# 3rd Sem./ Civil/ 2021(W)

## TH 4 Estimation & Cost Evaluation-I

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10

a. State the actual and nominal size of a standard modular bricks .

b Mention the multiplying factor for painting work in case of fully glazed window and flush door.

c. What do you mean by out turn?

d When centre line method of estimating is preferred?

e Calculate the amount of plastering required for a 5mX 4m room having 30 cm thickness and 3m height?

f. Define Lead and Lift.

g Calculate the additional length of bent up bar for 45* cranked bar?

h Write down the units of the following items
i. Honey comb brick work
ii. Collapsible gate
iii.Stone Masonary
iv.Flooring

i. Classify labourers according to OPWD.

j. What is the standard weight of 20mm dia. Bar of 1m length?

2 Answer A**ny Si**x Questions 5x6

a. Calculate the quantity of dry material for $10m^3$ of cement concrete with proportion 1:3:6 ?

b Draw the hierarchy of Engineering department in State Govt.

c. Calculate the quantities of dry material required for 100sqm ,12mm thick plastering with proportion 1:6 ?

d Mention the duties and responsibilities of Assistant Engineer.

e. Calculate Sal wood work in chowkhat for door and window size of 1.2mX2.1m and 1mX1.5 m? Size of chowkhat 10cmX 8cm .Assume any suitable data.

f. Estimate the following items from Fig No 1 by centre line Method. 2 ½ +
i.Earth work in Excavation
ii.Brick work in foundation and plinth 2½

g Calculate the dry materials required for $450m^2$ of 25mm thick DPC in cement concrete of Proportion ( 1:1.5:3 )?

3 Calculate the following items of work from Fig No 2. 5+5
i.Earthwork in excavation in foundation.
ii. Earth work in filling in plinth..

4 Calculate the cost of 10cum of brickwork in foundation and plinth with 20×10×10cm brick with cement sand mortar 1:6 ?

| | | | |
|---|---|---|---|
| 5 | Estimate the quantities of the following items of a residential building from fig-3<br>i. First class brick work in foundation and plinth.<br>ii. 2.5 cm Damp proof course. | | 6+4 |
| 6 | Estimate the quantities of the following items of a building from fig-4<br>iii. 12 mm thick inside plastering in walls (1:6)<br>iv. Painting doors and windows | | 6+4 |
| 7 | Write short notes on :<br>(a) Plinth area Estimate<br>(b) Contigency<br>(c)Work charged establishment.<br>(d) Scrap value and Salvage Value | [ 5X2] | 2 ½ x 4 |



**TWO ROOMED BUILDING**

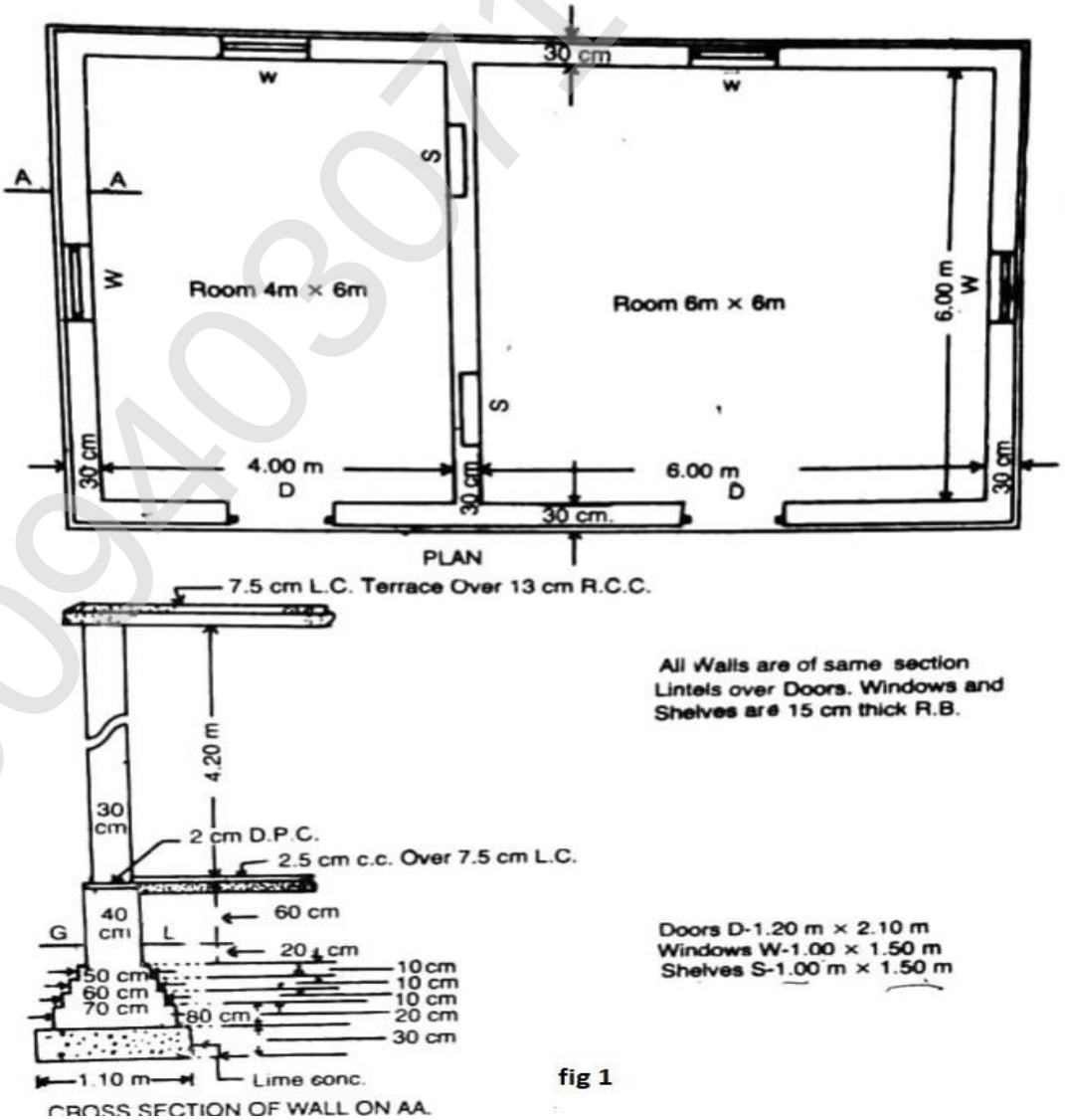



fig 1

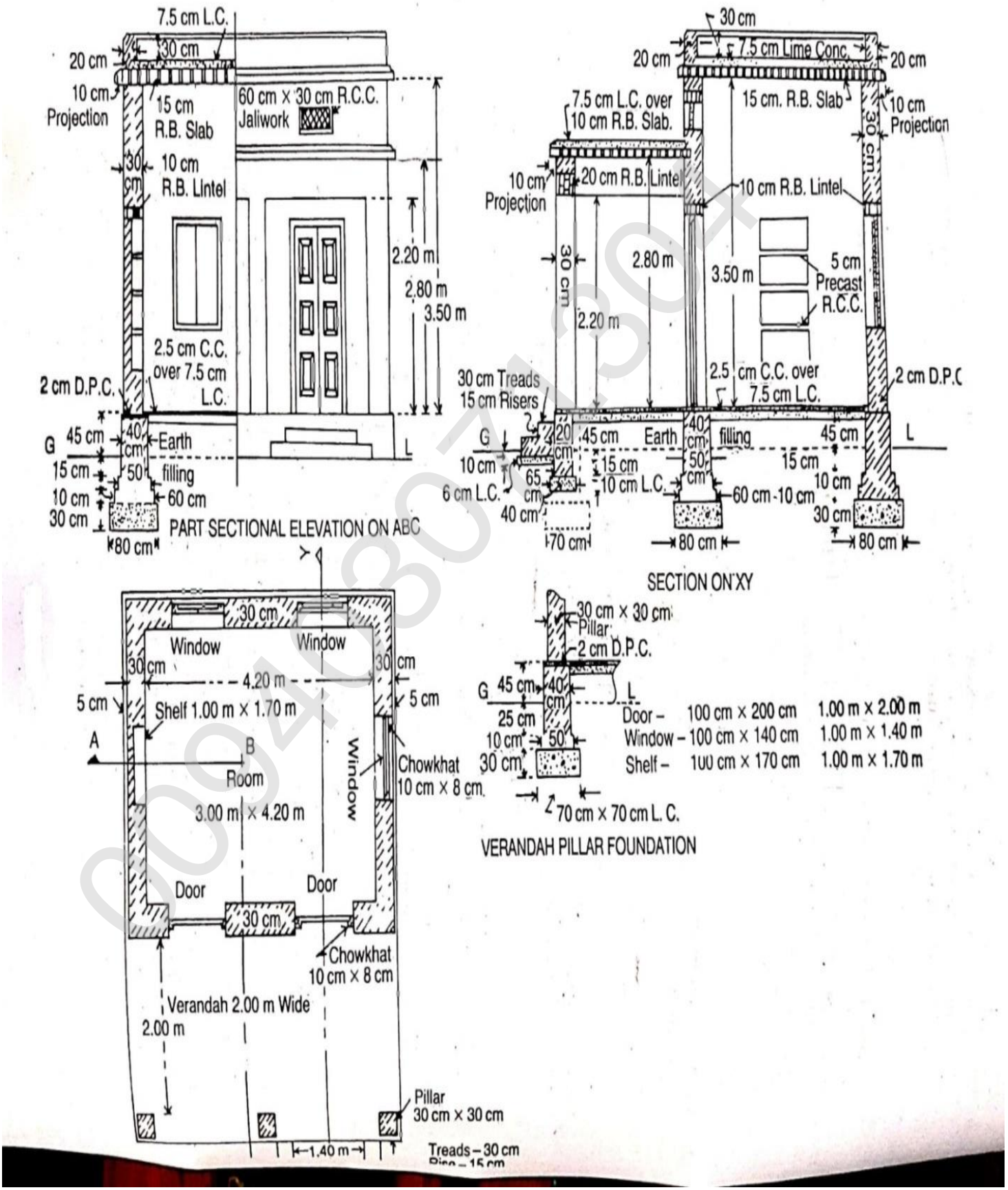
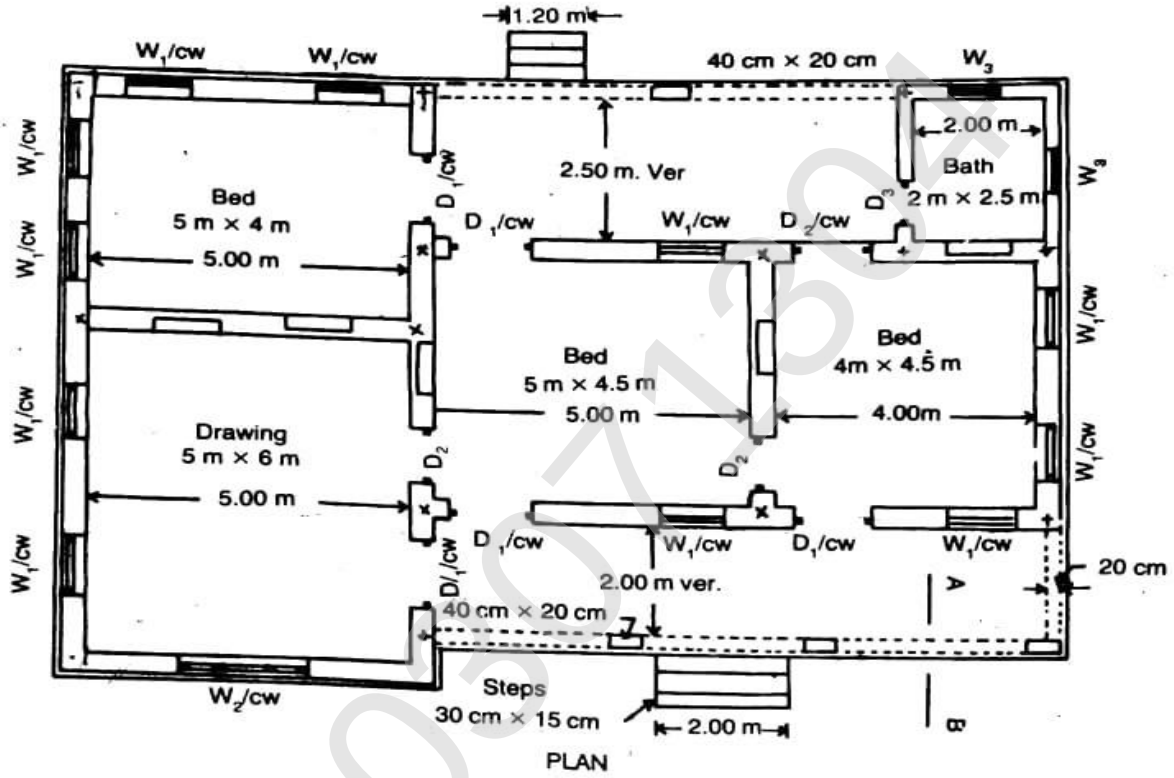
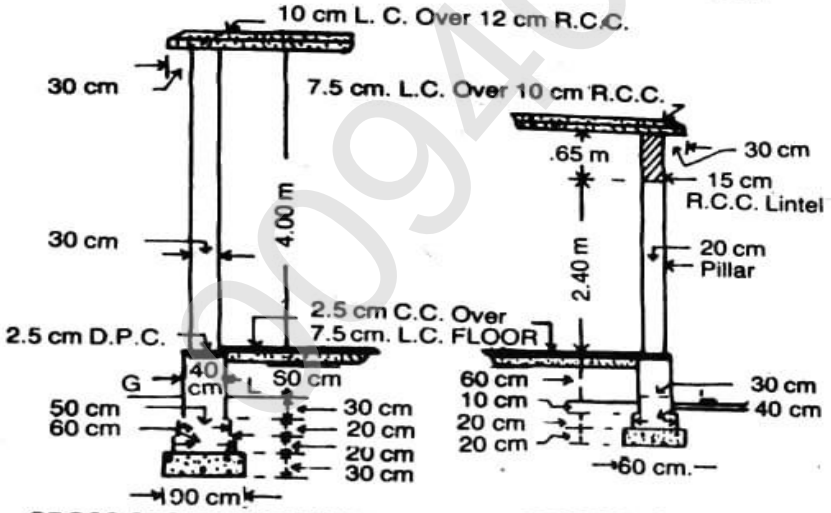

7.5 cm L.C.
30 cm
20 cm
10 cm Projection
15 cm R.B. Slab
60 cm × 30 cm R.C.C. Jaliwork
30 cm
10 cm R.B. Lintel
2.20 m
2.80 m
3.50 m
2.5 cm C.C. over 7.5 cm L.C.
2 cm D.P.C.
G
45 cm
40 cm
Earth
15 cm
50 cm
filling
10 cm
60 cm
30 cm
80 cm
PART SECTIONAL ELEVATION ON ABC
30 cm
7.5 cm Lime Conc.
20 cm
7.5 cm L.C. over 10 cm R.B. Slab.
15 cm. R.B. Slab
10 cm Projection
20 cm R.B. Lintel
10 cm R.B. Lintel
2.80 m
3.50 m
5 cm Precast R.C.C.
2.20 m
2.5 cm C.C. over 7.5 cm L.C.
2 cm D.P.C
30 cm Treads
15 cm Risers
G
20 cm
45 cm
Earth
filling
L
10 cm
15 cm
10 cm L.C.
6 cm L.C.
65 cm
40 cm
70 cm
80 cm
SECTION ON XY
30 cm × 30 cm Pillar
2 cm D.P.C.
G
45 cm
40 cm
L
25 cm
10 cm
50
30 cm
70 cm × 70 cm L. C.
VERANDAH PILLAR FOUNDATION
Door – 100 cm × 200 cm 1.00 m × 2.00 m
Window – 100 cm × 140 cm 1.00 m × 1.40 m
Shelf – 100 cm × 170 cm 1.00 m × 1.70 m
30 cm
Window
Window
4.20 m
5 cm
Shelf 1.00 m × 1.70 m
A
B
Room
3.00 m × 4.20 m
Window
Chowkhat 10 cm × 8 cm
Door
Door
30 cm
Chowkhat 10 cm × 8 cm
Verandah 2.00 m Wide
2.00 m
Pillar 30 cm × 30 cm
1.40 m
Treads – 30 cm

**Fig 2**

## RESIDENTIAL BUILDING




CROSS SECTION OF MAIN WALLS

CROSS SECTION AB OF VER.WALL

Doors:-
$D_1$ – 120 cm × 210 cm (1.20 m × 2.10 m)
$D_2$ – 100 cm × 200 cm (1.00 m × 2.00 m)
$D_3$ – 75 cm × 180 cm (.75 m × 1.80 m).

Windows:-
$W_1$ – 100 cm × 150 cm (1.00 m × 1.50 m)
$W_2$ – 200 cm × 150 cm (2.00 m × 1.50 m)
$W_3$ – 75 cm × 120 cm (.75 m × 1.20 m)
C.W. – 75 cm × 60 cm (.75 m × .60 m).

Shelves:-
S – 100 cm × 150 cm (1.00 m × 1.50 m)
Lintel Over Doors, Windows Etc.
15 cm R.B.

All walls of Drawing Rooms and Bed Rooms have same section

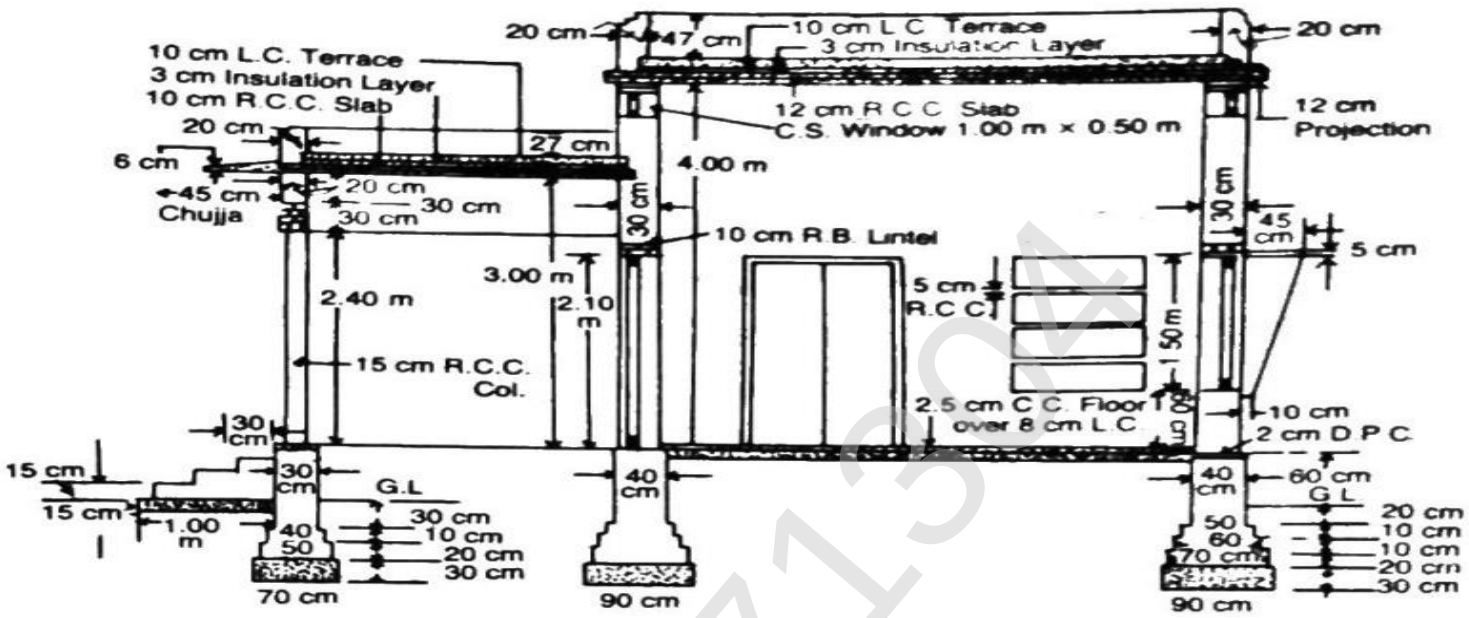
Bath Room Walls have similar section

**Note**—*No beam has been shown in the plan.*

fig 3

# TWO-ROOM BUILDING WITH FRONT VERANDAH

## CROSS-SECTION OF TWO-ROOMED BUILDING




SEC^NL ELEVATION ON CEFG

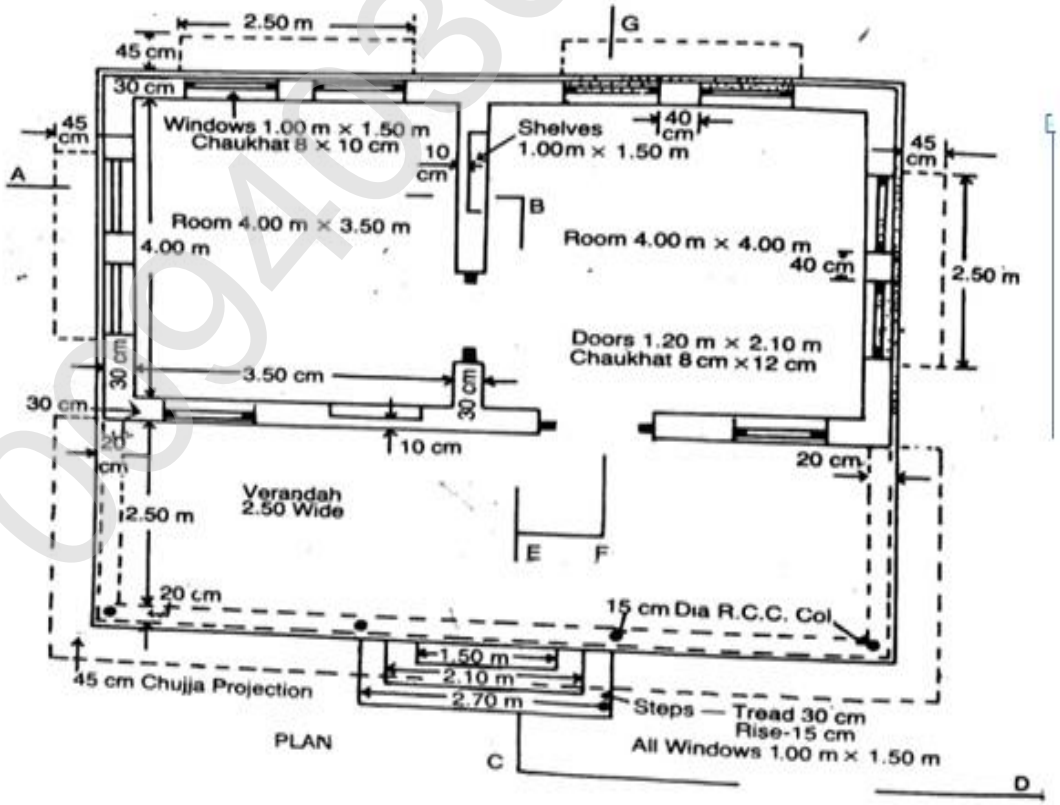



**FIGURE-04**