

# Aditya Building

Day - 01

I was seen a ground floor Plan the sheet size is A1+ (private part) made stepped with

## Components of the Plan

Double Door (D) - 3

single Door (D) - 4

fire shaft (FSDS) - 2

window (W) - 6

ventilation (V) - 10

grill gate (G) - 2

Rolling Shutter

lift openings - 1

Bed set & tool store

books p/1

new owner will give a gift not a gift

new owner will give a gift not a gift

## Material used :

Steel H.S.D.B.Cu - 550 16mm φ as well

Mild Steel Bar 8mm φ of Fe 250

Fine aggregate → Psand (for plastering)

coarse aggregate → for mixing a concrete

Gypsum sheet → for partition wall making  
and also brick work 20mm

Bricks → AAC blocks IS 2095 → Part-I

Paint mixer → for removing voids (airvoids)

Dalmia cement (a) water → PPC (Portland Pozzolanic  
cement) (b) moisture

Crack → 43

Cover Block → 20mm, is standard but  
change this like a 40mm,

25mm, 50mm.

Plumb bob & tube level

Plywood

Jacky → for carrying a slab frame work

Shoe-block → for column alignment.

works going on: today:

Carpenting works

Wall constructing at still level

Ceilings Plastering

Staircase Plastering

Student mess + toilet Plastering

Mess Stables + toilet Plastering

Doi refugios en room 1  
priest 2019 grilles

priest 2019 grilles not - extension H

doors plastered or covered S

plastered grilles & toilet room 10c

engaged 2 months

old traps to floor 10c

Day - 02

Ceiling Plastering work - 2<sup>nd</sup> floor

Column size - 18" x 12" inches  
(rectangular)

Square → 9" x 9" inches

beam depth (~~effective~~) → 14" inches

overall depth → 12.5" inches

4 Mason → computer lab

ceiling plastering

4 helpers → for ceiling plastering

3 labourers → concreting work

2<sup>nd</sup> floor & roof → ceiling plastering

4 Mason & 2 helpers

Parapet wall → height 3.1m

ceiling Plastering  $\rightarrow$  20 pond sand & 2 bag cement

for first coating  $\rightarrow$  1:1 ratio

paper for this - 100 ft  
6 times 20 meter  $\rightarrow$  120 m<sup>2</sup>

Yield 100 ft

181 ft

3: 200 ft  $\times$  686 ft

100 ft  $\times \frac{14}{54}$

182

3 200 ft  $\times$  686 ft

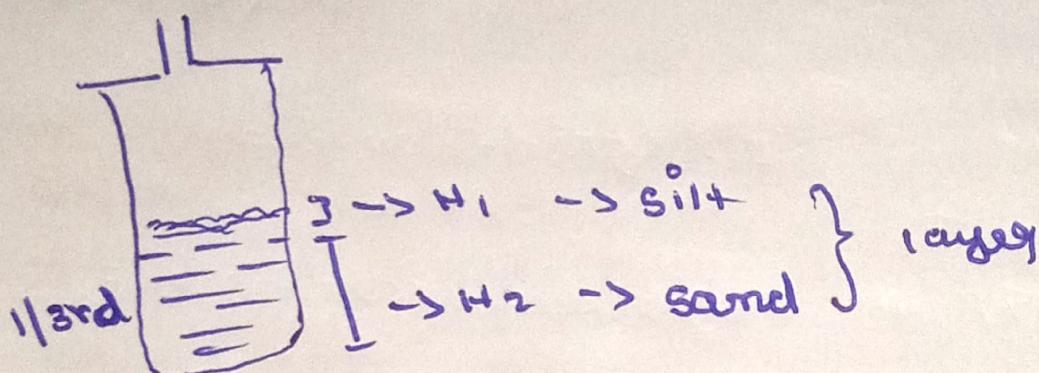
## Field test:

Soil + water  $\rightarrow$  fine sand + silt + clay.

## Silt content test:

After 12 hr  $\rightarrow$  settle & read

## M-Sand:



$$= \frac{H_1}{H_1 + H_2} \times 100\%$$

$\approx 15\%$ .



IS 383  $\rightarrow$  Page : 8

## Rivers

$$\frac{H_1}{H_1 + H_2} \times 100\%$$

$< 8\%$ .



IS - 383  $\rightarrow$  Table 2

## Limits of Detrimental material:

8%.

coal & lignite  $\rightarrow$  1%.

clay lumps  $\rightarrow$  1%.

shale  $\rightarrow$  1%.

including  $\rightarrow$  mica  $\rightarrow$  5%

TOTAL = 8%.

If silt material is higher in River sand:

=> It will affect strength & workability of concrete

=> It will create some cracks.

P-sand :

$$= \frac{V_1}{V_2} \times 100\%.$$

= 45%. Should be less



IS 1542 → Page : I

If Silt Content is Higher in P-sand :

\* can't get smooth finish

\* Plastering might lose bonding strength

& durability may reduce.

\* There will be changes of cracking & peeling.

water Absorption test for burnt clay  
bricks:



As per IS - code 1077

Dry weight ( $w_1$ )

wet weight ( $w_2$ )

$$\% \text{ water} = \frac{w_2 - w_1}{w_1} \times 100\%$$

(w) should go topless for color

= not more  
moisture or water content less  
than 20%.

It is a good Brick

\* If you Scratching a true brick it will  
create a metallic sound.

\* It should be proper shape.

\* If you putting a brick from your  
shoulder height should not break.

## For quality of AAC block:

IS 2185 (Part - 3)

### Procedure:

=> Take two different sizes of AAC block 4" & 9".

=> Take dry weight of both (w<sub>1</sub>)

=> Add them

calculate the volume

$$\frac{w_1}{V}$$

This PT advised max water absorption value should be 550 + 0

650 ranges

IS code doesn't suggest maximum water absorption.

Reason for corrosion of reinforcement:

\* Overage of concrete

5000 - 50

\* Higher water ratio

Water / cement ratio 10 or 10 <

\* Insufficient curing

concrete cover

\* Cracks

good formed > allow

\* Concrete Age

High quality < 3d for better

To overcome of corrosion:

\* To provide proper cover

\* High quality cement

\* Protective coating

\* Regular maintenance

Cement:

IS - 4082

$\Rightarrow$  6" + 8" height

$\Rightarrow$  2 ft gap should be there between wall & cement bag.

should not be  $> 10$  bags height

" "  $> 4$  bags or 3

metres width.

## AAC - Block

14/3/2023

<u>size</u>	<u>weight</u>
6"	8 kg

At 8" most blocks produces less than  
16 kg

6" 12 kg

9" 18 kg

⇒ It is eco-friendly because after production there is a least amount of waste.

⇒ It is fire-resistance because inside a block form concrete

## Grade Beam:

=> minimum Depth 150 mm

=> for reducing grade beam depth

we can use steel column

=> minimum 3 nos of Bars 10 mm dia

& stirrups of 6 mm dia Bar

& c/c 300 mm

ratio of uncracked fibres - 0.9 of FC <

to maximum tension in direct reinforcement

form - work  
IS 14887

material checking:

q.i.1

prohibited shear

$\Rightarrow$  span & Jacky should be unclamped & not visible bent.

also avoid number 103

$\Rightarrow$  If beam span & depth is higher we have to see jacky in closely sprung minimum 1m once

$\Rightarrow$  Place the jacky unsentled region solid surface.

and now fit first nose

U

→ chair : rods ~~reinforcement~~

rein + Bending

adhesive float & nozzle

De-shuttering (day after begining)

for column, beams, walls

16 - 24 hrs

needs not panel also at end we needn't

Bottom Shuttering

Slab & Beam

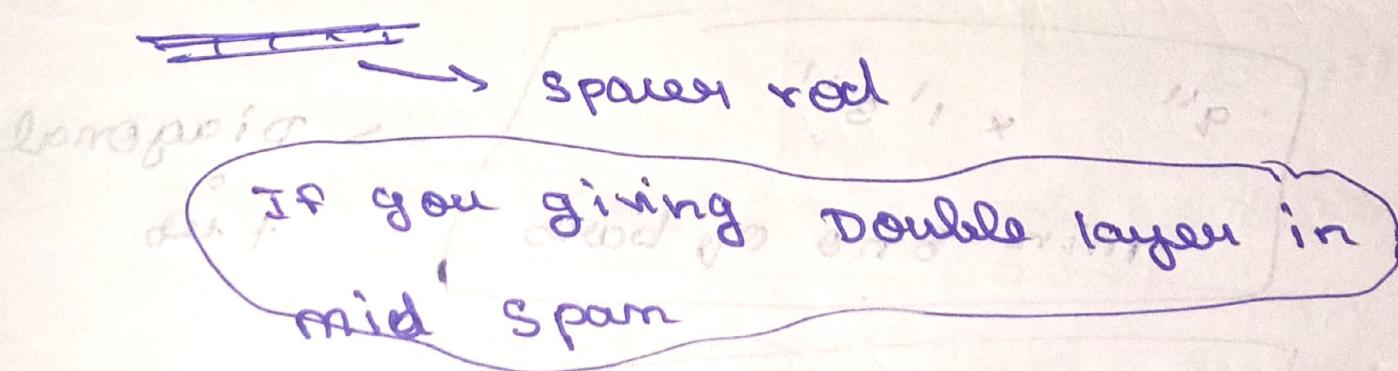
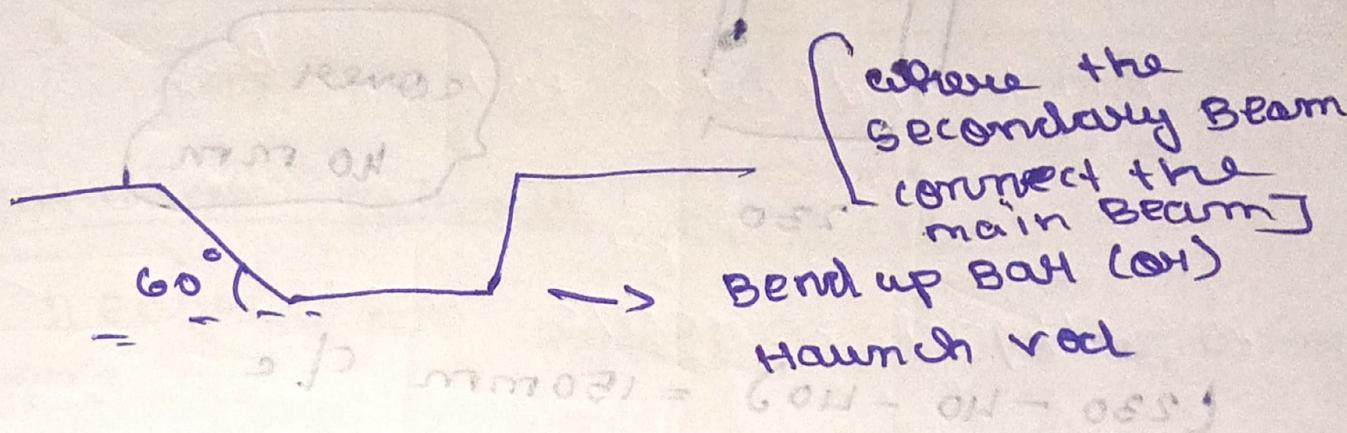
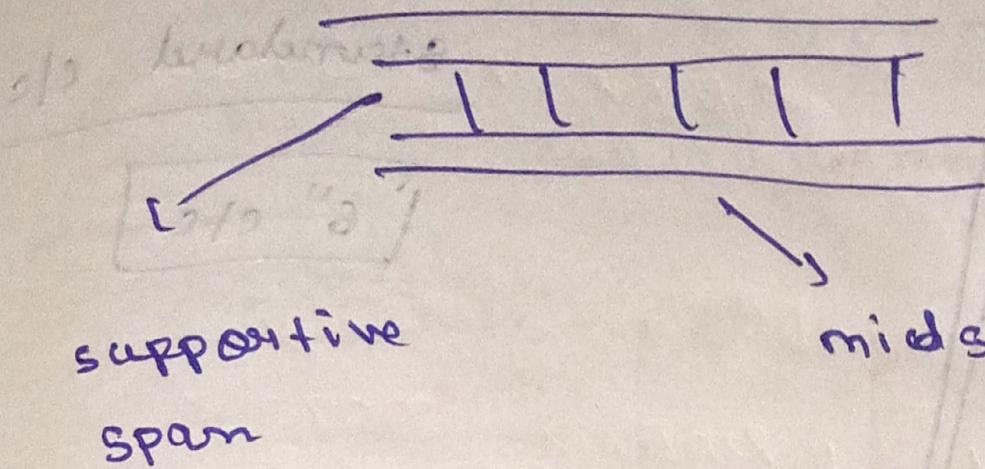
Span length upto 6m → 14 days

when tiles no longer

Span length over 6m → 21 days

## Beam

breakdown  
10 x 10



10 x 10

wood joist on 12' min

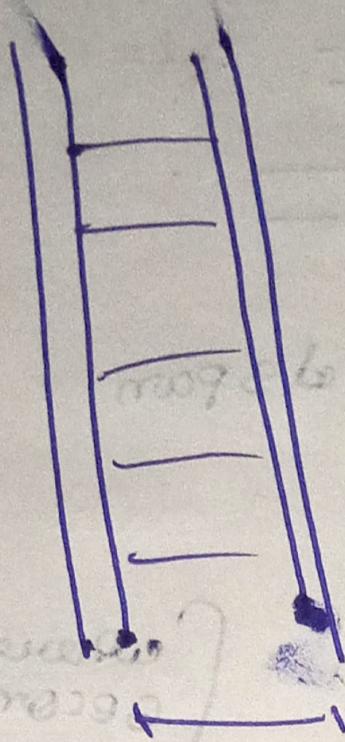
10 x 10

wood joist on 12' min

column :

Standard

9" x 9"



Standard

6" c/c

cover  
40 mm

$$(230 - 40 - 40) = 150 \text{ mm c/c}$$

9" x 1' 3" <sup>132</sup> rebar

min 8 no of bars

→ Diagonal ties

9" x 1' 6"

min 10 no of bars

9" x 2'

min 11 no of bars

stair case

Thread

250 to 300 mm

Riser

150 to 190 mm

Thickness 6" (150 mm)

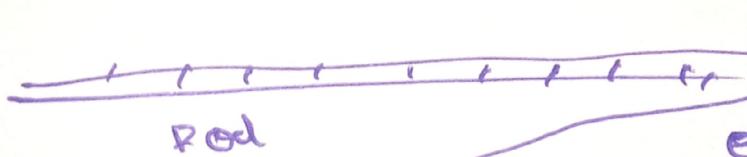
slab:

① Interior Panel condition:

4 edges are continuous to another slab.

② one long edge discontinuous.

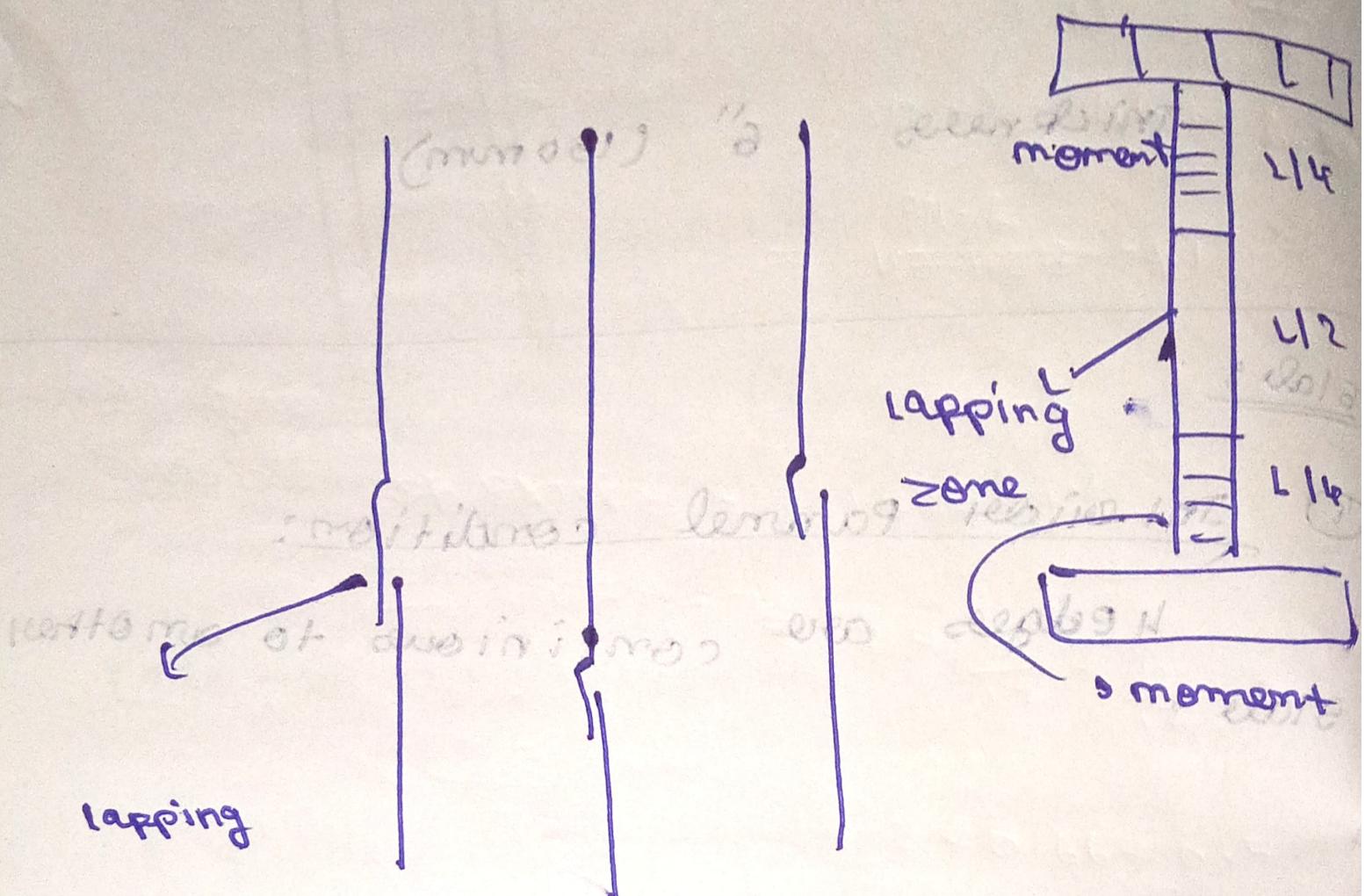
3 edges are continuous & one edge is discontinuous.

 Provide one rod

extra rod in discontinuous edge for minimum the spacing etc).

IP Steel Shutter span is 5m above

Provide thickness 6"



lapping

length with eccentricity 50d (50d)

(for 50d)

area of eccentricity of bars

column

area of eccentricity of bars

ribbed steel

50d

soft edge eccentricity

package with eccentricity

(2d)

## Estimation

=> Bricks

=> Slab concrete

{ cement, sand, Aggregate }

=> Plastering

{ cement, sand }

=> Steel requirement

(per slab)

Bricks for compound wall:

$$\text{volume of wall} = L \times W \times H$$

$$= \frac{120}{12} \times \frac{8}{12} \times$$

$$[ \text{Dimensions} = 10 \times 0.66 \times 6 ]$$

$$= \frac{39.6}{43.2} \text{ cft}$$

[Dimensions = 1000 mm x 600 mm x 200 mm]

$$\text{volume of Bricks} = L \times W \times H$$

$$[ \text{Dimensions} = 1000 \times 190 \times 190 \text{ mm} ]$$

$$= 240.66 \times 0.5$$

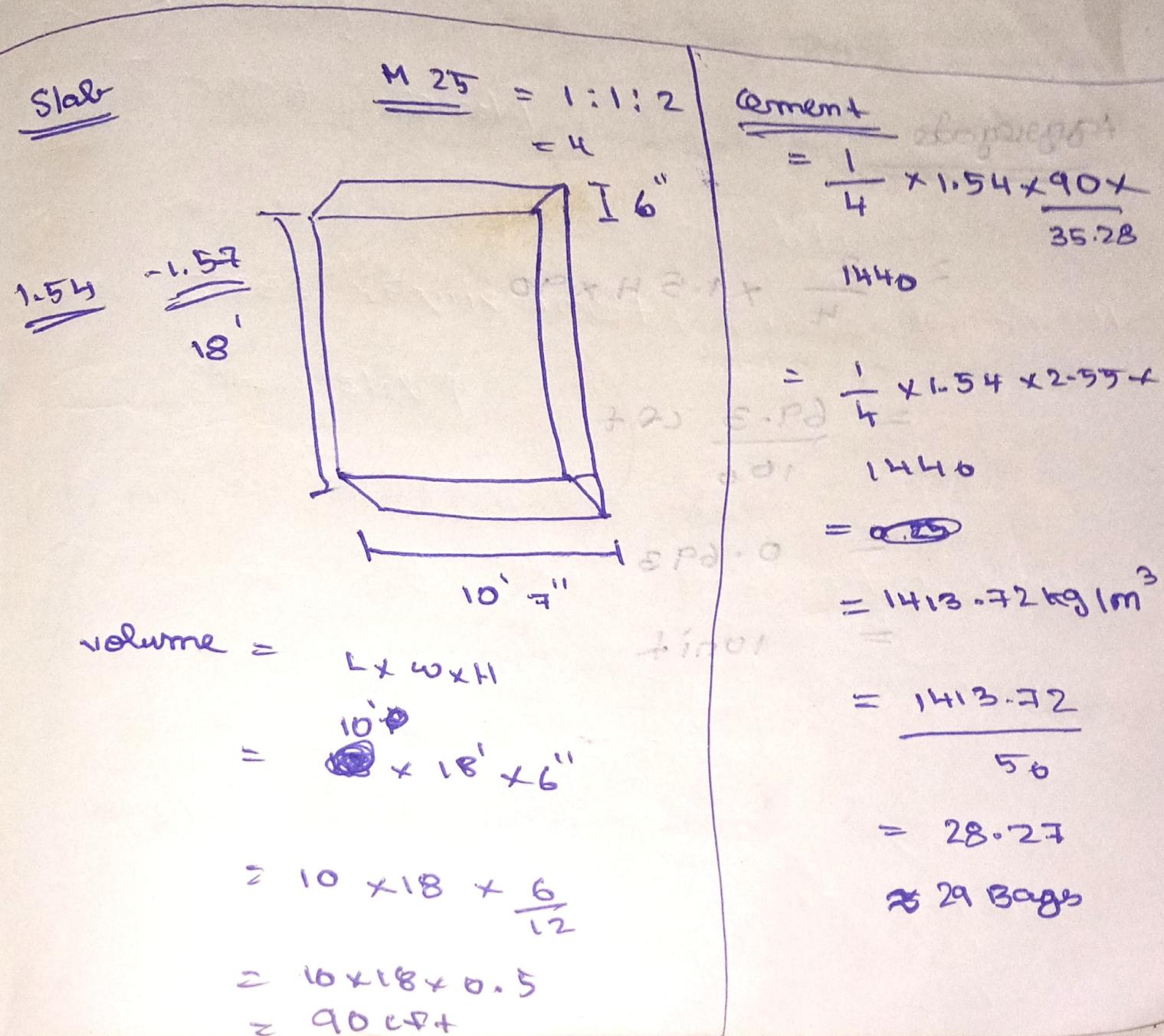
$$= 0.66 \text{ cft}$$

$$\text{No. of Bricks} = \frac{\text{Vol. of wall}}{\text{Vol. of Bricks}}$$
$$= \frac{\frac{39.6}{43.2}}{0.66}$$
$$= 60$$
$$= 60 \text{ Bricks}$$

$$\text{wastage } 5\% = 60 \times 0.05 \\ = 3$$

$$\text{Total} = 60 + 3 \\ = 63 \text{ Bricks}$$

97  
=> 6; 111



Sand

$$= \frac{1}{4} \times 1.54 \times 90$$

$$= \frac{34.65}{100} \text{ cft}$$

$$= 0.3465 \text{ unit} = \frac{1}{4} \text{ unit}$$

$$100 \text{ cft} = 1 \text{ unit}$$

Aggregate

$$= \frac{0.41^2}{4} \times 1.54 \times 90$$

$$= \frac{69.3}{100} \text{ cft}$$

$$= 0.693 \text{ unit}$$

$$\text{m/cft SF. S/H} =$$

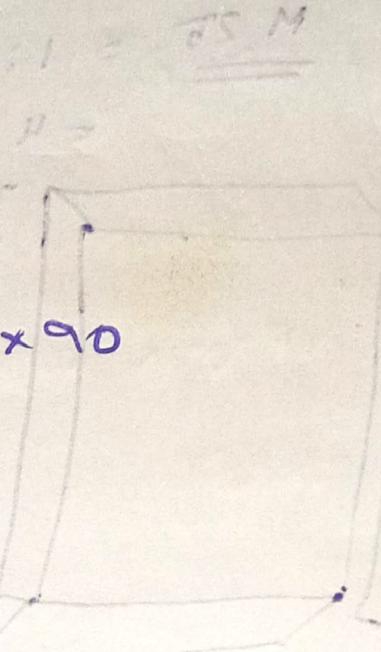
$$= 1 \text{ unit}$$

$$\text{SF. S/H} =$$

$$0.5$$

$$FS. B.R. =$$

$$2878 \text{ R.S.}$$



"F.O."

Slab crank - Bar

$$\text{length} = 0.42 d$$

$d \Rightarrow$  distance b/w top & bottom

column Hook  $90^\circ$  &  $135^\circ$

length =  $7D$  → Dia of Bar

Depth of Beam

$L/12$

↓

clear span

development length of Bar

→ Bar

$$L = \frac{\phi s}{4 T_{bd}}$$

## Admixtures:

- ① Accelerator Agent
- ② Retarder Agent
- ③ water reducing Agent
- ④ corrosion inhibitor
- ⑤ Super Plasticizer
- ⑥ air - entraining Agent

Heat of Hydration  $\rightarrow$  cement

curing  $\rightarrow$  14 to 28 Days  $\rightarrow$  concrete

$\rightarrow$  Others 7 days to 14 days

RMC

Points to Remember

=> once concrete is batch it should  
de-batch 1.5 + 2 hrs

max number of days

rotational movement

justified reasons

max - printers - 10

framed <- wait night to fly

steering <- spot 35 ft H <- preview

cycle 10. of cycle = 2000 <-