CED-I (PR. 2)

(AUTOCAD)

EXPT. NO	TOPIC
1.	2D Drawings of Doors / windows (PG NO-223)
2.	2D Drawings of (PG NO-179) Footings / Beam (PG NO-162)
3.	2D Drawing of staircase (PG NO-154)
4.	2D, Plan & elevation of flat roof residential Building (PG NO-39)
5.	2D, Plan & elevation of inclined roof residential building (PG NO-64 & 65)
6.	Line plan (PG NO-84) of School / ~~Hostel~~ / ~~Dispensary~~ ~~Building~~ (primary - Heath centre) (PG NO-88)

List of EXPT?s are designed as per SCTE&VT Curriculum 3RD Semester

Civil Engineering Drawing-I

Ref. BOOK: Civil Engineering Drawing, M Chakraborti

18/08/2023

(Subject Teacher)

Dept of Civil Engg.

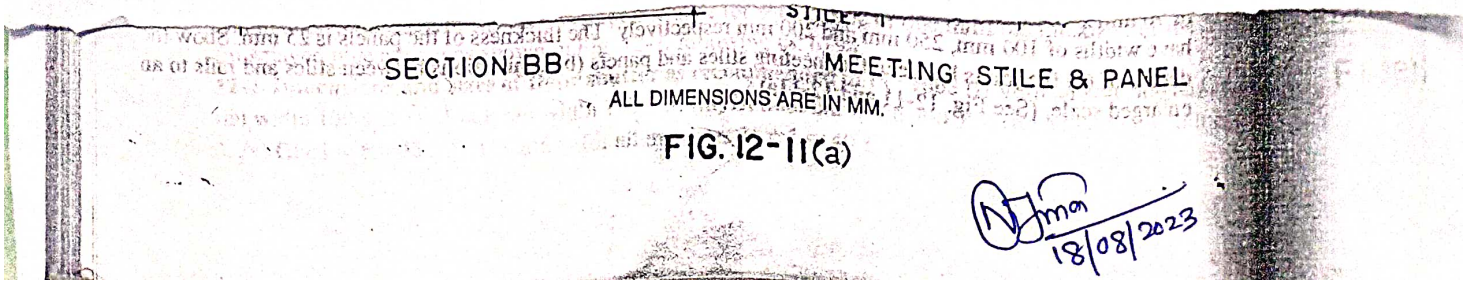
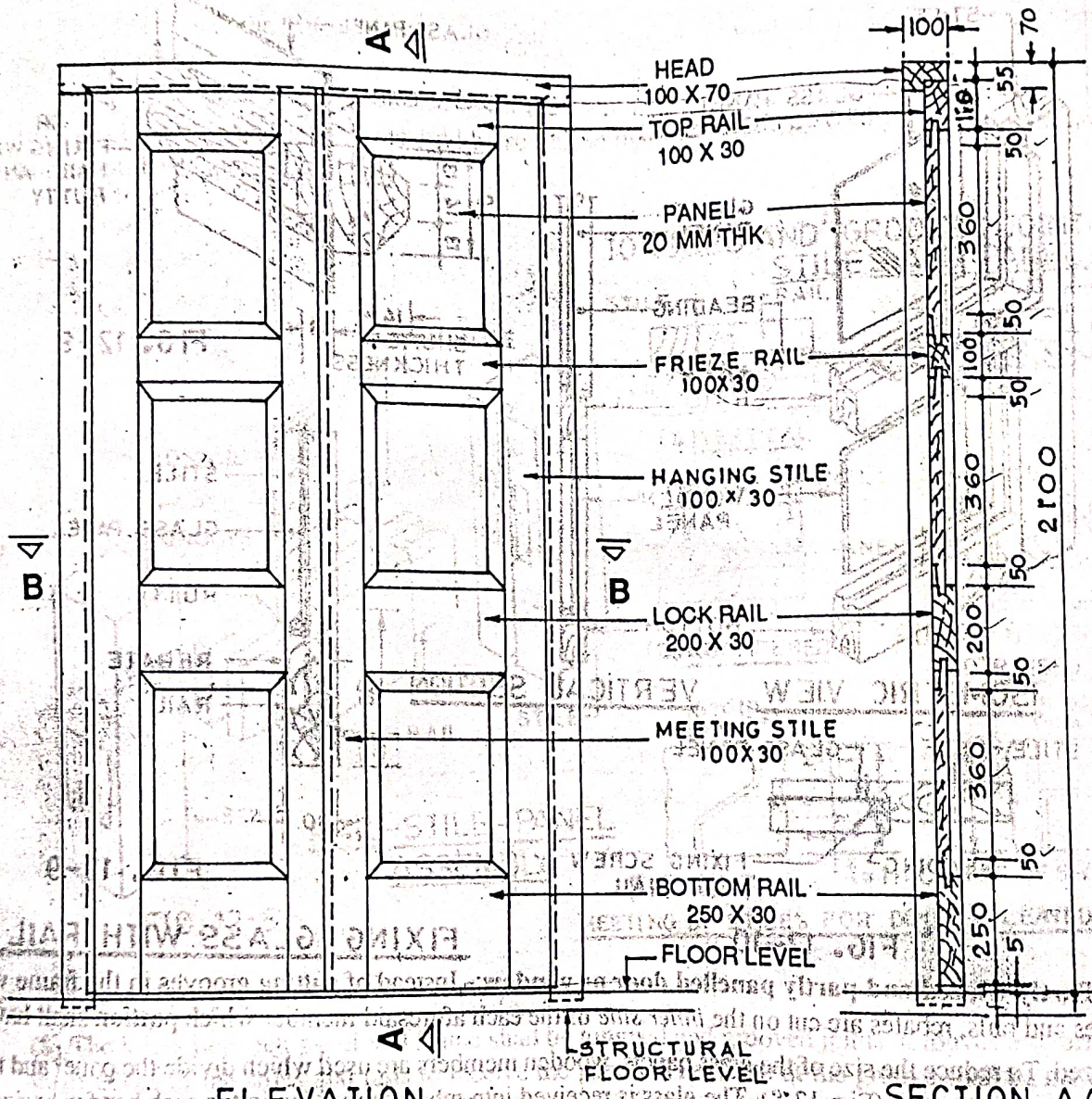


FIG. 12-11(a)

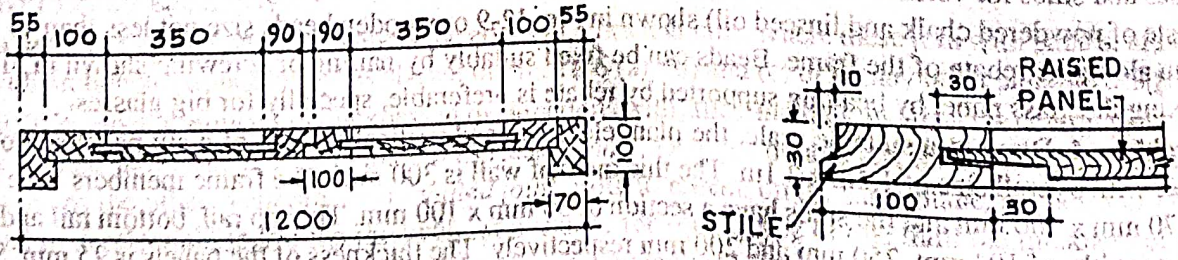
18/08/2023

EXPT NO: 01 / CED-I

FULLY PANELLED DOOR (GROUP-I)



ELEVATION SECTION AA



SECTION BB MEETING STILE & PANEL

ALL DIMENSIONS ARE IN MM.

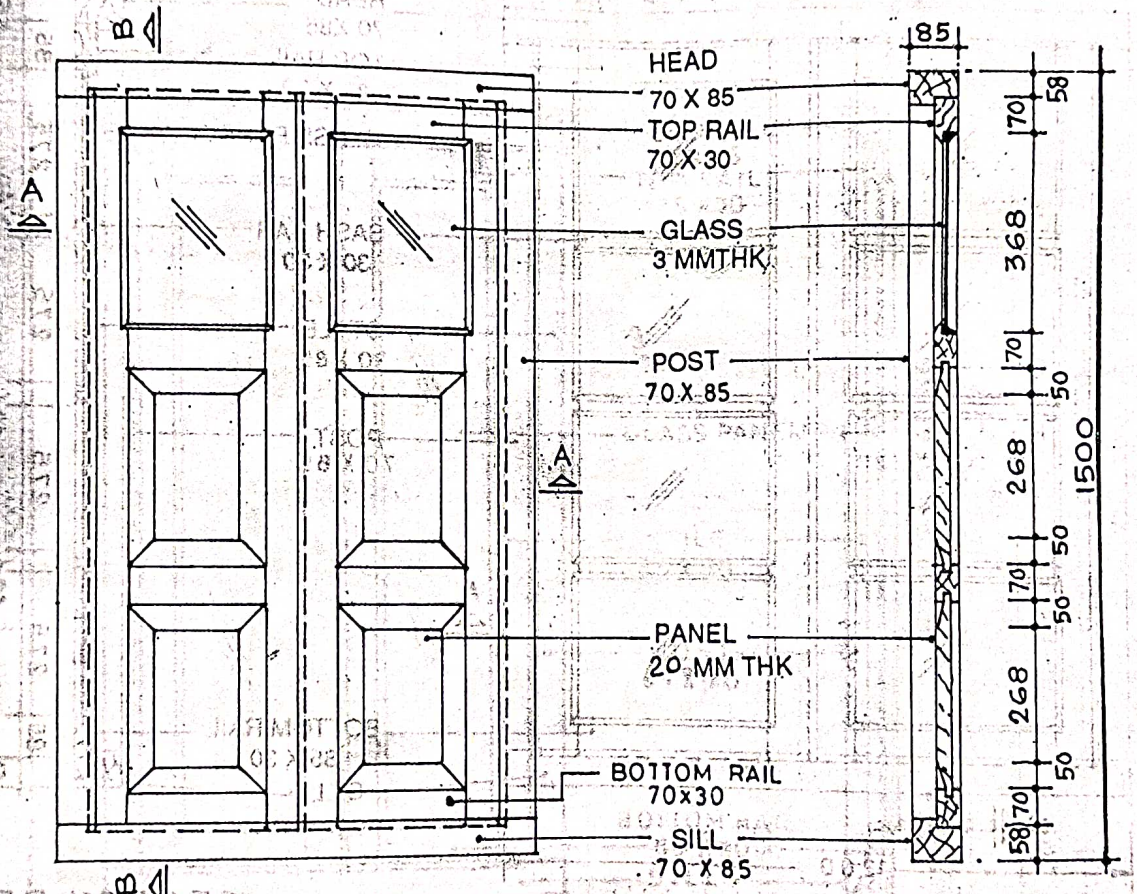
FIG. 12-11(a)

18/08/2023

EXPT. NO: 01 | CED-I

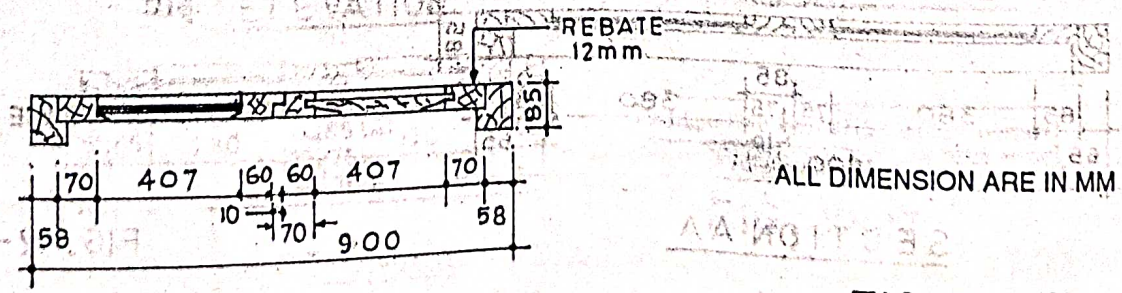
Problem-8. Draw to a suitable scale the front elevation, sectional elevation and sectional plan for a teakwood panelled window 1/3rd glazed and 2/3rd raised panelled for an opening 900 mm x 1500 mm., the window frame being 85 mm x 70 mm. The rails and stiles have a section of 30 mm x 70 mm.

$\frac{1}{3}$ RD. GLAZED $\frac{2}{3}$ RD PANELLED WINDOW SHUTTER



ELEVATION

SECTION BB



SECTION AA

ALL DIMENSION ARE IN MM

FIG. 12-15

18/08/2023

Expt. No: 02 / CED-I

Problem-12. Draw a neat dimensional sketch for a rectangular R.C. Column footing showing therein maximum typical details.

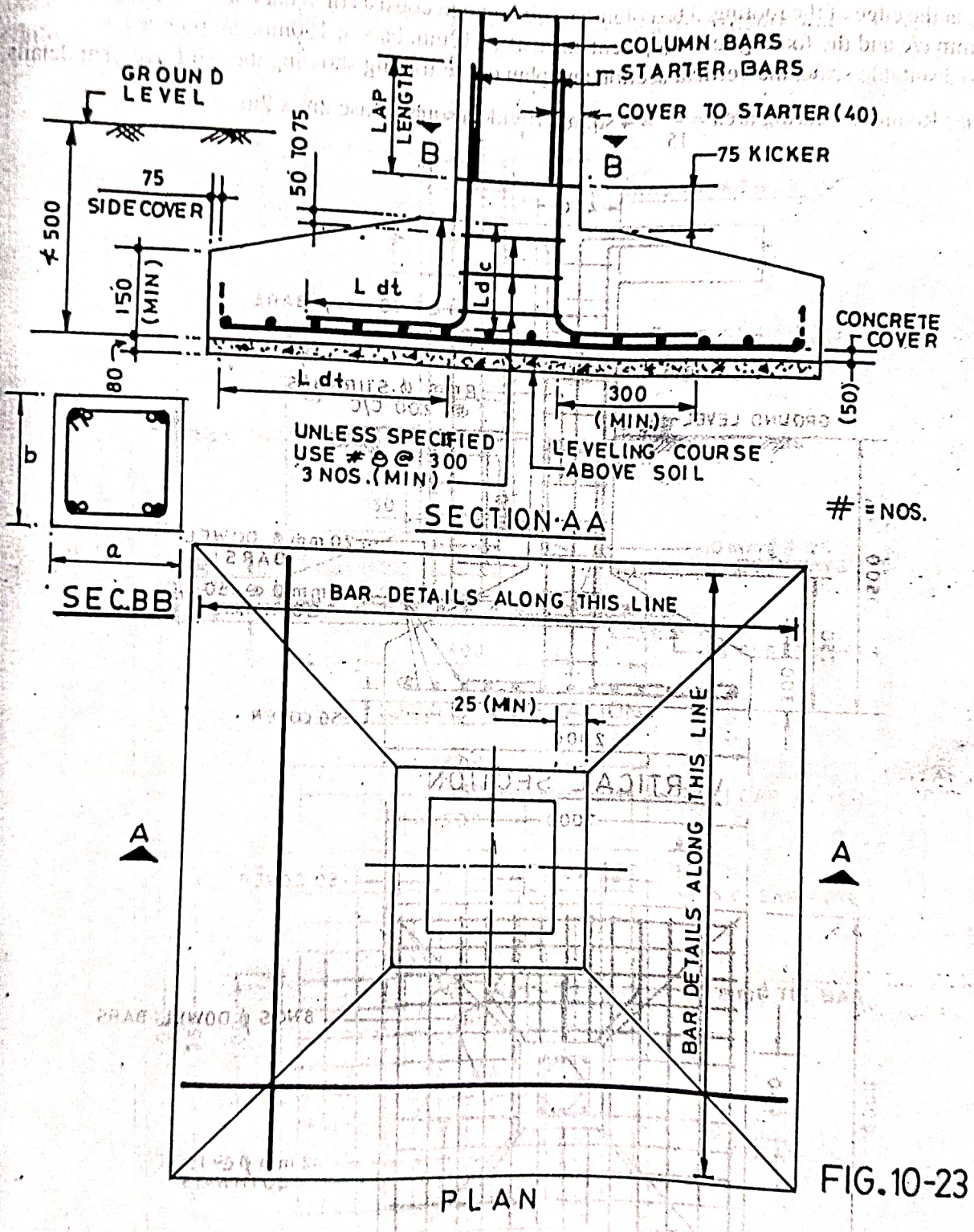


FIG. 10-23

TYPICAL DETAILS OF A COLUMN FOOTING

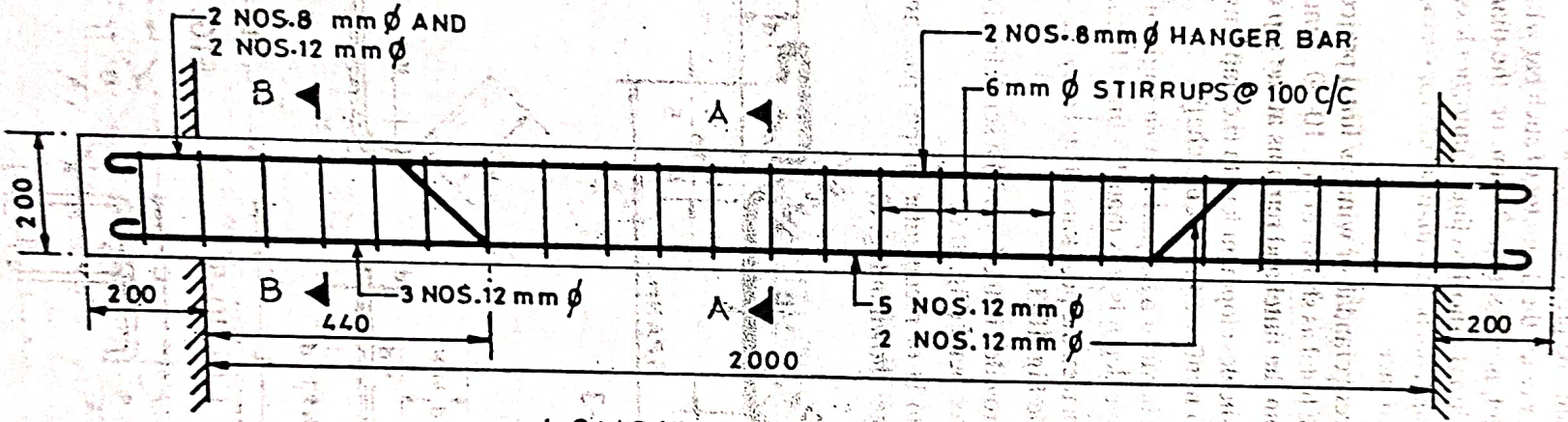
Ldt = Effective development length considering tension.

Ldc = Effective development length considering compression

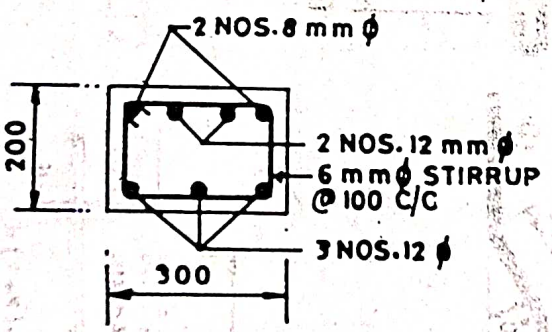
Column Tusk

EXP. NO: 02/CED-I (GROUP-II)

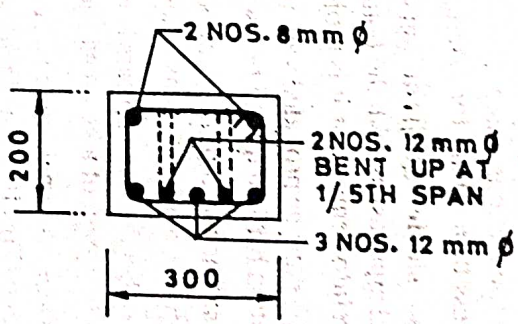
Problem–1. A 200 mm thick R.C.C. lintel which has been provided over a 2000 mm wide door consists of 5 numbers of 12mm dia. tensile rods. Out of these, two rods have been bent up at $\frac{1}{5}$th span distances from either support. Two legged stirrups of 6mm dia. rods have been provided at an interval of 100 mm. Two hanger bars of 8mm dia. have also been provided at the top. Draw the following views (a) Longitudinal section; (b) C/S at mid span; (c) C/S at support.



LONGITUDINAL SECTION



CROSS SECTION AT SUPPORTS 'B-B'



CROSS SECTION AT MIDSPAN 'A-A'

ALL DIMENSIONS ARE IN MM

EXPT. NO:- 03/CED

GROUP (I & II)

9-6. Handrails:- According to IS:4912-1968 a stair railing shall be provided with the vertical height not more than 85 cm nor less than 75 cm from the upper surface of top rail to surface of tread in the line with face at forward edge of tread.

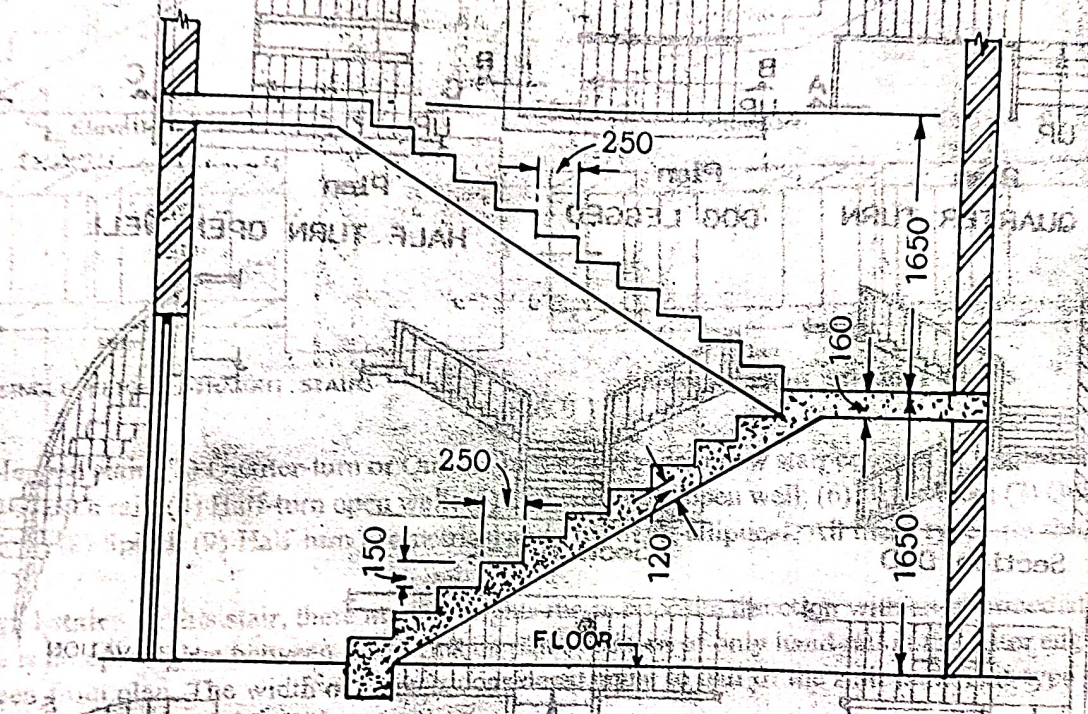
Problem-1. Sketch the plan and elevation of a dog-legged staircase with the following details: No. of flights : 2; No. of steps in each flight : 10; Rise of each step : 150 mm; Tread : 250 mm; Width of flight : 100 mm; Height of each flight : 1650 mm. Any missing data may be suitably assumed.

Calculations to draw the sketch :-

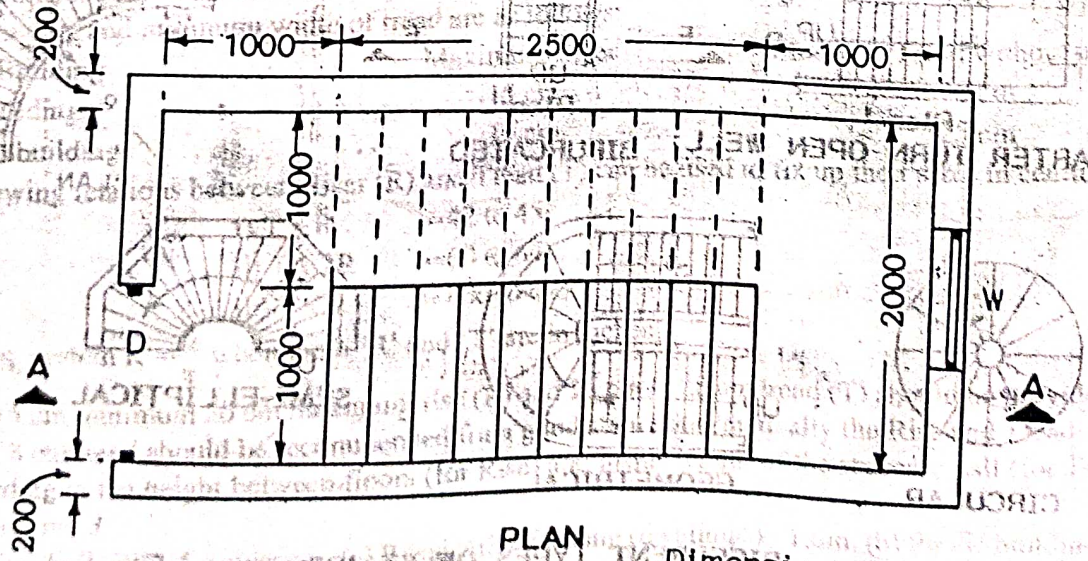
Inside measurement of the stair hall : (a) Width =Length of landing =2 x 1000 =2000 mm

(b) Length =Total treads in one flight +2 x width of landings =10 x 250 mm +2 x 1000 mm =4500 mm

The sketch is now drawn in Fig. 9-3.



ELEVATION ON SECTION AA



PLAN

FIG 9-3

Dimensions are in mm.

EXPT. NO:-04/CED I GROUP (I & II)

RESIDENTIAL BUILDING

Problem - 2. A small residential building consists of two rooms with front verandah and attached latrine at the back as shown in the line diagram [Fig. 4-7(A)]. The following data are given below :

(i) Rooms 4200 x 3500, 3600 x 4500 (inside measurements);
(ii) Front verandah, 1000 wide (inside);
(iii) Plinth height 450 from G. L. ;
(iv) Thickness of main wall 200;
(v) Height of lintel 2000 from finished floor level;
(vi) Ceiling height 3000 ;
(vii) Roof slab 112 ;
(viii Blocking course 200 ;
(ix) Door and Window :- Each room consists of 3 windows 1000 x 1500 and one door 1000 x 2000 at the front with one additional door 750 x 2000 for the latrine. Latrine consists of two windows 600 x 600.
(x) Chajja over window may be provided.

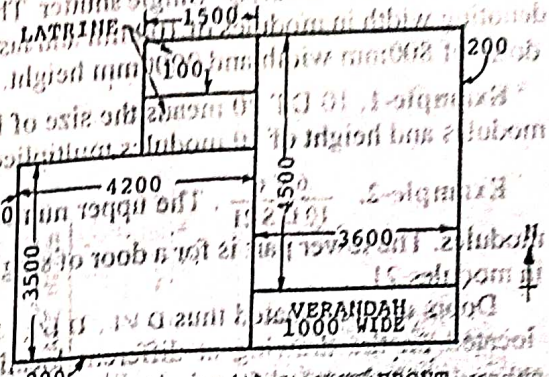
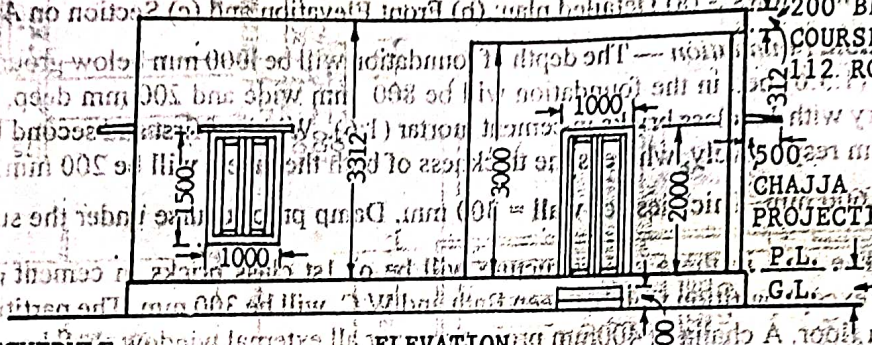


FIG. 4-7 (A)

Draw to scale 1:50 the plan and front elevation giving dimensions. Assume any missing data.



SCHEDULE

DOORS :
D - 1000x2000
D1 - 750x2000

WINDOWS :
W - 1000x1500
W1 - 600x 600

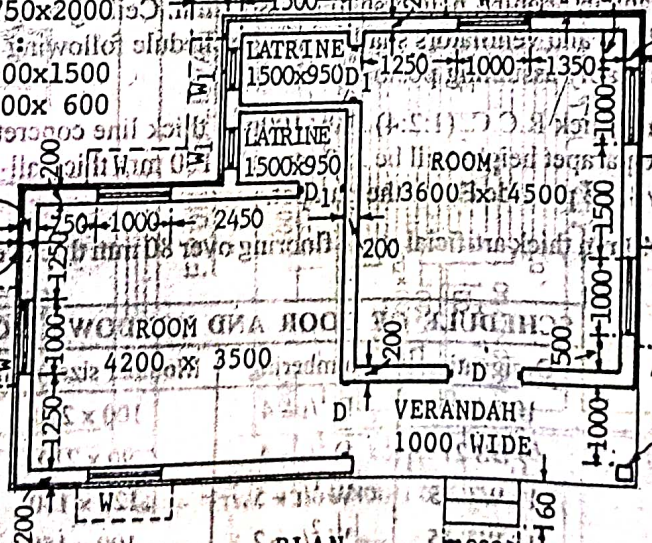


FIG. 4-7(B)

DIMENSIONS ARE IN MMS.

EXPT. NO:-05/CED-I

GROUP (I & II)

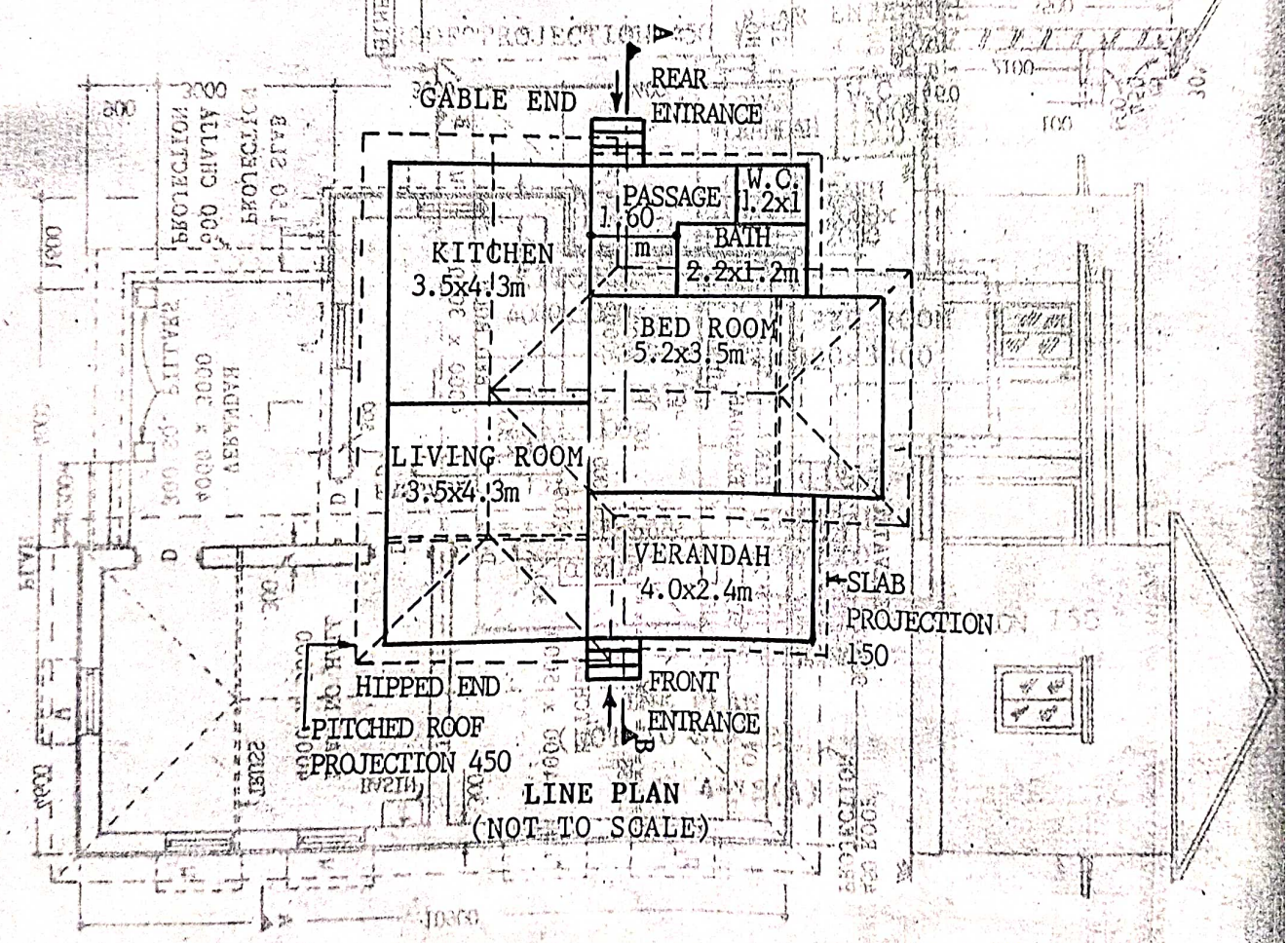
Problem -14. A line plan of a residential building is shown in Fig. No. 19(A) following data may be used for preparing a drawing of the building :- *(All dimensions are in mm)*

(a) Hard Murum is available at a depth of 1000 below G.L. (b) Plinth height 450. (c) P.C.C. (1:4:8) bed 200 thick is provided below the plinth walls. (d) U.C.R. masonry in c.m. (1:6) is provided for foundation and plinth. (e) B.B. masonry in c.m. (1:6) 300 thick for main walls and 200 thick internal walls for bath and W.C. is provided in superstructure. (f) Wall height from floor level to bottom of tie beam of pitched roof is 4500. Pitched roof projection 450 outside the wall. (g) R.C.C. slab 120 thick. Projection of slab 150 outside the wall. Slab height 3000 from top of floor to bottom of slab for sanitary block and verandahs. (h) Mosaic tile flooring 20 thick over a 120 thick P.C.C. (1:4:8) bed. (i) For sanitary block white glazed tiled flooring and coloured glazed tiled dado is provided. (j) Doors and windows are provided at suitable position.

Draw following views to a suitable scale:–

(i) Plan; (ii) Front elevation ; (iii) Sectional elevation along AB ; (iv) Schedule for Doors and Windows (v) Calculate the plinth area ; (vi) Show correct position of North direction on plan.

(B.T.E. Maharastra 1991)



RIDGE PIECE
JACK RAFTERS
REEPERS (BATTENS)
R.C.C. SLAB 120 TH.
P.L.
G.L.
WALL PLATE
20TH MOSAIC TILES
120 PCC (1:4:8)
SECTION ON A-B
ALL DIMENSIONS ARE IN MM
ELEVATION
PLAN
KITCHEN 3500 x 4300
BED ROOM 5200 x 3500
BATH
W.C.
LIVING ROOM 3500 x 4300
VERANDAH 4000 x 2400
300 SQ. PILLAR
450 PITCHED ROOF PROJECTION
150 SLAB PROJECTION
600 CHAJJA PROJECTION
TRUSS
9500
8400

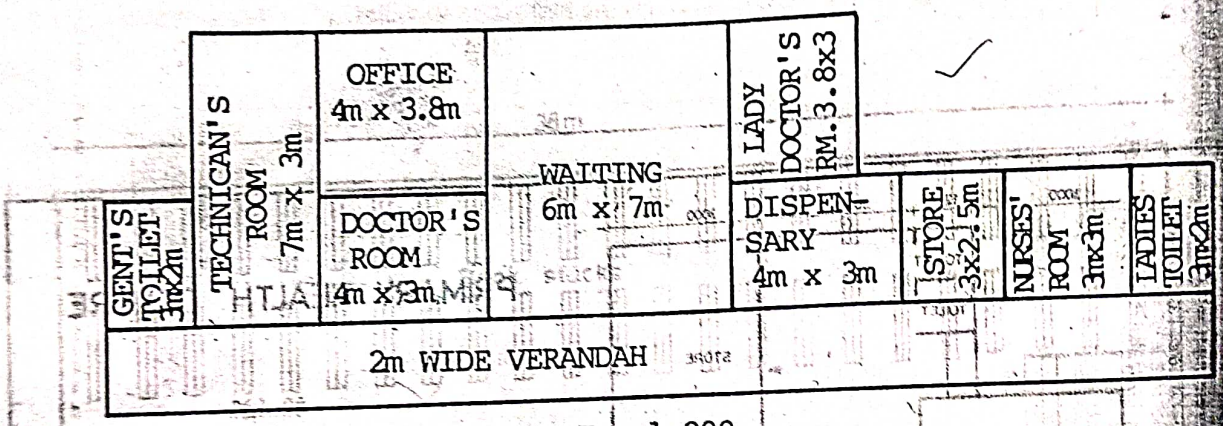
EXPT. NO :- 06/CED

PUBLIC BUILDING (GROUP–I)

Problem – 6. Health Centre :

Prepare a single line diagram for a health centre with the following requirements.

(1) Waiting hall ≅ 42m² (2) Office ≅ 15m²
(3) Doctor's room ≅ 12m² (4) Technician's Room ≅ 20m²
(5) Lady doctor's room ≅ 12m² (6) Dispensary ≅ 12m²
(7) Store ≅ 7.5m² (8) Nurse's room ≅ 9m²
(9) 2-Nos. of General toilets, one for Gents & other for Ladies (suitable). (10) Generous Verandah



SCALE – 1:200

Floor areas in the Administrative Unit (according to IS : 10905)

Sl.No.	Facility	Room Areas in sq.m	
		25 to 50 Beds	51 to 100
1.	Medical Supdt. (M.S.) with Toilet	21	21
2.	Admn. Officer	10.5	14
3.	Waiting Room	14	14
4.	Nursing Officer's room with Toilet	17.5	17.5
5.	Lavatory for Staff (Separate for male and female)	2 x 7.0	2 x 7.0
6.	Clerical Staff	5.25/Staff	5.25/Staff
7.	Stationary/Records	28	35
8.	Library–cum–Conference	–	35
9.	Medical Store	24.5	35
10.	General Store	21	35
11.	Furniture Store	21	35
12.	Surgical Store	21	35

EXPT. NO:-06/CED-I (GROUP-II)

Problem – 2. Design of a School Building :

Prepare a single line diagram for school with the following requirements

1. Entrance Hall ≅ 48m²
2. 5 Nos. of class room ≅ 45m² each
3. Sanitary block (2 Nos.) ≅ 12m²
4. Headmaster & his office ≅ 36m²
5. Staff room ≅ 24m²
6. Laboratory (2 Nos.) ≅ 72m²
7. Preparation room ≅ 12m²
8. Ladies room ≅ 24m²
9. Multipurpose Hall ≅ 20m²