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15CV54

Fifth Semester B. E. Degree Examination, December 2018
(CIVIL ENGINEERING)

COMPUTER AIDED BUILDING PLANNING AND DRAWING

Time: 3 Hours

Max. Marks: 80

Note: Answer any TWO full questions. Assume any missing data suitably.

- Q1. Prepare a working drawing for an isolated rectangular RCC column and footing has the following details:

Column size: (400 x 600) mm.

Size of footing: 2m x 3m of uniform thickness 450mm.

Depth of foundation below GL = 1.5m

Height of column to be shown above GL = 1.0m

Thickness of PCC bed in 1:3:6 = 75mm

Details of reinforcement:

Column: #8 - 16 ϕ as main bars with 2L - 8 ϕ @ 150 c/c lateral ties

Footing: Longer direction steel - 12 ϕ @ 130 c/c

Shorter direction steel - 12 ϕ @ 220 c/c

(30 Marks)

OR

- Q2. Draw plan and sectional elevation of RCC dog legged staircase for an office building which measures 3m x 5.5m. The vertical distance between the floor is 3.3m (including landing). Thickness of the floor slab is 150mm. Provide steps with tread of 300mm and rise of 150mm. Thickness of waist slab and landing slab is 150mm. Width of stair is 1.5m. Reinforcement details: main steel: 10 ϕ @ 125 c/c spacing and distribution; 8 ϕ @ 250 c/c spacing.

(30 Marks)

- Q3. Line diagram of single storey residential building is given in figure Q3. Draw to scale the following:
- Plan at sill.
 - Front elevation.
 - Section along XX

(50 Marks)

OR

- Q4. Line diagram of single storey Hospital building is given in figure Q4. Draw to scale the following:
- Plan at sill.
 - Front elevation.
 - Section along XX

(50 Marks)

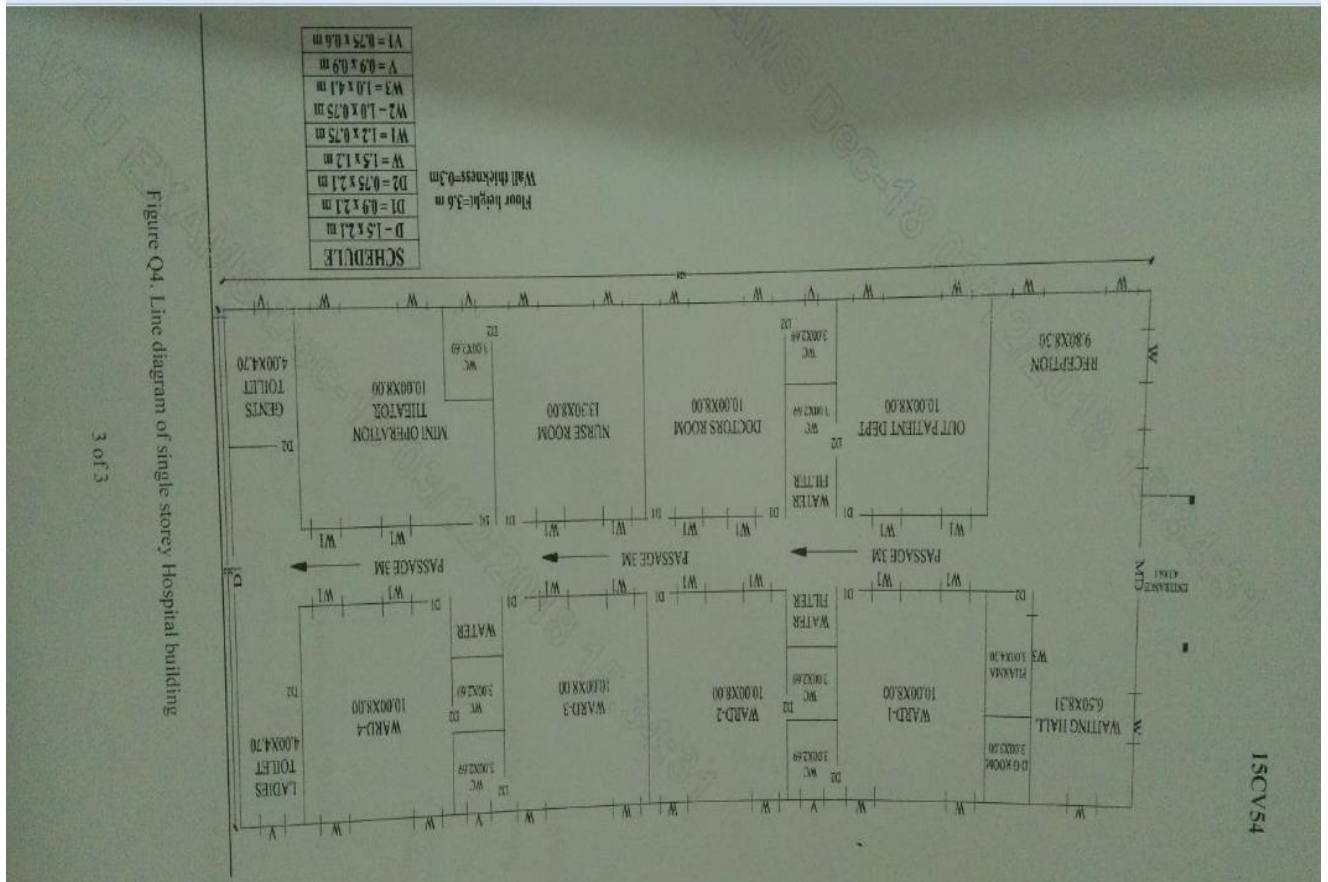


Figure Q4. Line diagram of single storey Hospital building

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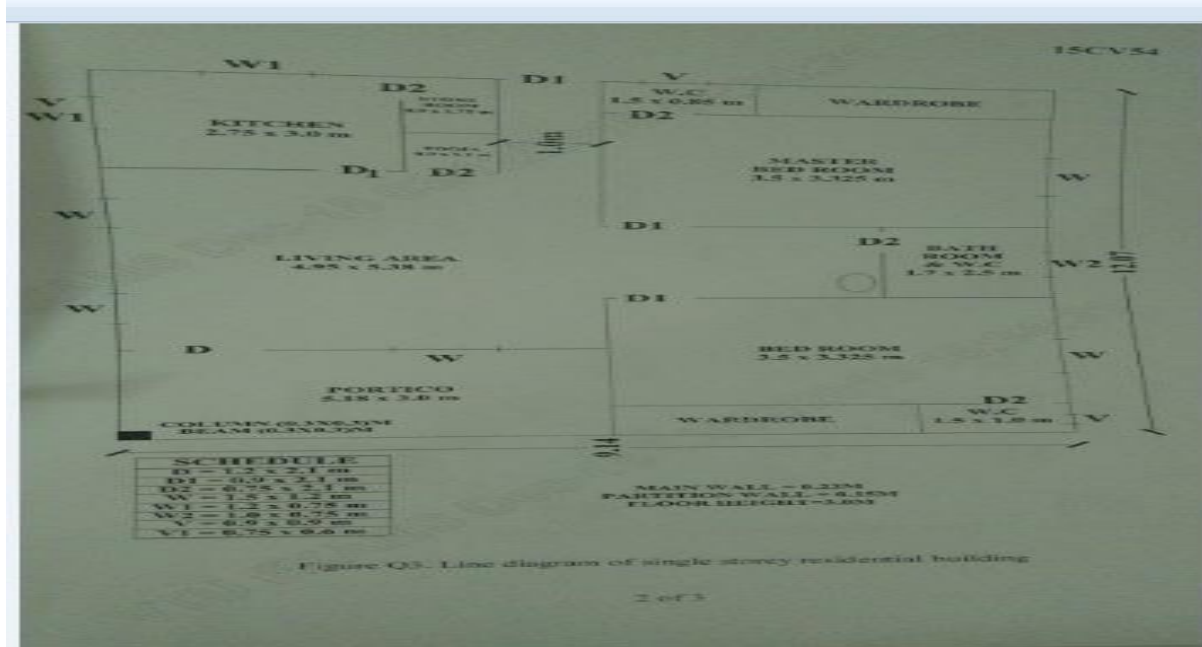
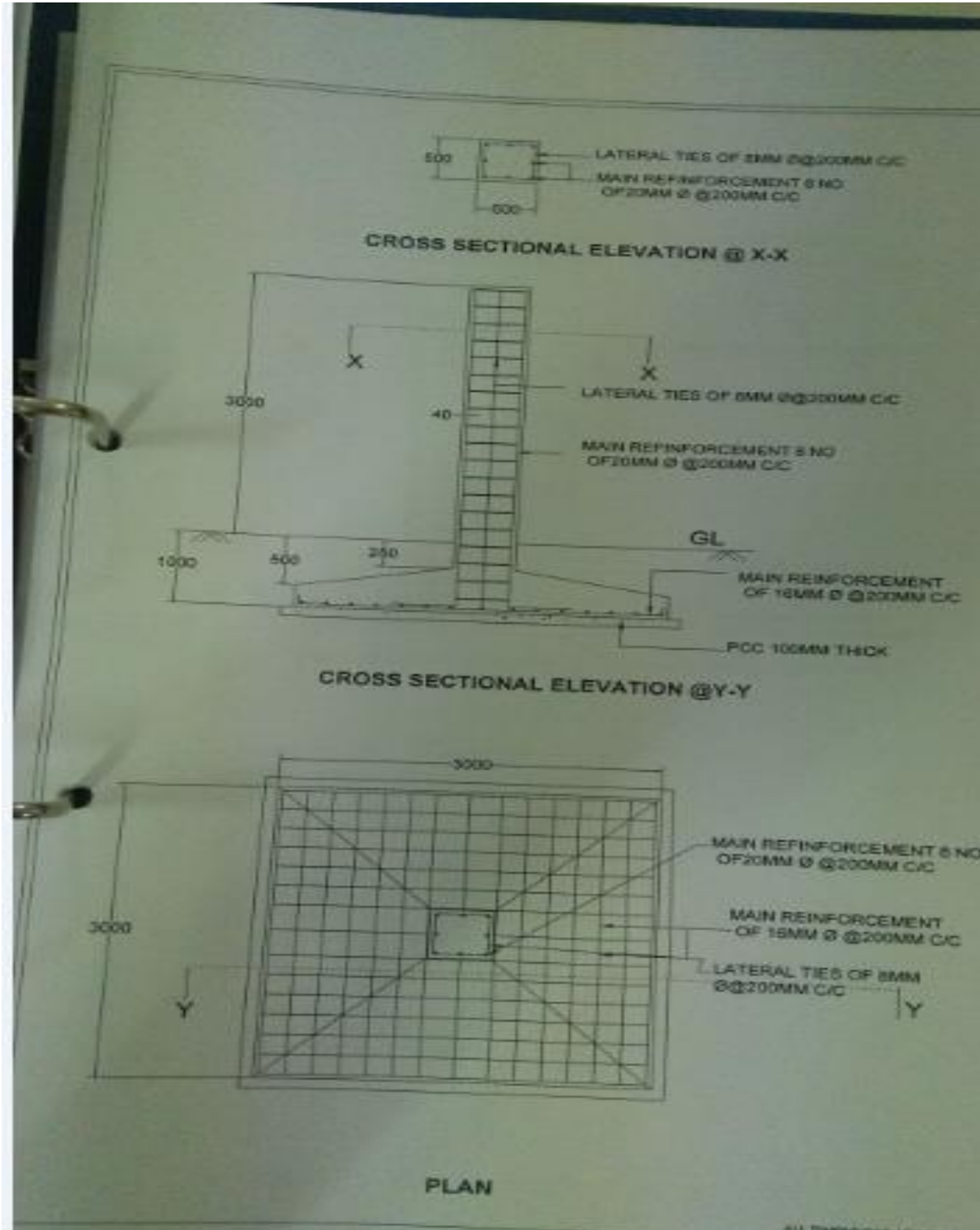


Figure Q3. Line diagram of single storey residential building

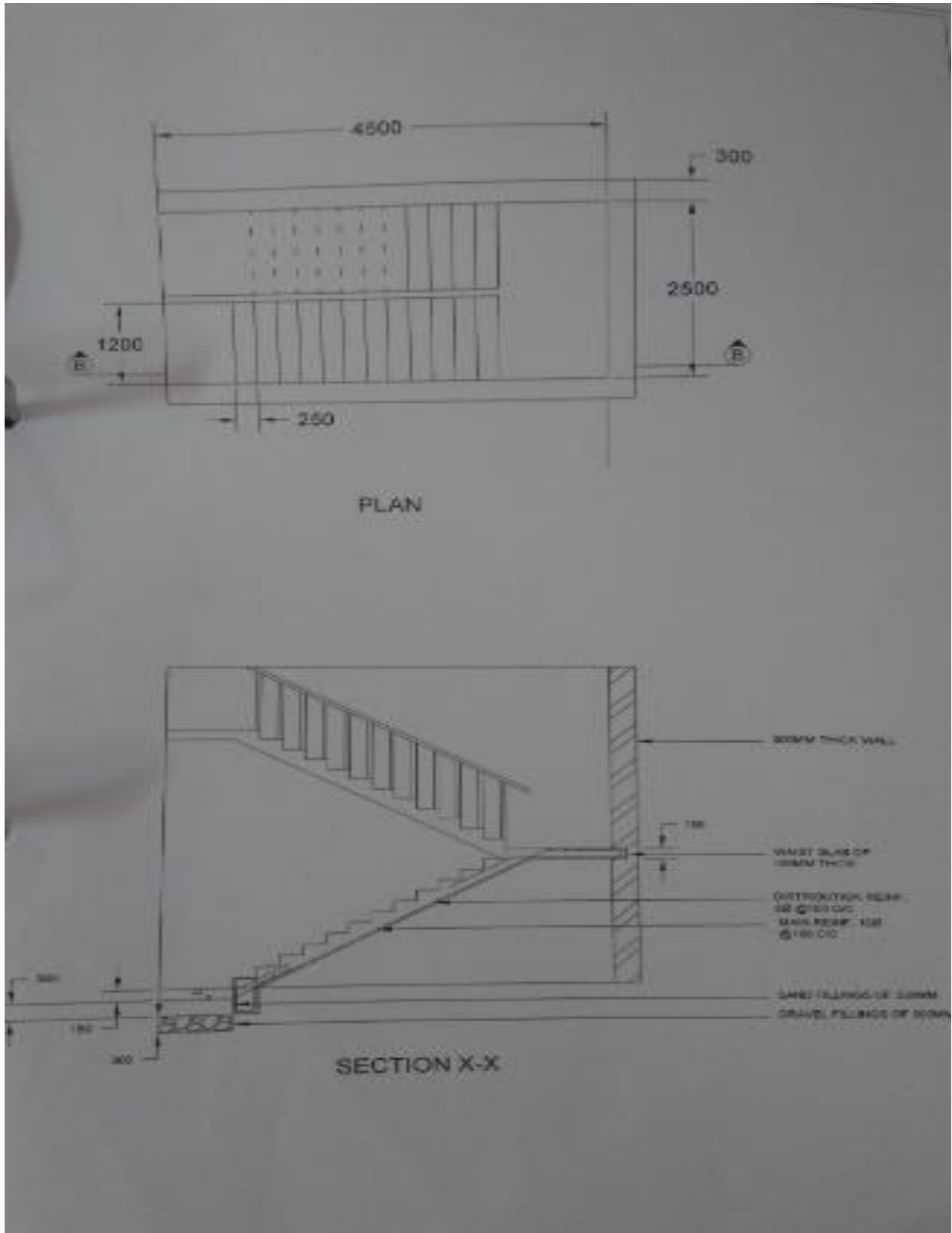
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15CV54 SOLUTIONS

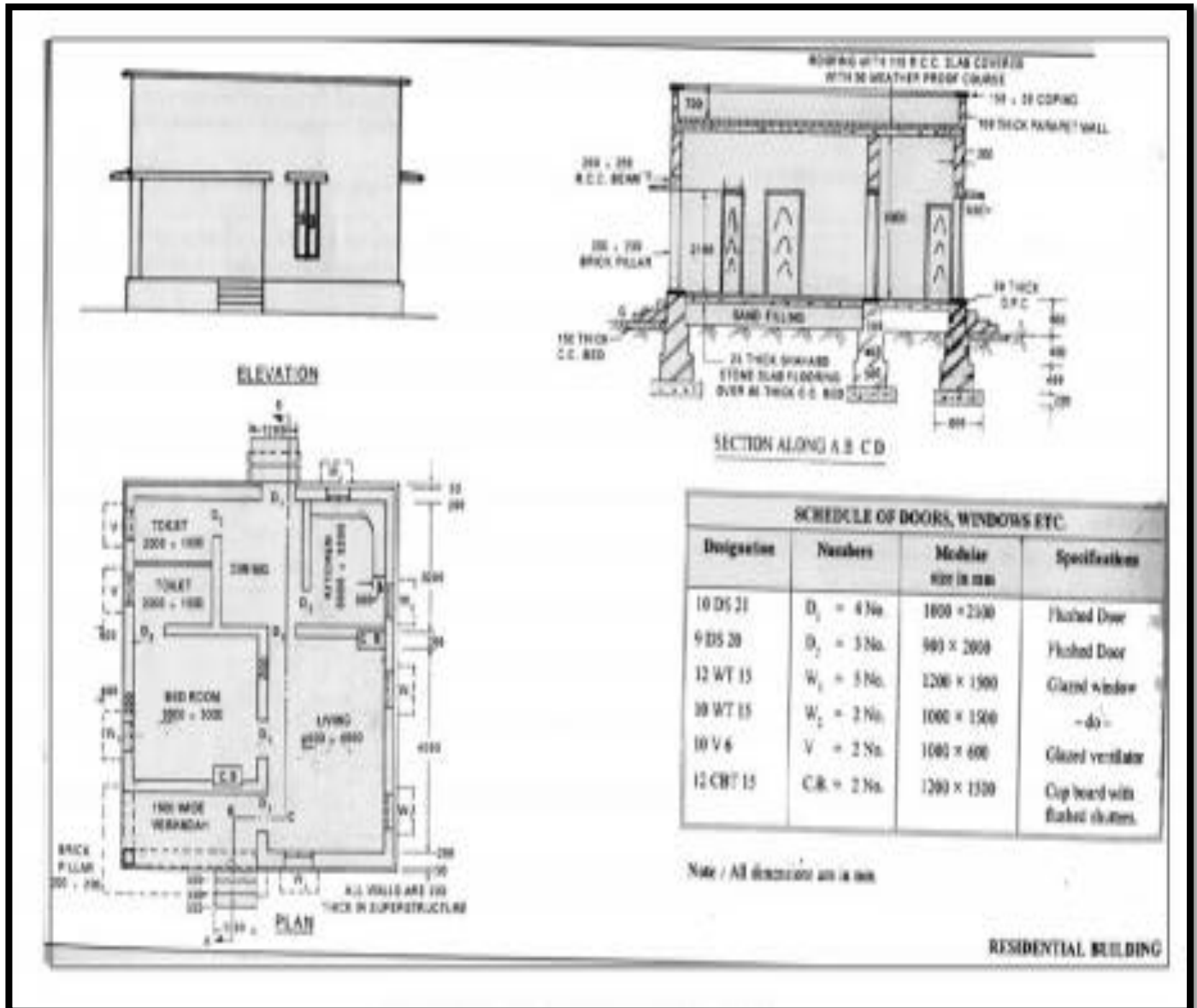
1 Footing details



2 Stairs _ Dog legged stair



3 Single storey residential building



SCHEDULE OF DOORS, WINDOWS ETC.			
Designation	Numbers	Module size in mm	Specifications
10 D ₁ 21	D ₁ = 4 No.	1800 x 2100	Finished Door
4 D ₂ 20	D ₂ = 3 No.	900 x 2000	Finished Door
12 W ₁ 15	W ₁ = 5 No.	1200 x 1900	Glazed window
10 W ₂ 15	W ₂ = 2 No.	1000 x 1500	- do -
10 V 6	V = 2 No.	1000 x 600	Glazed ventilator
12 C.B.T 15	C.B. = 2 No.	1200 x 1500	Cup board with flaked slates.

Note / All dimensions are in mm

RESIDENTIAL BUILDING

4 Hospital building

