### 3.14 2.79 1 **BED ROOM BED ROOM** 3.23 3.14 X 3.06 2.79 X 3.06 W1 W1 1.67 0.40 S D2 wc O D1 LOBBY 1.26 X 1.02 2.1 3.00 X 2.16 KITCHEN -3.001.56 X 2.16 BATH € D2 1.26 X 1.03 1.56 1.26 D<sub>1</sub> 10.44 0.24 0.28 0.90 -

### FLOOR PLAN DETAIL

#### Schedule of Door & Windows

Name	Lintel	Width	Sill Ivl	Description
D1	2.10	0.90		
D2	2.10	0.75		PVC DOOR
W1	2.10	1.50	0.90	
W2	2.10	0.90	0.90	
V	2.10	0.60	1.65	

### NOTES:-

Clear height of DU = 2.85 m

Chajja projection over windows is 450 mm.

\* All the Dimensions in m

#### NOTES:-

- All dimensions are in m, unless wherever specified diameter of the bars shown in mm
- Dimensions are not to be scaled out, only written dimensions may be taken as correct.
- Nominal mix concrete 1:1.5:3 according IS 456 Clause 9.3
- The reinforcement shall be of high strength deformed steel bars conforming to IS:1786-2008
- Second class brick must be used
- Mortar 1:5 according to Table 3 IS 4326-2013
- All walls are one Brick Thick Masonry walls or Autoclaved Aerated Block of Class 7.5
- Any discrepancy in the structural drawings should be correlated with architectural drawing.
- Refer DWG-2 to DWG-4 for earthquake resistance and structural detail.

DRG. No. - NIT/CED/2017/PMAY -OP1-RCC-FR-ZIV/DWG-1

NATIONAL INSTITUTE OF TECHNOLOGY HAMIRPUR

BUILDING NAME: PMAY HFA OPTION 1 RCC BUILDING FLAT ROOF ZONE IV

DRAWING TITLE: FLOOR PLAN

DESIGNED BY: Dr. Pardeep Kumar Dr. Hemant Kumar Vinayak

Dr. Hemant Kumar Vinayak Assistant Professor

Department of Civil Engineering National Institute of Technology, Hamirpur -177005 (H.P.) Dr. Pardeep Kumar
Associate Professor (Structural Engg.)
Civil Engineering Department
NIT, Hamirpur (H.P.)-177005

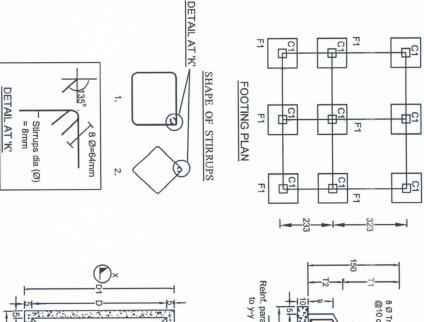
## Column 2 8Ø @100mm C/C "A" 8Ø@ 150mm C/C "B" Transverse reinforcement Footing to, roof level Sectional plan with longitudinal reinf. 4-16Ø + 4-12Ø -331

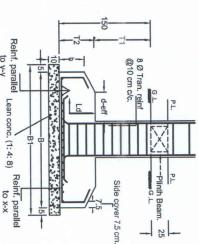
No SI

-

8Ø @ 175mm C/C	25 20 8Ø @ 175mm C/C 8Ø @ 175mm C/C	20	25	30	145 X 145	35 X 35   135 X 135   145 X 145	35 X 35	F1	<del>. `</del>
Spacing of reinf. parallel to y-y	Spacing of reinf. parallel to x-x		d-eff.	Thickness of footing T2	Size of pit (B1XD1)	Size of Size of column footing (bxd) (BXD)	Size of column (bxd)	Name of column footing (bxd)	No.

CHART SHOWING DETAIL OF ISOLATED FOOTING REINFORCEMENT





Refer is 13920:2016 for following detail:-

All Column Size are 35cm x 35cm and Grade is M20

-297

T

"B"=Spacing of hoops "A"=Closer ties=Spacing of hoops

hc=Floor height.

Sc=Special confining reinf

60

>hc/4

\_Ld+(10xdia of bar)

Joint reinf



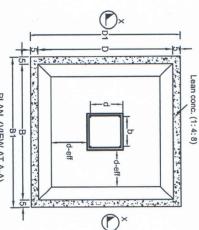


Dr. Hemant Kumar Vinayak

Department of Civil Engineering

National Institute of Technology,

Hamirpur -177005 (H.P.)



Closer Ties "A"

Ld+(10Xdia of bar)

≥hc/4

60 H

beams framing into a

reinft.

Confined joint with four sides confining

Special confining reinft Transverse rein

> reinf. Transverse

님

TYPICAL SKETCH AT COLUMN JUNCTION SHOWING SPLICES AND REINFORCEMENT DETAIL IN COLUMNS

COLUMN



### OPTION 1 **FLAT ROOF** RCC BUILDING PMAY HFA BUILDING NAME: NATIONAL INSTITUTE OF TECHNOLOGY HAMIRPUR

DESIGNED BY: Dr. Pardeep Kumar Dr. Hemant Kumar Vinayak

# NOTES:-

- All dimensions are in cm, unless wherever specified diameter of the bars shown in mm.
- Dimensions are not to be scaled out, only written dimensions may be taken as correct.
- Safe bearing capacity for design of footing is considered at 15 T/m2 to be ensured at site.
- Grade of concrete M:20.
- The reinforcement shall be of high strength deformed steel bars conforming to IS:1786-2008. deformed conforming
- Minimum clear cover to the reinforcement including stirrups:-
- (i) Beam 25 mm
- (ii) Column 40 mm
- (iii) Footing 50 mm
- Lap length and development length (La)
- (i) For 16 mm  $\emptyset$  = 800
- (ii) For 12 mm  $\emptyset$  = 600
- (iii) for 8 mm  $\emptyset$  = 400
- The concrete shall be mechanically mixed and vibrated with water- cement ratio not exceeding 0.55.

X- SECTION AT X-X

- Incase the proposed building is at probable landslide prone area the soil should be retained properly with adequate retaining wall to prevent differential settlement of the foundation.
- should be correlated with architectural drawing. Any discrepancy in the structural drawings

DRG. No. - NIT/CED/2017/OP-1 RCC-FR Z-IV/DWG-2

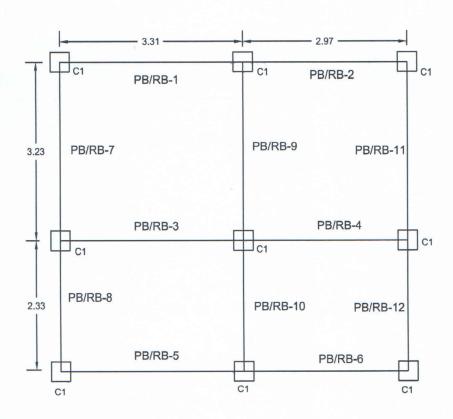
DETAIL OF FOOTINGS & CLOUMN

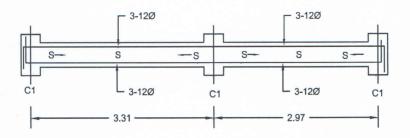
Civil Engineering Department NIT, Hamirpur (H.P.)-177005 Associate Professor (Structural Engg.)

Parded Kumar

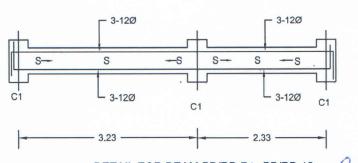
### DETAILED DRAWING OF REINFORCEMENT OF BEAMS AT PLINTH/ROOF LEVEL

S - 8 mm dia bars @ 100 mm c/c





DETAIL FOR BEAM PB/RB-1 to PB/RB-6



DETAIL FOR BEAM PB/RB-7 to PB/RB-12

### NOTES:

- All dimensions are in meters,unless wherever specified diameter of the bars shown in mm.
- Dimensions are not to be scaled out, only written dimensions may be taken as correct.
- Size of Beam is 250 X 250 mm.
- Grade of concrete shall be M20.
- All reinforcement shall be of grade Fe 415 confirming to IS:1786-2008.
- Clear Cover to reinforcement shall be 25 mm.
- Bending and fixing of reinforcement shall be as per is:2502-1963.
- Lap length and anchorage length shall be 57 times the bar diameter
- Further refer notes from the drawing of 'Detail' of footings'.

DRG, No. - NIT/CED/2017/OP-1 RCC-FR Z-IV/DWG-3

NATIONAL INSTITUTE OF TECHNOLOGY HAMIRPUR

BUILDING NAME: PMAY HFA OPTION 1 RCC BUILDING FLAT ROOF ZONE IV

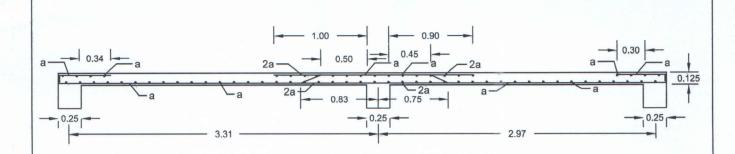
DETAIL OF PLINTH /ROOF BEAM

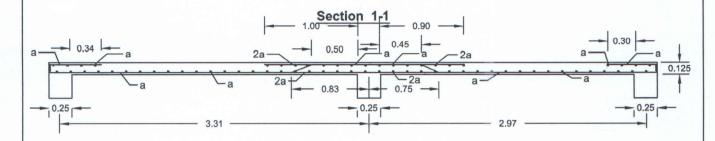
DESIGNED BY: Dr. Pardeep Kumar Dr. Hemant Kumar Vinayak

Dr. Hemant Kumar Vinayak

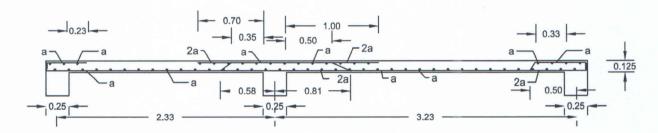
Assistant Professor
Department of Civil Engineering
National Institute of Technology,
Hamirpur -177005 (H.P.)

Dr. Pardep Kumar
Associate Professor (Structural Engg.)
Civil Engineering Department
NIT, Hamirpur (H.P.)-177005

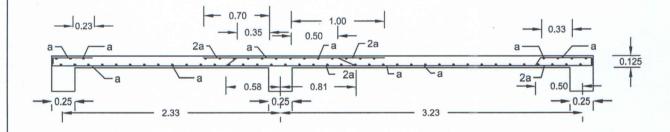




### Section 2-2



### Section 3-3



### Section 4-4

be 20mm.

• All dimensions are in meter National Institute of Technology, Hamirpur -177005 (H.P.)

SCHEDULE OF BARS a. 8 mm Ø @ 150 mm c/c

Clear cover for slab should Assistant Professor

Department of Civil Engineering

Dr. Pardeep Kumar Associate Professor (Structural Engg.

Civil Engineering Department NIT, Hamirpur (H.P.)-177005

DRG. No. - NIT/CED/2017/PMAY -OP1-RCC-FR-ZIV/DWG-4

NATIONAL INSTITUTE OF TECHNOLOGY HAMIRPUR

**BUILDING NAME:** PMAY HFA OPTION 1 RCC BUILDING FLAT ROOF ZONE IV

**DRAWING TITLE: SLAB DETAILS** 

**DESIGNED BY:** Dr. Pardeep Kumar Dr. Hemant Kumar Vinayak