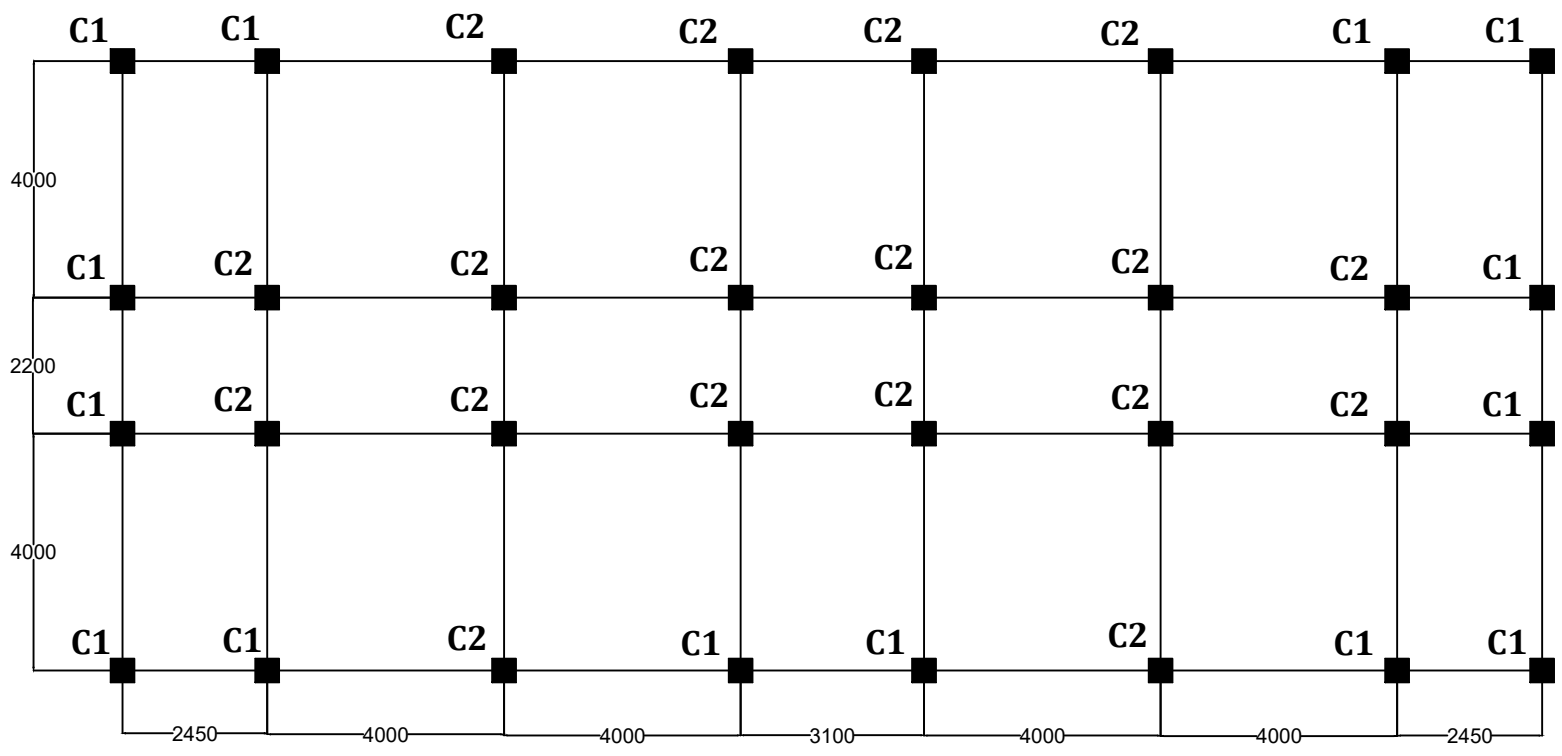
SCALE : Not to Scale

**All dimensions are in
 mm**

NOTE :
**Please refer Sheet
 no : SD/21**

Design By :
 ROZAMPUA
 STRUCTURE ENGINEER

Drawing By :
 (C ZOTHANTLUANGA)
 Assistant Engineer (CPHC/HWC)
 National Health Mission
 Mizoram : Aizawl



PROJECT:

**MIZORAM
HEALTH
SYSTEM
STRENGTHENING
PROJECT**

TITLE :

**PROPOSED CMO
OFFICE BUILDING
AT HNAHTHIAL**

SHEET TITLE :

**COLUMN LAYOUT AT
+12.80 Lvl**

SHEET No: SD/5

DATE : 5/10/2020

REVISION No : 1

**Date of Revision:
10/12/2020**

SCALE : Not to Scale

**All dimensions are in
mm**

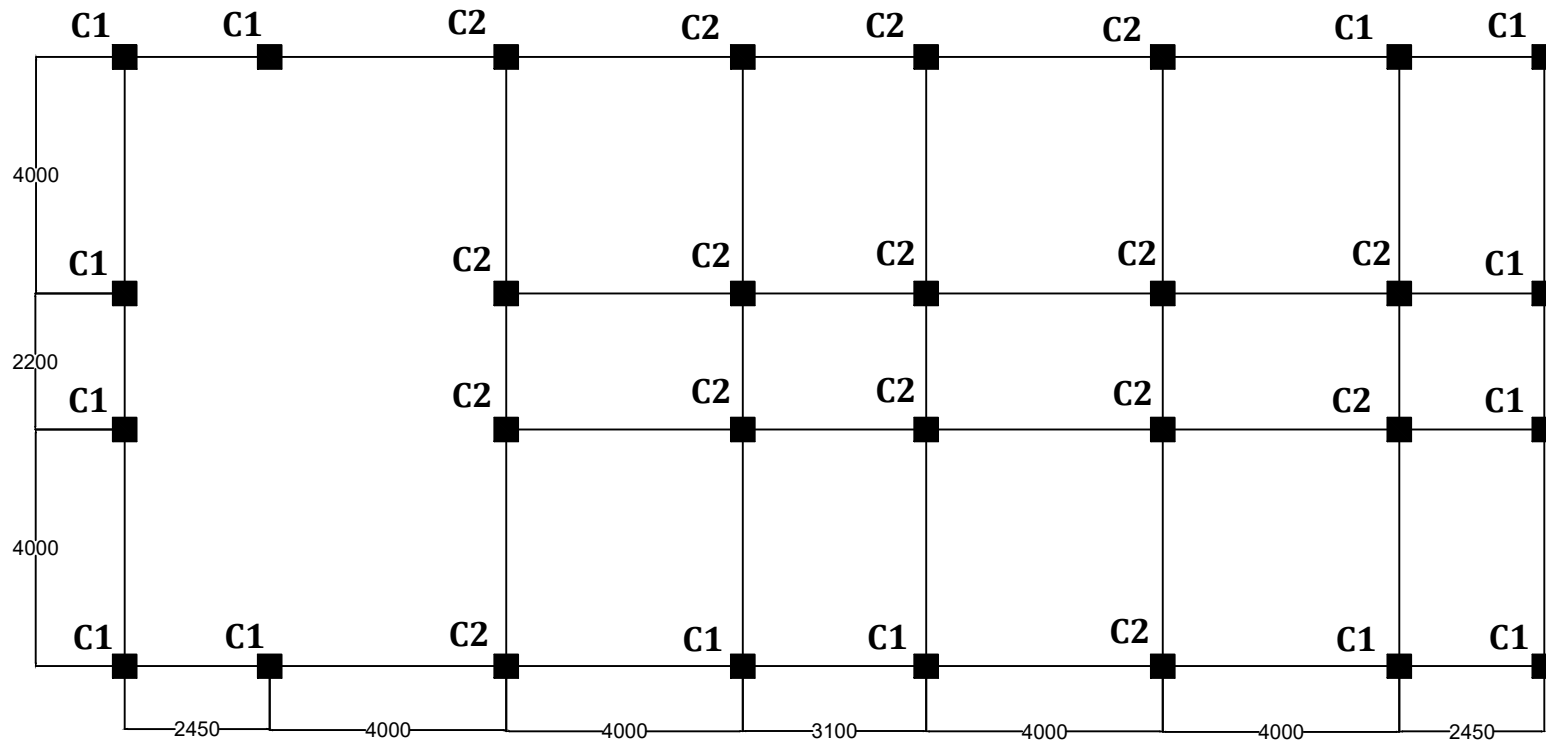
**NOTE :
Please refer Sheet
no : SD/21**

Design By :

ROZAMPUIA
STRUCTURE ENGINEER

Drawing By :

(C ZOTHANTLUANGA)
Assistant Engineer (CPHC/HWC)
National Health Mission
Mizoram : Aizawl



PROJECT:

**MIZORAM
HEALTH
SYSTEM
STRENGTHENING
PROJECT**

TITLE :

**PROPOSED CMO
OFFICE BUILDING
AT HNAHTHIAL**

SHEET TITLE :

**COLUMN LAYOUT AT
+12.80 Lvl**

SHEET No: SD/6

DATE : 5/10/2020

REVISION No : 1

**Date of Revision:
10/12/2020**

SCALE : Not to Scale

**All dimensions are in
mm**

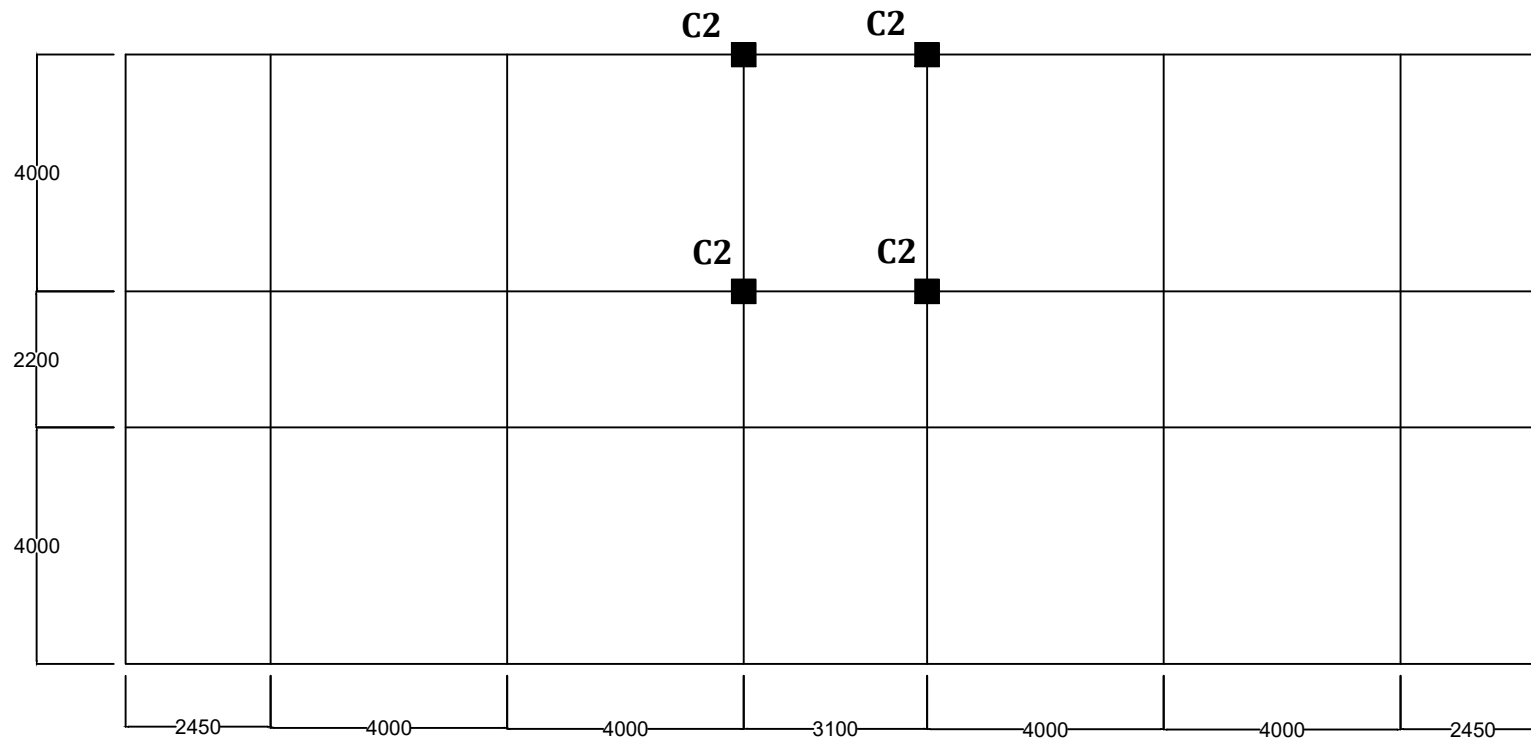
**NOTE :
Please refer Sheet
no : SD/21**

Design By :

**ROZAMPUIA
STRUCTURE ENGINEER**

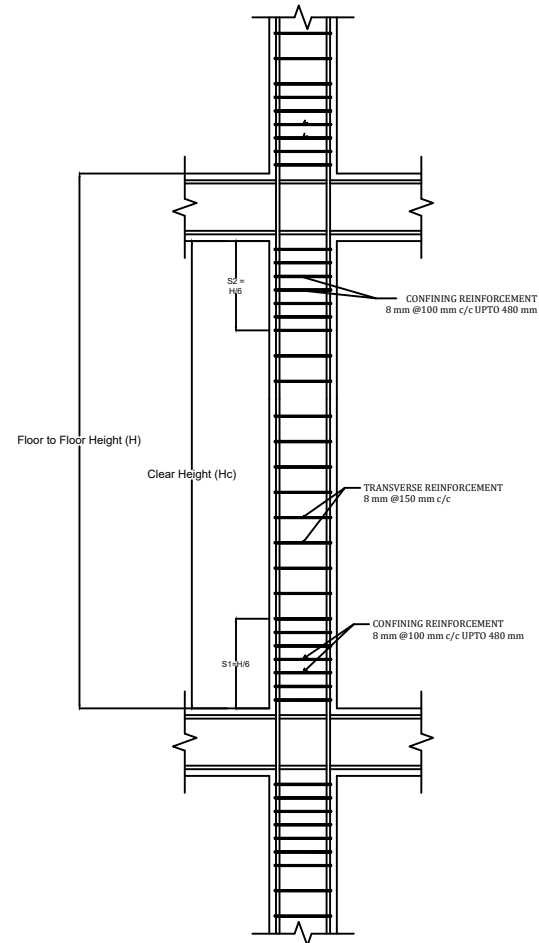
Drawing By :

**(C ZOTHANTLUANGA)
Assistant Engineer (CPHC/HWC)
National Health Mission
Mizoram : Aizawl**



COLUMN MARKED	DETAIL OF COLUMN SECTION
C1	<p>2# 20Ø 1# 16Ø 8Ø @ 450mm c/c 1# 16Ø 2# 20Ø 8Ø @ 150mm c/c 350 350</p>

COLUMN MARKED	DETAIL OF COLUMN SECTION
C2	<p>3# 20Ø 8Ø @ 450mm c/c 3# 20Ø 8Ø @ 150mm c/c 400 400</p>



TYPICAL CROSS SECTION OF COLUMN

PROJECT:
**MIZORAM
HEALTH
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PROJECT**

TITLE :
**PROPOSED CMO
OFFICE BUILDING
AT HNAHTHIAL**

SHEET TITLE :
COLUMN DETAILS

SHEET No: SD/7

DATE : 5/10/2020

REVISION No : 1

Date of Revision:
10/12/2020

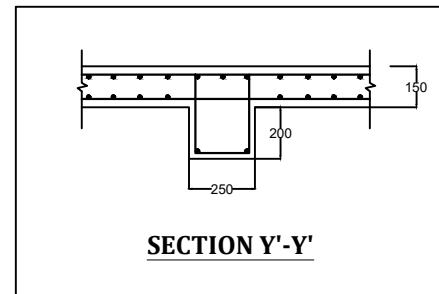
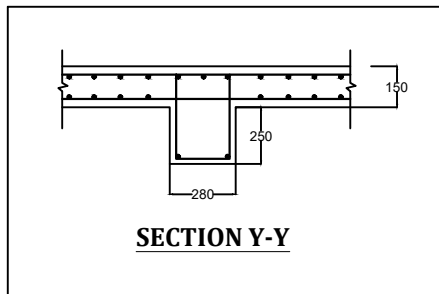
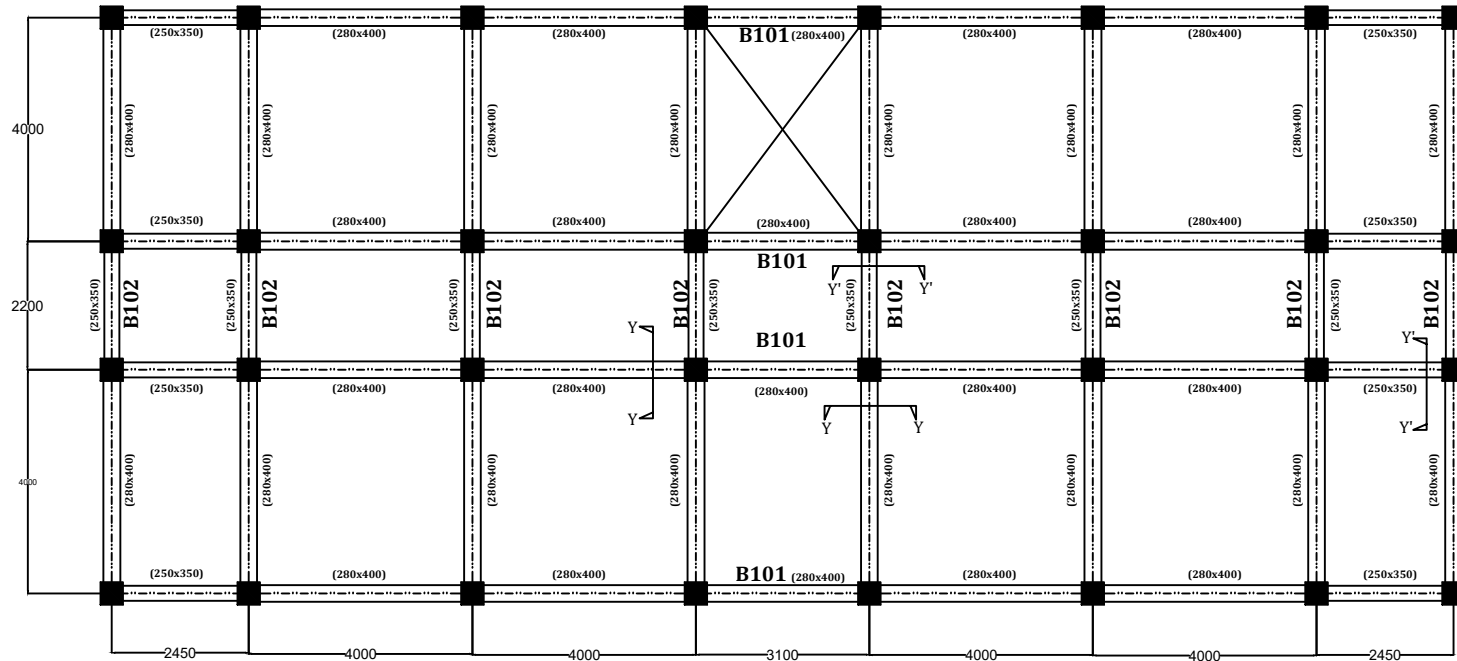
SCALE : Not to Scale

**All dimensions are in
mm**

NOTE :
**Please refer Sheet
no : SD/21**

Design By :
**ROZAMPUA
STRUCTURE ENGINEER**

Drawing By :
**(C ZOTHANTLUANGA)
Assistant Engineer (CPHC/HWC)
National Health Mission
Mizoram : Aizawl**



PROJECT:
**MIZORAM
 HEALTH
 SYSTEM
 STRENGTHENING
 PROJECT**

TITLE :
**PROPOSED CMO
 OFFICE BUILDING
 AT HNAHTHIAL**

SHEET TITLE :
**BEAM LAYOUT AT +0.00 Lvl;
 +3.20 Lvl; +6.40 Lvl; +9.60 Lvl**

SHEET No: SD/8

DATE : 5/10/2020

REVISION No : 1

Date of Revision:
10/12/2020

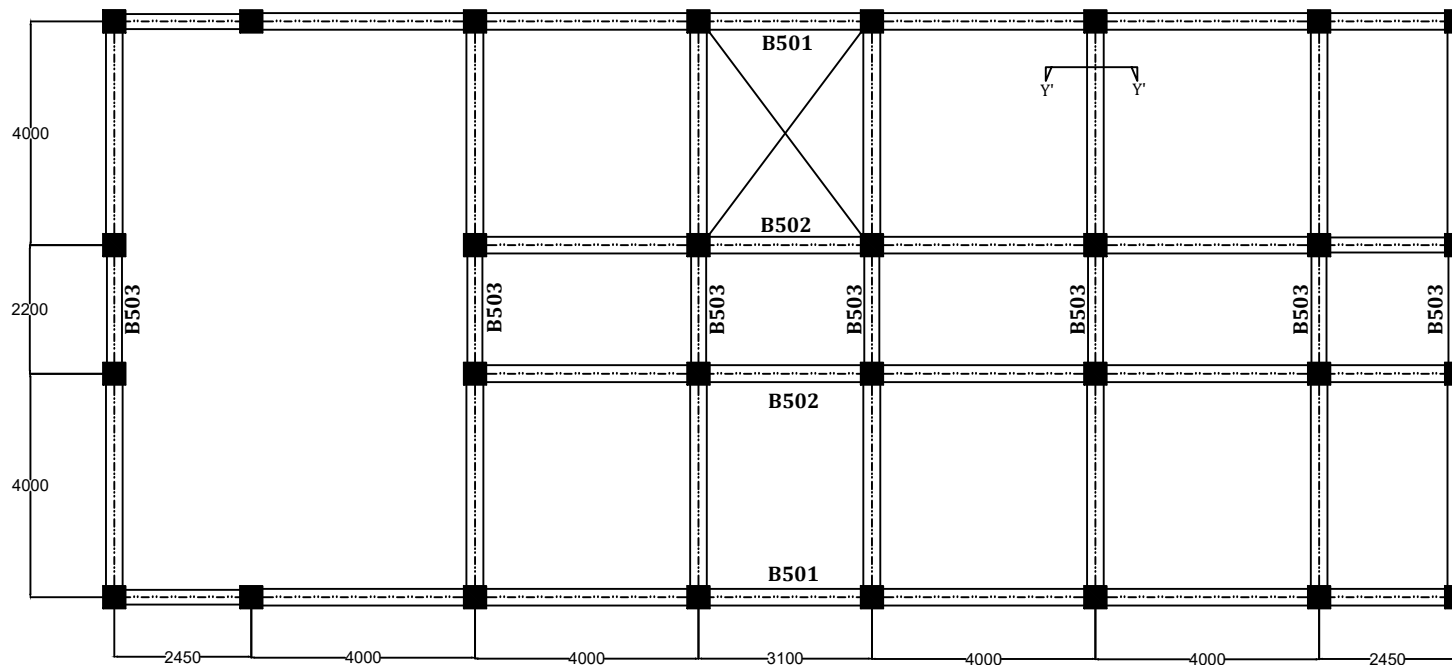
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**All dimensions are in
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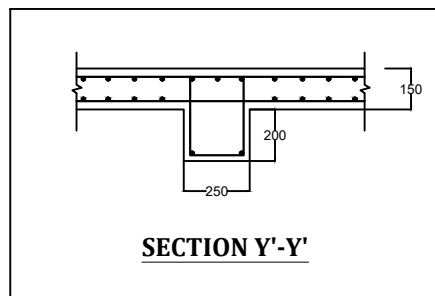
NOTE :
**Please refer Sheet
 no : SD/21**

Design By :
 ROZAMPUA
 STRUCTURE ENGINEER

Drawing By :
 (C ZOTHANTLUANGA)
 Assistant Engineer (CPHC/HWC)
 National Health Mission
 Mizoram : Aizawl



SIZE OF BEAM : (250x350)



PROJECT:
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TITLE :
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SHEET TITLE :
BEAM LAYOUT AT +12.80 Lvl

SHEET No: SD/9

DATE : 5/10/2020

REVISION No : 1

Date of Revision:
10/12/2020

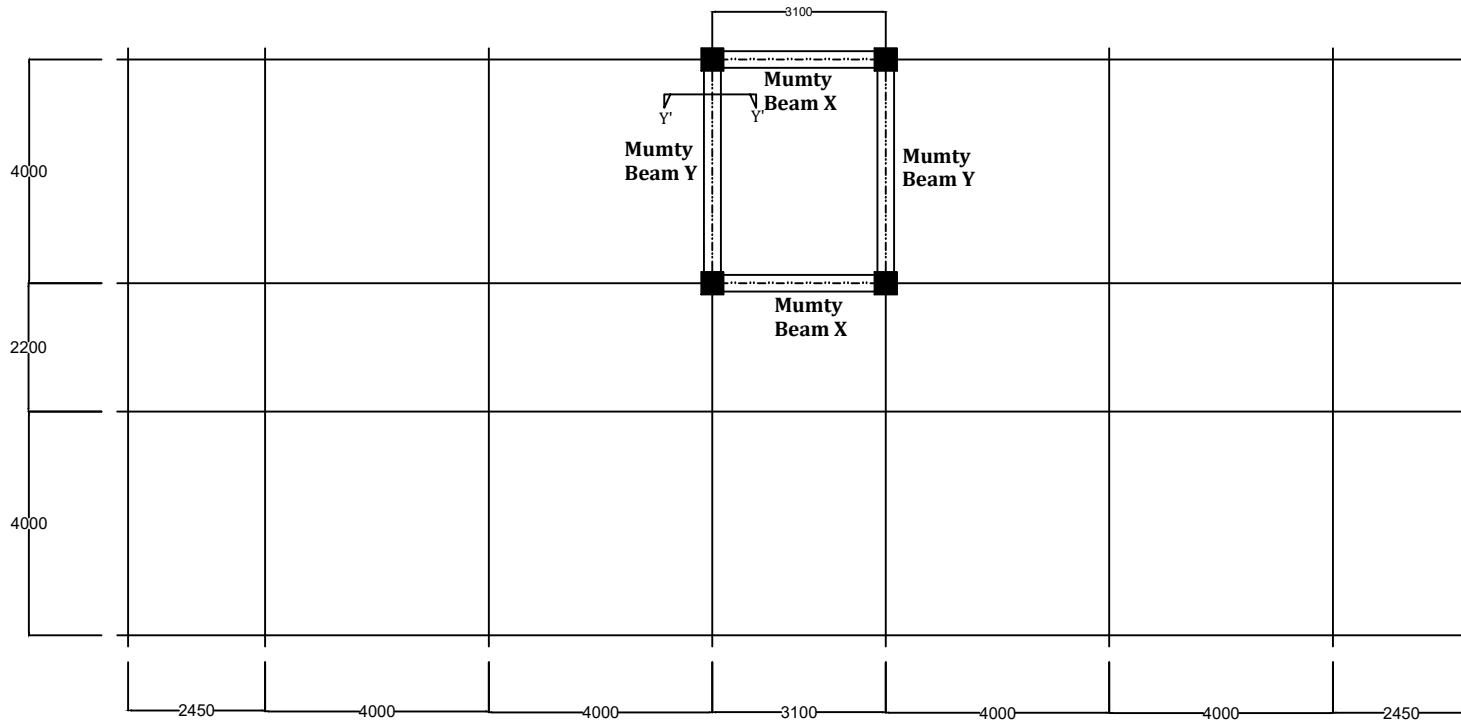
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**All dimensions are in
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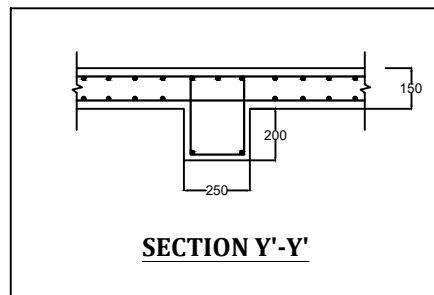
NOTE :
**Please refer Sheet
 no : SD/21**

Design By :
 ROZAMPUA
 STRUCTURE ENGINEER

Drawing By :
 (C ZOTHANTLUANGA)
 Assistant Engineer (CPHC/HWC)
 National Health Mission
 Mizoram : Aizawl



SIZE OF BEAM : (250x350)



PROJECT:
**MIZORAM
 HEALTH
 SYSTEM
 STRENGTHENING
 PROJECT**

TITLE :
 PROPOSED CMO
 OFFICE BUILDING
 AT HNAHTHIAL

SHEET TITLE :
 BEAM LAYOUT AT +15.60 Lvl

SHEET No: SD/10

DATE : 5/10/2020

REVISION No : 1

Date of Revision:
10/12/2020

SCALE : Not to Scale

**All dimensions are in
 mm**

NOTE :
 Please refer Sheet
 no : SD/21

Design By :
 ROZAMPUA
 STRUCTURE ENGINEER

Drawing By :
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 Assistant Engineer (CPHC/HWC)
 National Health Mission
 Mizoram : Aizawl

PROJECT:
**MIZORAM
 HEALTH
 SYSTEM
 STRENGTHENING
 PROJECT**

TITLE :
**PROPOSED CMO
 OFFICE BUILDING
 AT HNAHTHAL**

SHEET TITLE :
**BEAM SECTION AT +0.00 Lvl;
 +3.20 Lvl; +6.40 Lvl; +9.60 Lvl**

SHEET No: SD/11

DATE : 5/10/2020

REVISION No : 1

Date of Revision:
10/12/2020

SCALE : Not to Scale

**All dimensions are in
 mm**

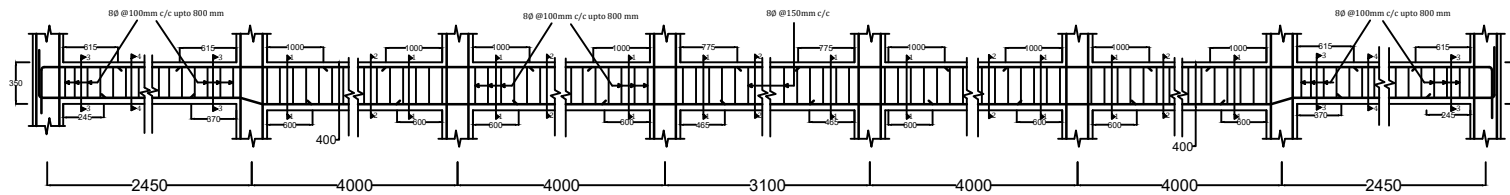
NOTE :
**Please refer Sheet
 no : SD/21**

Design By :

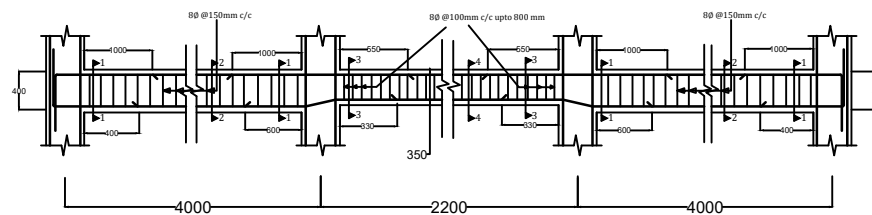
ROZAMPUJA
 STRUCTURE ENGINEER

Drawing By :

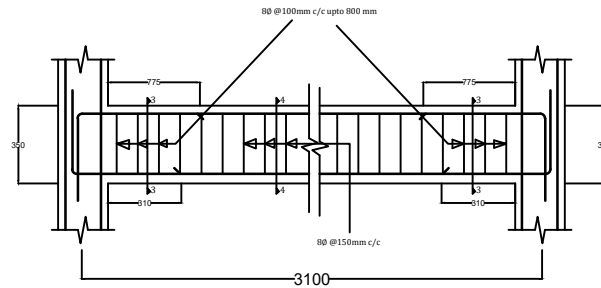
(C ZOTHANTLUANGA)
 Assistant Engineer (CPHC/HWC)
 National Health Mission
 Mizoram : Aizawl



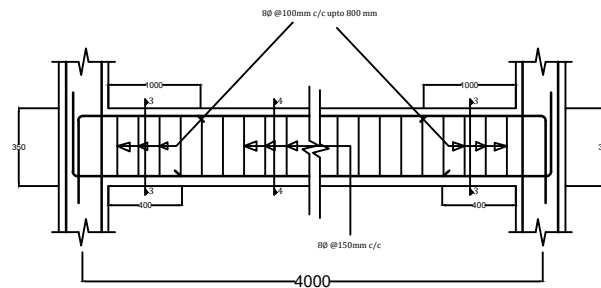
TYPICAL CROSS SECTION OF BEAM B101



TYPICAL CROSS SECTION OF BEAM B102



TYPICAL CROSS SECTION OF MUMTY BEAM X



TYPICAL CROSS SECTION OF MUMTY BEAM Y

PROJECT:
**MIZORAM
 HEALTH
 SYSTEM
 STRENGTHENING
 PROJECT**

TITLE :
 PROPOSED CMO
 OFFICE BUILDING
 AT HNAHTHIAL

SHEET TITLE :
 BEAM SECTION AT +15.60 Lvl

SHEET No: SD/13

DATE : 5/10/2020

REVISION No : 1

Date of Revision:
 10/12/2020

SCALE : Not to Scale

**All dimensions are in
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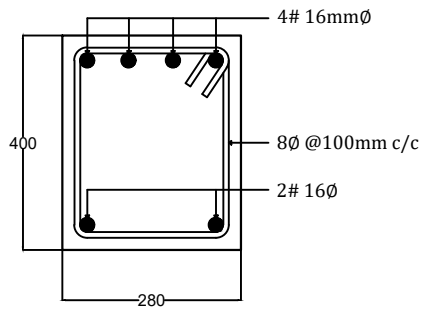
NOTE :
 Please refer Sheet
 no : SD/21

Design By :

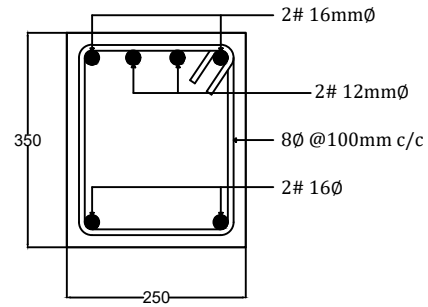
ROZAMPUIA
 STRUCTURE ENGINEER

Drawing By :

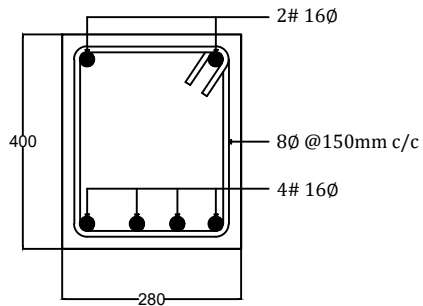
(C ZOTHANTLUANGA)
 Assistant Engineer (CPHC/HWC)
 National Health Mission
 Mizoram : Aizawl



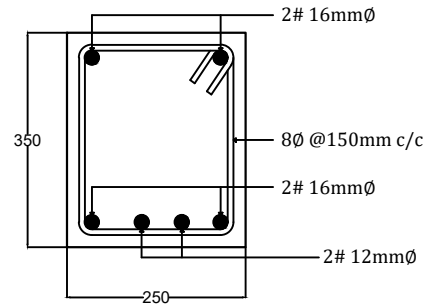
SECTION 1-1



SECTION 3-3



SECTION 2-2



SECTION 4-4

PROJECT:

**MIZORAM
HEALTH
SYSTEM
STRENGTHENING
PROJECT**

TITLE :

**PROPOSED CMO
OFFICE BUILDING
AT HNAHTHIAL**

SHEET TITLE :

BEAM SECTION DETAILS

SHEET No: SD/14

DATE : 5/10/2020

REVISION No : 1

Date of Revision:

10/12/2020

SCALE : Not to Scale

**All dimensions are in
mm**

NOTE :

**Please refer Sheet
no : SD/21**

Design By :

**ROZAMPUIA
STRUCTURE ENGINEER**

Drawing By :

**(C ZOTHANTLUANGA)
Assistant Engineer (CPHC/HWC)
National Health Mission
Mizoram : Aizawl**

PROJECT:
MIZORAM HEALTH SYSTEM STRENGTHENING PROJECT

TITLE :
PROPOSED CMO OFFICE BUILDING AT HNAHTHIAL

SHEET TITLE :
SLAB DETAILS

SHEET No: SD/15

DATE : 5/10/2020

REVISION No : 1

Date of Revision:
10/12/2020

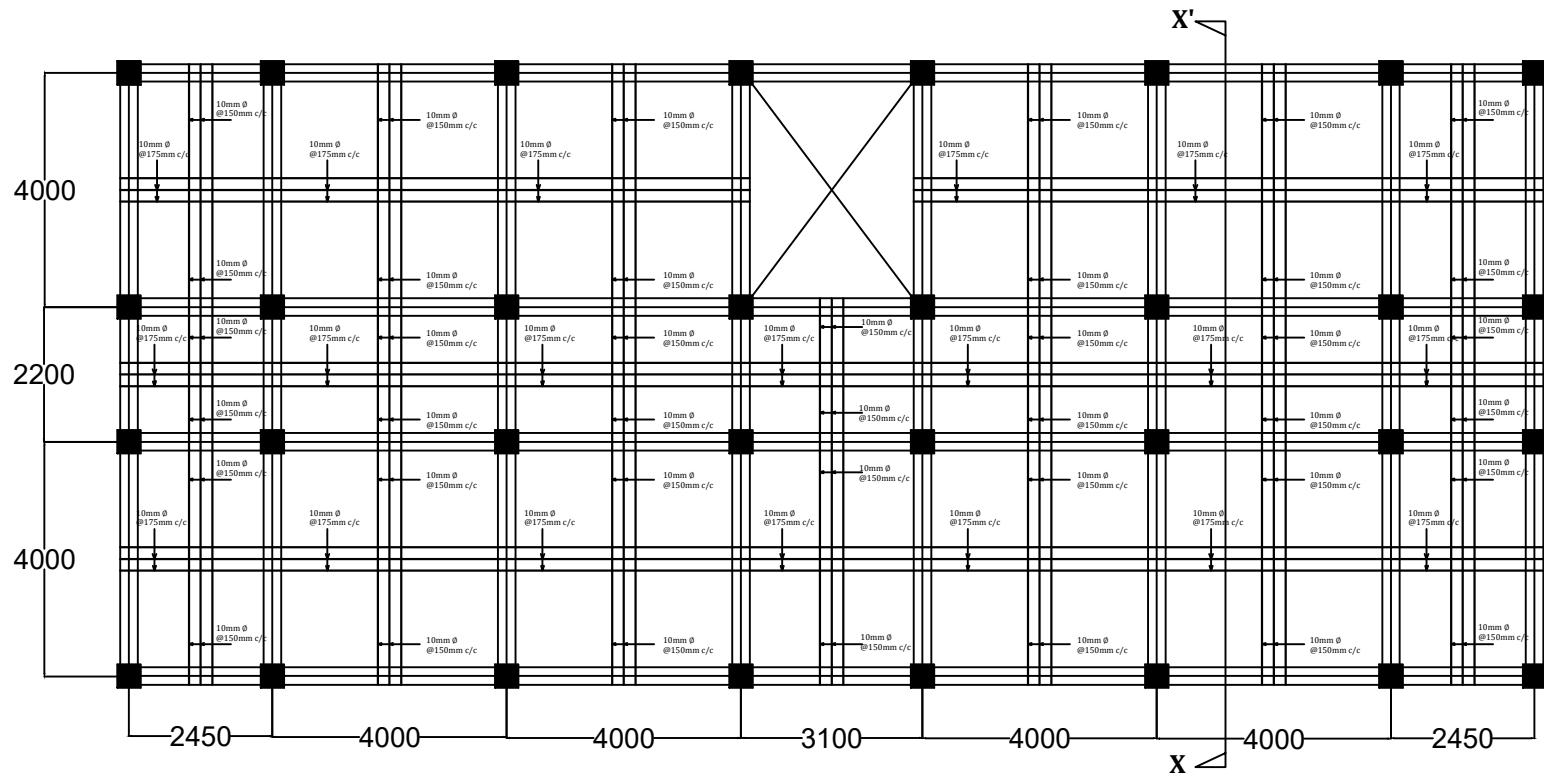
SCALE : Not to Scale

All dimensions are in mm

NOTE :
Please refer Sheet no : SD/21

Design By :
 ROZAMPUIA
 STRUCTURE ENGINEER

Drawing By :
 (C ZOTHANTLUANGA)
 Assistant Engineer (CPHC/HWC)
 National Health Mission
 Mizoram : Aizawl



SLAB (BOTTOM REINFORCEMENT)

SLAB THICKNESS : 150 mm

PROJECT:
**MIZORAM
 HEALTH
 SYSTEM
 STRENGTHENING
 PROJECT**

TITLE :
**PROPOSED CMO
 OFFICE BUILDING
 AT HNAHATHIAL**

SHEET TITLE :
SLAB DETAILS

SHEET No: SD/16

DATE : 5/10/2020

REVISION No : 1

Date of Revision:
10/12/2020

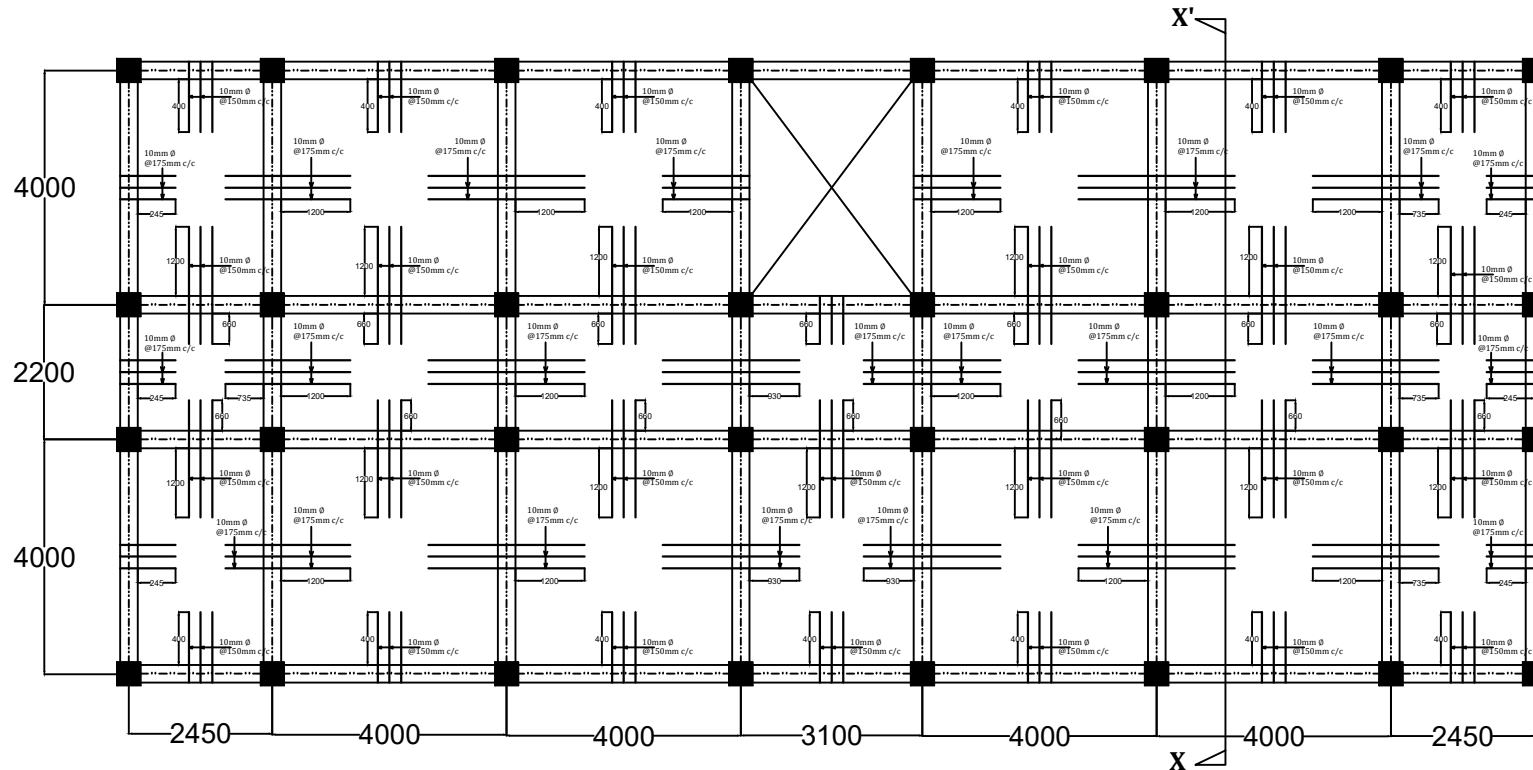
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**All dimensions are in
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NOTE :
**Please refer Sheet
 no : SD/21**

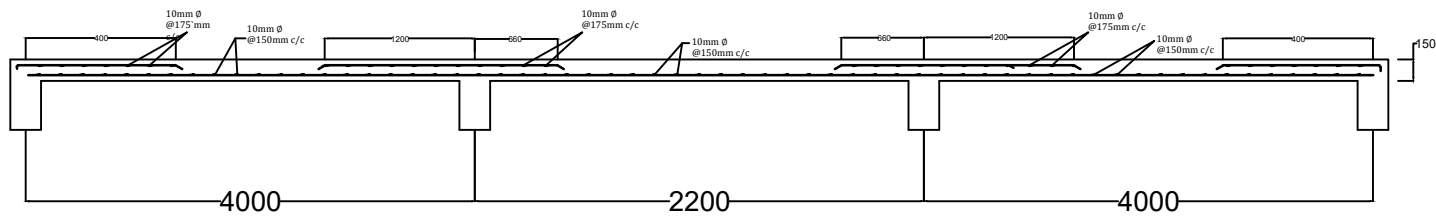
Design By :
 ROZAMPUIA
 STRUCTURE ENGINEER

Drawing By :
 (C ZOTHANTLUANGA)
 Assistant Engineer (CPHC/HWC)
 National Health Mission
 Mizoram : Aizawl



SLAB (TOP REINFORCEMENT)

SLAB THICKNESS : 150 mm



SECTION @ X-X'

PROJECT:

**MIZORAM
 HEALTH
 SYSTEM
 STRENGTHENING
 PROJECT**

TITLE :

**PROPOSED CMO
 OFFICE BUILDING
 AT HNAHTHIAL**

SHEET TITLE :

DETAILS OF SLAB SECTION

SHEET No: SD/17

DATE : 5/10/2020

REVISION No : 1

Date of Revision:

10/12/2020

SCALE : Not to Scale

**All dimensions are in
 mm**

NOTE :

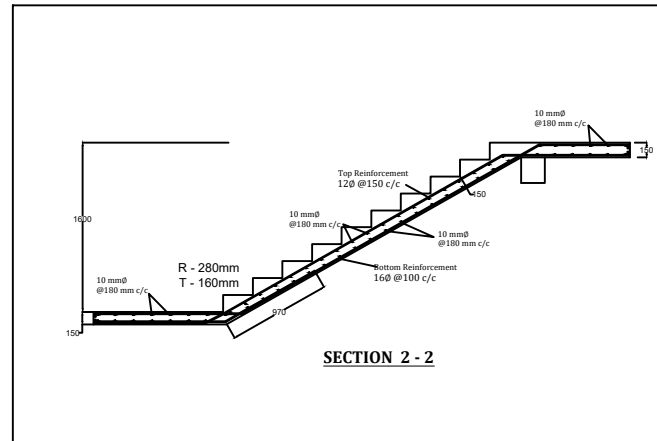
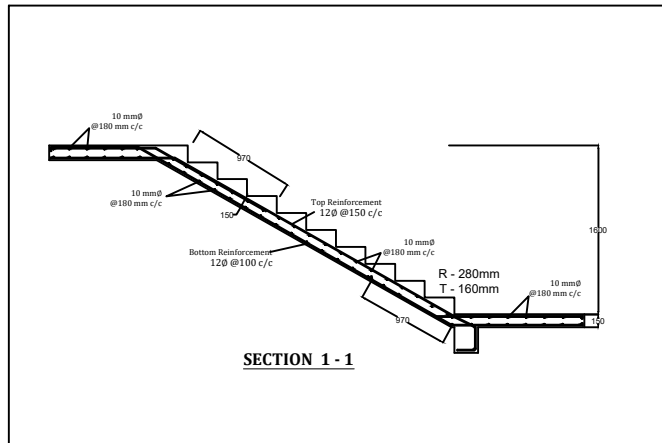
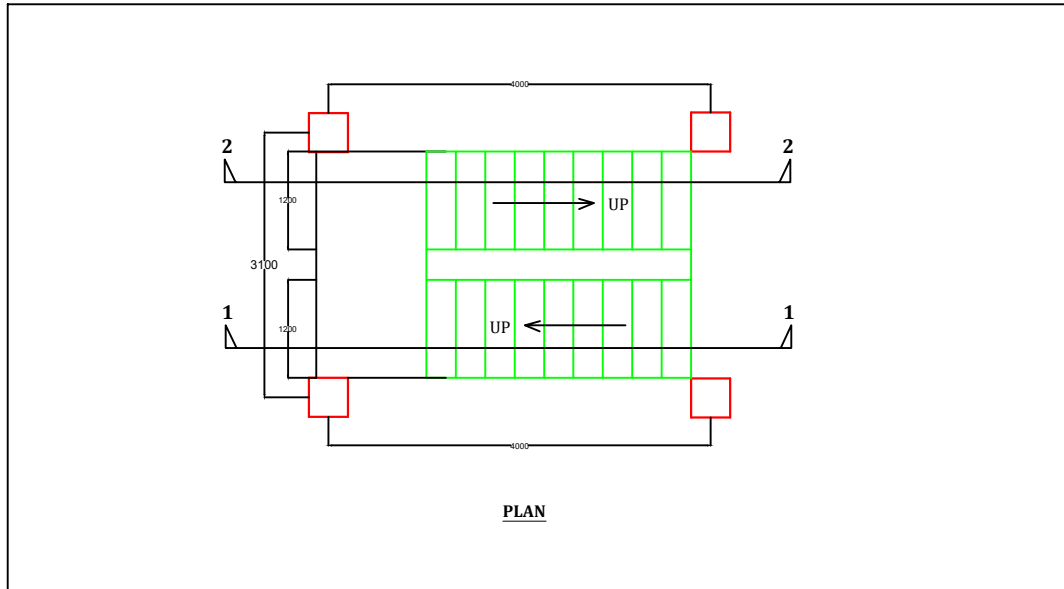
**Please refer Sheet
 no : SD/21**

Design By :

ROZAMPUIA
 STRUCTURE ENGINEER

Drawing By :

(C ZOTHANTLUANGA)
 Assistant Engineer (CPHC/HWC)
 National Health Mission
 Mizoram : Aizawl



PROJECT:
**MIZORAM
 HEALTH
 SYSTEM
 STRENGTHENING
 PROJECT**

TITLE :
 PROPOSED CMO
 OFFICE BUILDING
 AT HNAHTHIAL

SHEET TITLE :
 DETAILS OF STAIRS

SHEET No: SD/18

DATE : 5/10/2020

REVISION No : 1

Date of Revision:
10/12/2020

SCALE : Not to Scale

**All dimensions are in
 mm**

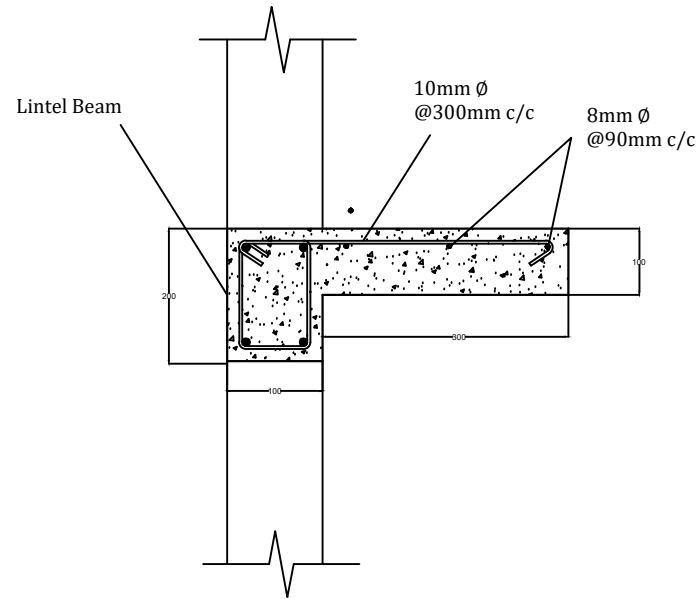
NOTE :
**Please refer Sheet
 no : SD/21**

Design By :

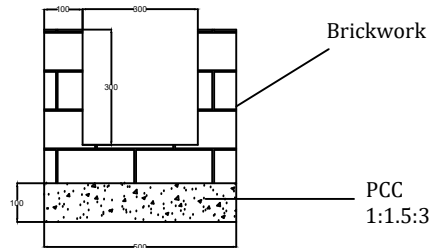
ROZAMPUIA
 STRUCTURE ENGINEER

Drawing By :

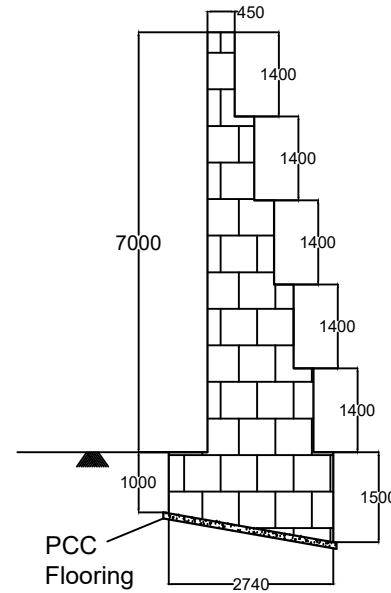
(C ZOTHANTLUANGA)
 Assistant Engineer (CPHC/HWC)
 National Health Mission
 Mizoram : Aizawl



DETAILS OF CHAJJA



SIDE DRAIN SECTION



RETAINING WALL SECTION

PROJECT:
**MIZORAM
 HEALTH
 SYSTEM
 STRENGTHENING
 PROJECT**

TITLE :
**PROPOSED CMO
 OFFICE BUILDING
 AT HNAHTHIAL**

SHEET TITLE :
**DETAILS OF CHAJJA, SIDE
 DRAIN, RETAINING WALL**

SHEET No: SD/19

DATE : 5/10/2020

REVISION No : 1

Date of Revision:
10/12/2020

SCALE : Not to Scale

**All dimensions are in
 mm**

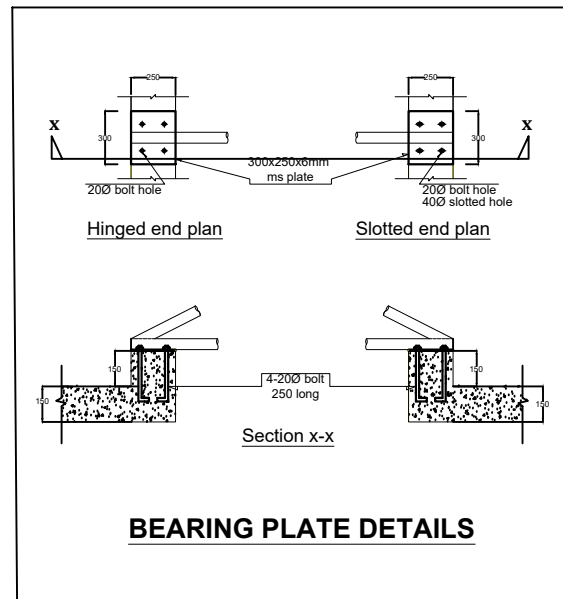
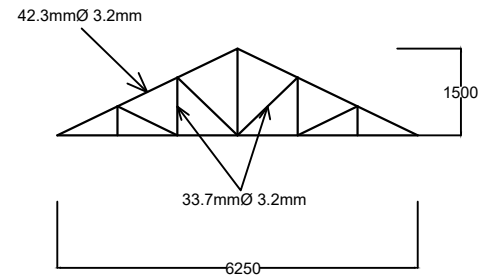
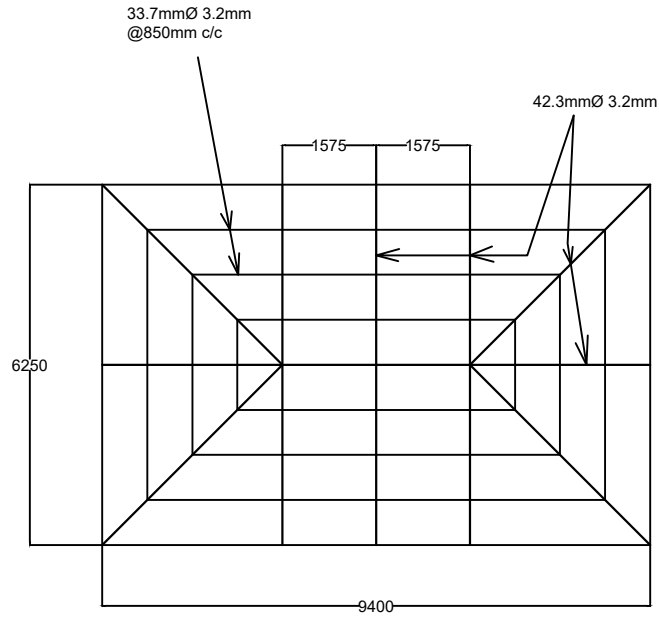
NOTE :
**Please refer Sheet
 no : SD/21**

Design By :

ROZAMPUIA
 STRUCTURE ENGINEER

Drawing By :

(C ZOTHANTLUANGA)
 Assistant Engineer (CPHC/HWC)
 National Health Mission
 Mizoram : Aizawl



BEARING PLATE DETAILS

PROJECT:

**MIZORAM
HEALTH
SYSTEM
STRENGTHENING
PROJECT**

TITLE :

**PROPOSED CMO
OFFICE BUILDING
AT HNAHTHIAL**

SHEET TITLE :

DETAILS OF TRUSS

SHEET No: SD/20

DATE : 5/10/2020

REVISION No : 1

Date of Revision:

10/12/2020

SCALE : Not to Scale

**All dimensions are in
mm**

NOTE :

**Please refer Sheet
no : SD/21**

Design By :

ROZAMPUIA
STRUCTURE ENGINEER

Drawing By :

(C ZOTHANTLUANGA)
Assistant Engineer (CPHC/HWC)
National Health Mission
Mizoram : Aizawl

GENERAL NOTES

1. GENERAL :

- 1.1 Please do not scale the drawings. Work to written dimensions only.
- 1.2 All dimensions are in millimetres unless otherwise stated.
- 1.3 These notes are to be followed in conjunction with construction drawings and the specifications for civil and structural works.
- 1.4 Drawings shall be read in conjunction with architectural drawings.
- 1.5 Number of reinforcement bars shall not be counted from the drawings.
- 1.6 Structural design is done based on architectural drawing.

2. ABBREVIATIONS AND SYMBOLS :

- | | | | |
|-----|----------------|---|------------------------------------|
| 1. | F | : | Footings. |
| 2. | C | : | Columns. |
| 3. | B | : | Beams. |
| 4. | SBC | : | Safe Bearing Capacity of Soil. |
| 5. | HYSD | : | High Yield Strength Deformed bars. |
| 6. | MS | : | Mild Steel bars. |
| 7. | PCC | : | Plain Cement Concrete. |
| 8. | RCC | : | Reinforced Cement Concrete. |
| 9. | IS | : | Indian Standard. |
| 10. | kN | : | Kilo Newton. |
| 11. | m ³ | : | Cubic Metre. |
| 12. | m | : | Metre. |
| 13. | mm | : | Millimetre. |
| 14. | L | : | Development length of bars. |
| 15. | Db | : | Diameter of bar. |
| 16. | dia | : | Diameter. |
| 17. | > | : | Greater than. |
| 18. | >/ | : | Not greater than. |
| 19. | @ | : | At the rate of. |
| 20. | c/c | : | Centre to centre. |

3. DESIGN CONSIDERATIONS:

- 3.1 FOUNDATIONS:
 - 3.1.1 The SBC of foundation soil is 263.58 kN/m², designs were done accordingly.

3.2 LOADS:

- 3.2.1 Dead Loads: The dead loads considered for structural design are weight of slabs, beams, columns, walls and floor finishes. Thickness and materials of walls and floor finishes are taken as per architectural drawing and specifications. Unit weight of materials are taken as below:-
Reinforced Cement Concrete - 25 kN/m³.
Brick Masonry - 20 kN/m³.
Floor Finishes - As per unit weight of the material.
- 3.2.2 Live Loads: Imposed loads on floors due to various services and occupancy of rooms are taken as per IS : 875 (Part - 2) - 1987.
- 3.2.3 Dynamic Loads: Dynamic loads due to earthquake forces are taken as per IS : 1893 (Part - 1) - 2002.
- 3.2.4 Wind Loads & Snow Loads: Wind loads and snow loads are not considered as earthquake load is more prominent.
- 3.2.5 Combination of Loads: Combination of loads (for Limit State Design) are taken as per IS : 1893 (Part - 1) - 2002 in the analysis and design.

3.3 ANALYSIS AND DESIGNS:

- 3.3.1 Analysis and design are carried out using Staadpro Software.
- 3.3.2 Dynamic analysis is done using Response Spectrum Method based on IS : 1893 (Part - 1) - 2002.
- 3.3.3 All sections are designed using Limit State Design Method.
- 3.3.4 Detailments of reinforcements are done as per IS : 13920 - 1993, IS : 456 - 2000, IS : 4326 - 1993 and IS : 2502 - 1963.

4. GENERAL SPECIFICATIONS :

4.1 EARTHWORK AND FOUNDATIONS:

- 4.1.1 Just prefer to laying PCC, the final 400 depth of soil shall be excavated and recompacted to the optimum density.
- 4.1.2 PCC 1:1.5:3 200mm thick shall be laid for levelling course below foundations.

- 4.1.3 Back filling shall be done in layers not exceeding 200mm thickness.
- 4.1.4 All works below ground level shall be executed in dry conditions.
- 4.1.5 Minimum depth of foundation shall be 1.8m below firm ground.

4.2 MATERIALS :

- 4.2.1 All RCC shall be of controlled grade in accordance with IS : 456 - 2000.
- 4.2.2 Minimum grade of concrete shall be M20.
- 4.2.3 Grade of Steel shall be TMT conforming to IS:14786-1979
- 4.2.4 Mild Steel bars if specified shall conform to IS : 432.
- 4.2.5 All bars shall be sheared, flame cutting shall not be permitted. The bars shall be bent cold.

4.3 STRUCTURES :

- 4.3.1 Clear covers shall be maintained as per IS : 456 - 2000 as below :-

Foundations	-	50mm
Columns	-	40mm
Beams	-	25mm
Slabs	-	15mm
Staircases	-	15mm
Chajjas, etc.	-	15mm
- 4.3.2 Lap Splices shall be staggered in such a way that not more than 50% of bars are lapped at one particular section.
- 4.3.3 Lap length of reinforcement bars shall not be less than the following :-

Footings	-	30 x dia. of bar.
Columns	-	24 x dia. of bar.
Beams	-	30 x dia. of bar.
Slabs	-	30 x dia. of bar.
- 4.3.4 Anchorage length of bars shall be maintained as in the drawings.
- 4.3.5 Extension of Hoop length of beam stirrups and lateral ties of column shall be maintained as in the drawings.

PROJECT:

**MIZORAM
HEALTH
SYSTEM
STRENGTHENING
PROJECT**

TITLE :

**PROPOSED CMO
OFFICE BUILDING
AT HNAHTHIAL**

SHEET TITLE :

GENERAL NOTES

SHEET No: SD/21

DATE : 5/10/2020

REVISION No : 1

Date of Revision:

10/12/2020

SCALE :

Not to Scale

Design By :

ROZAMPUA
STRUCTURE ENGINEER

Drawing By :

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Mizoram : Aizawl