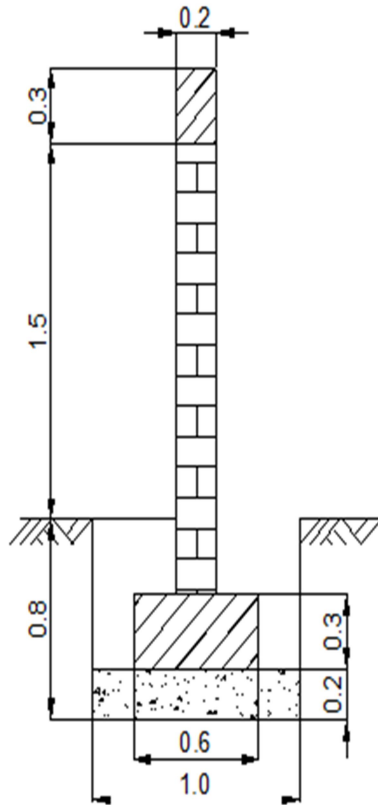
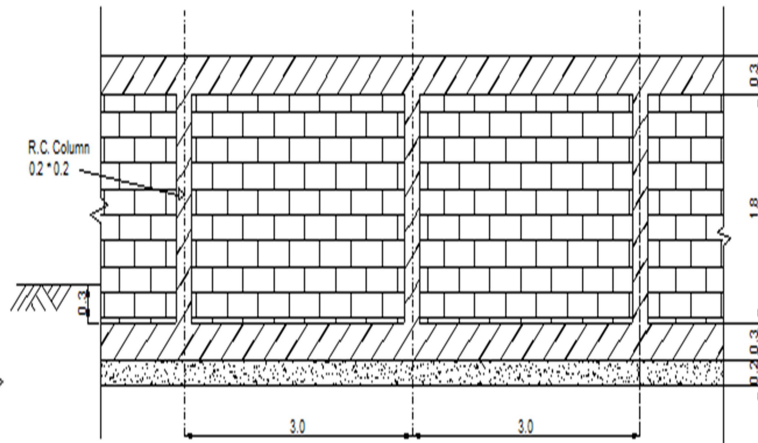


**ASSIGNMENT # 2**  
**Drawings for Quantity Surveying Coursework Sheets**

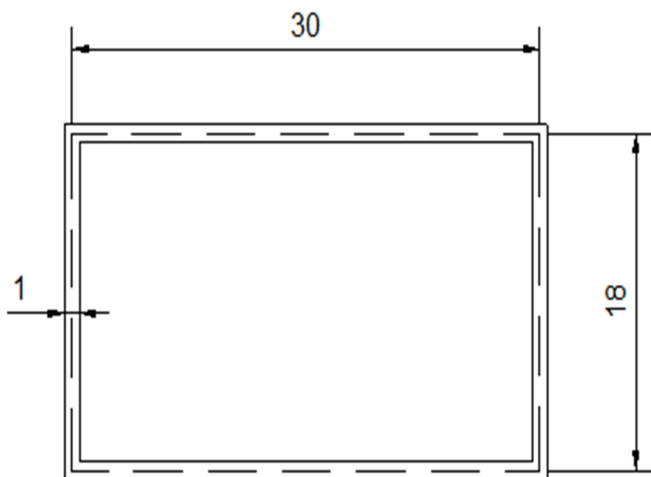
**1 - Wall Fences**



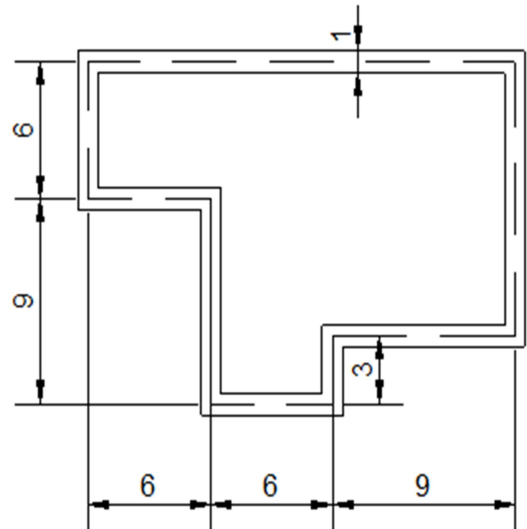
cross section



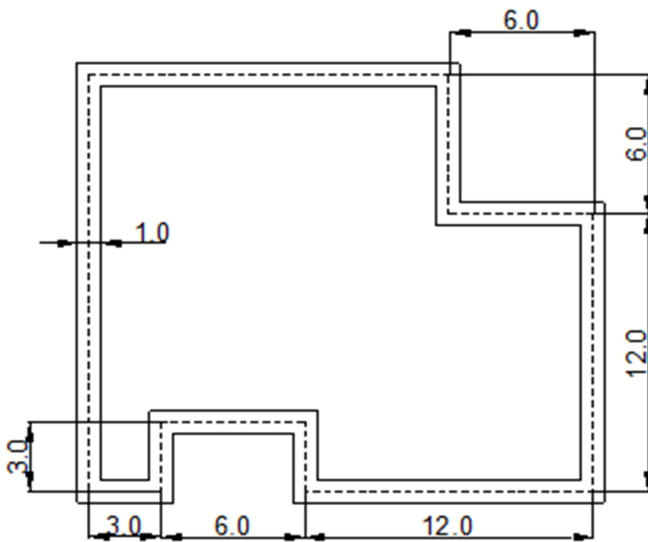
longitudinal



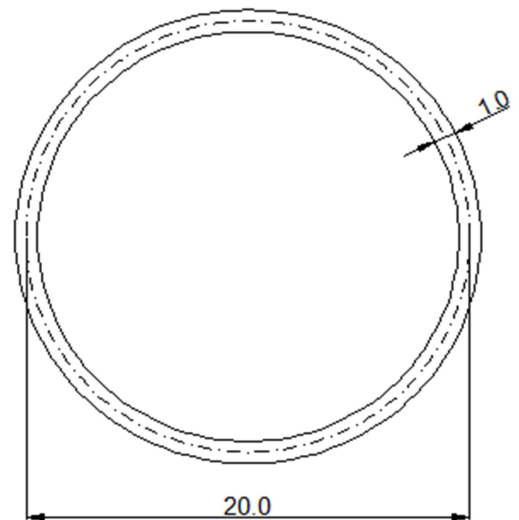
Wall Fence 1 plan



Wall Fence 2 plan

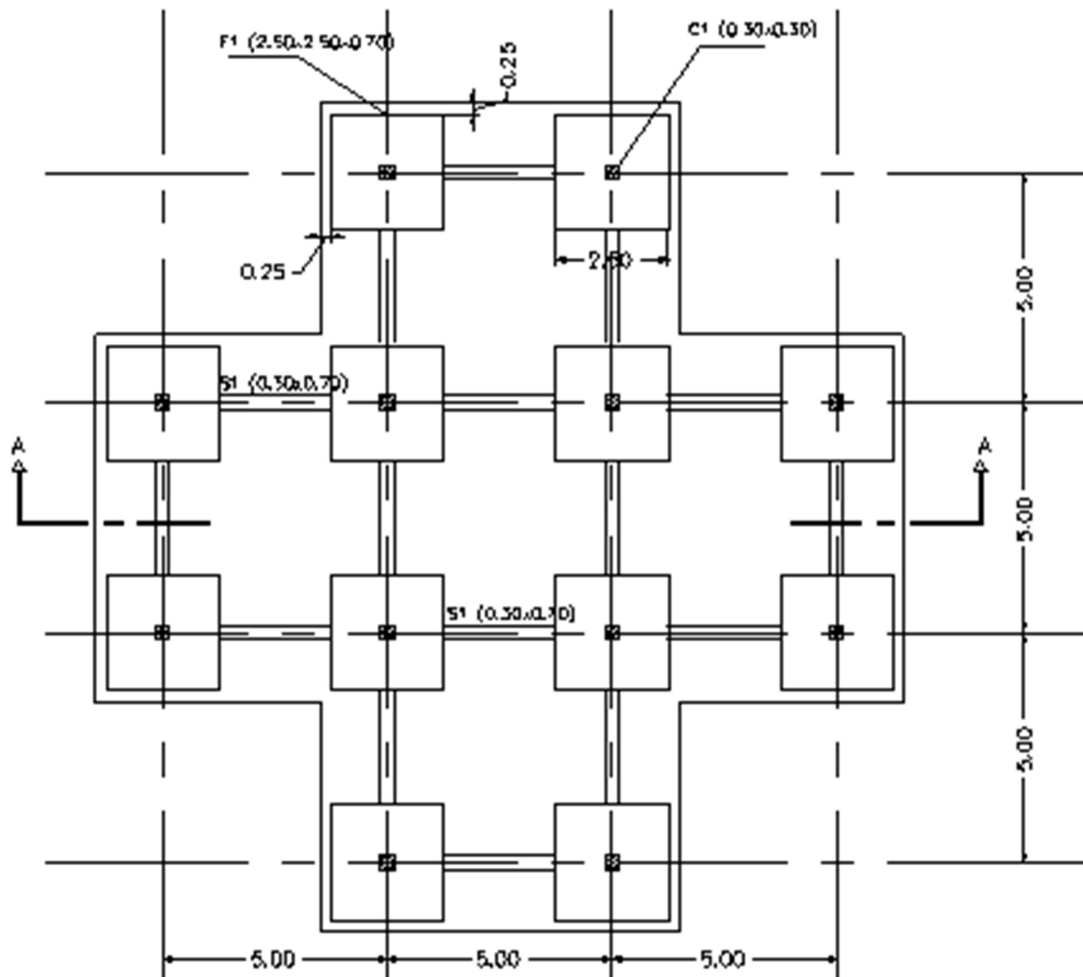
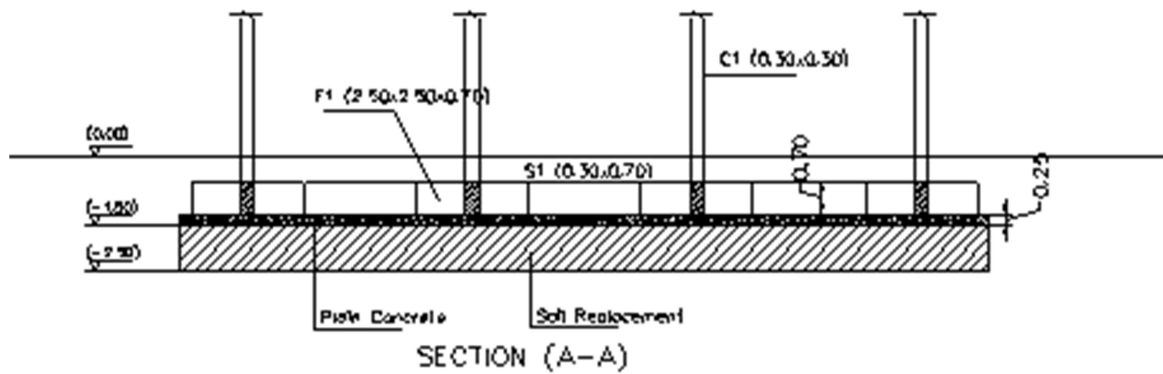


Wall Fence 3 plan



Wall Fence 4 plan

## 2 –Building 1



- 12 columns (30 x 30 cm).
- The plain concrete (P.C.) is raft under all columns with thickness 25 cm.
- Reinforced concrete footing (R.C.) for all columns is F1 (2.50 x 2.50 x 0.70).

- The R.C. footings are connected with ties (ground beams) 30 x70 cm. - The cross section (A-A) shows the levels and the extra 1.00m needed for soil replacement.
- The foundation level is (-1.50)

### 3 –Building 2

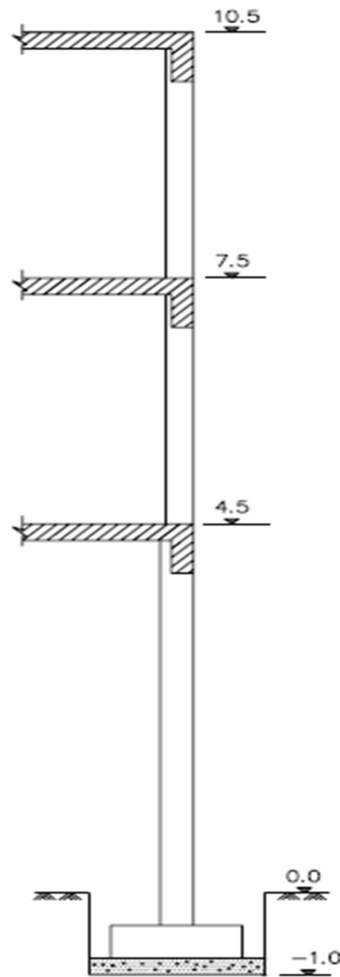


Figure 1

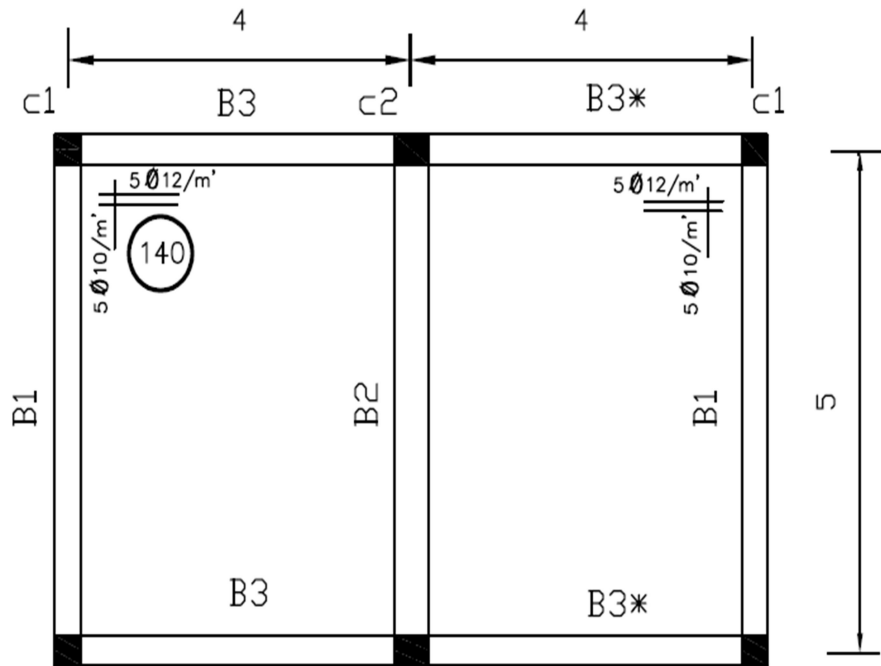


Figure 2

Table (1): Footings

Footing	Plain Concrete			R.C			Reinf. in Long Direction	Reinf. in Short Direction
	Length (m)	Width (m)	Thickness (m)	Length (m)	Width (m)	Thickness (m)		
F1	1.5	1.5	0.3	1.0	1.0	0.4	6 Ø 16	6 Ø 16
F2	2.5	2.0	0.3	2.0	1.5	0.4	18 Ø 18	11 Ø 16

**Table (2): Ties**

Tie	b (mm)	h (mm)	Bottom Reinf.	Top Reinf.	Stirrups
S1	300	400	3 $\varnothing$ 16	3 $\varnothing$ 16	5 $\varnothing$ 10/m'

**Table (3): Columns**

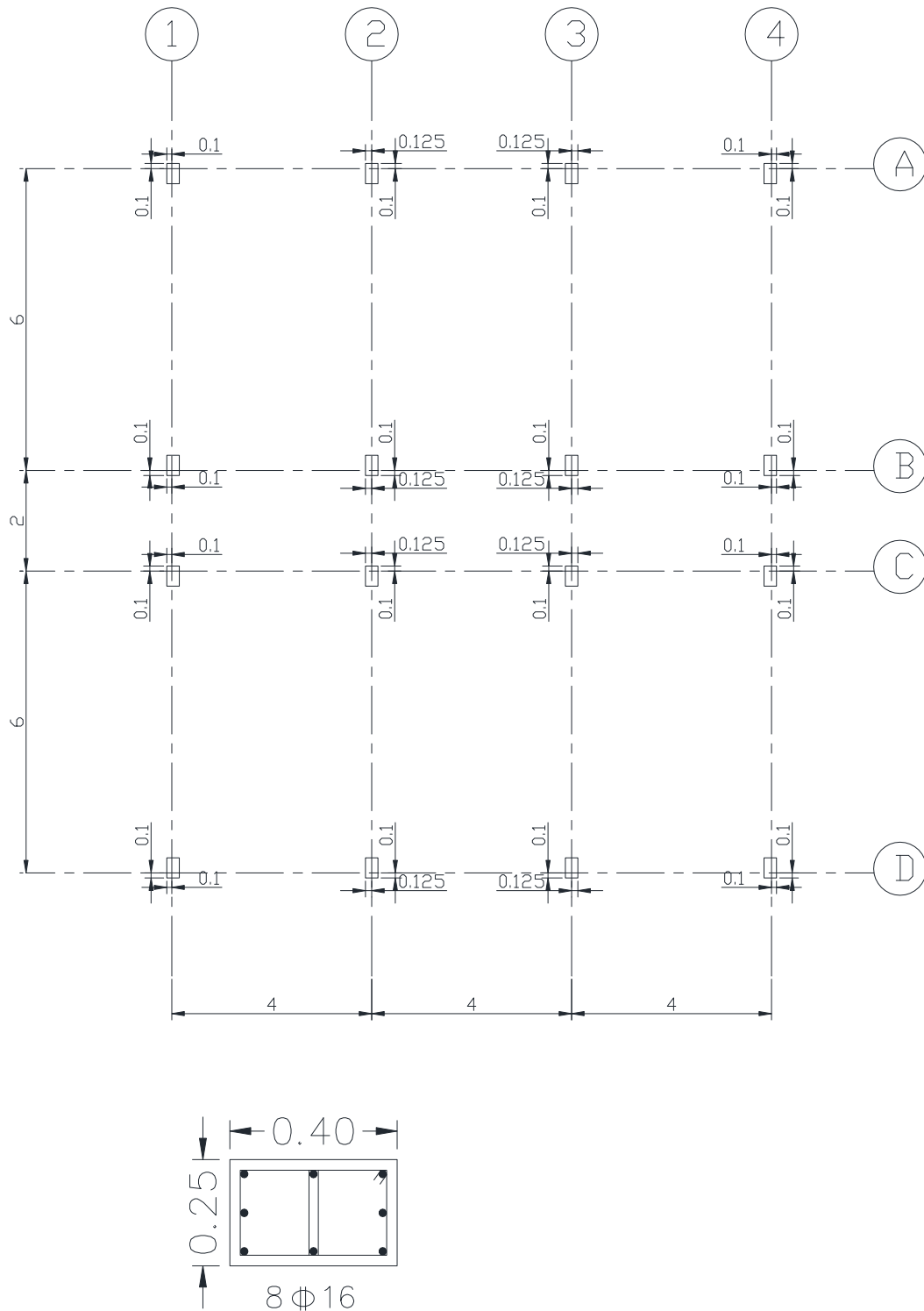
Column	G.F		1 <sup>st</sup> Floor		2 <sup>nd</sup> Floor	
	Cross Sect. (m <sup>2</sup> )	Reinf.	Cross Sec. (m <sup>2</sup> )	Reinf.	Cross Sect. (m <sup>2</sup> )	Reinf.
C1	0.3×0.3	4 $\varnothing$ 18	0.25×0.3	4 $\varnothing$ 18	0.25×0.25	4 $\varnothing$ 16
C2	0.3×0.4	6 $\varnothing$ 18	0.25×0.4	6 $\varnothing$ 16	0.25×0.25	4 $\varnothing$ 16

**NOTE:** All columns, stirrups are 5  $\varnothing$  8/m'

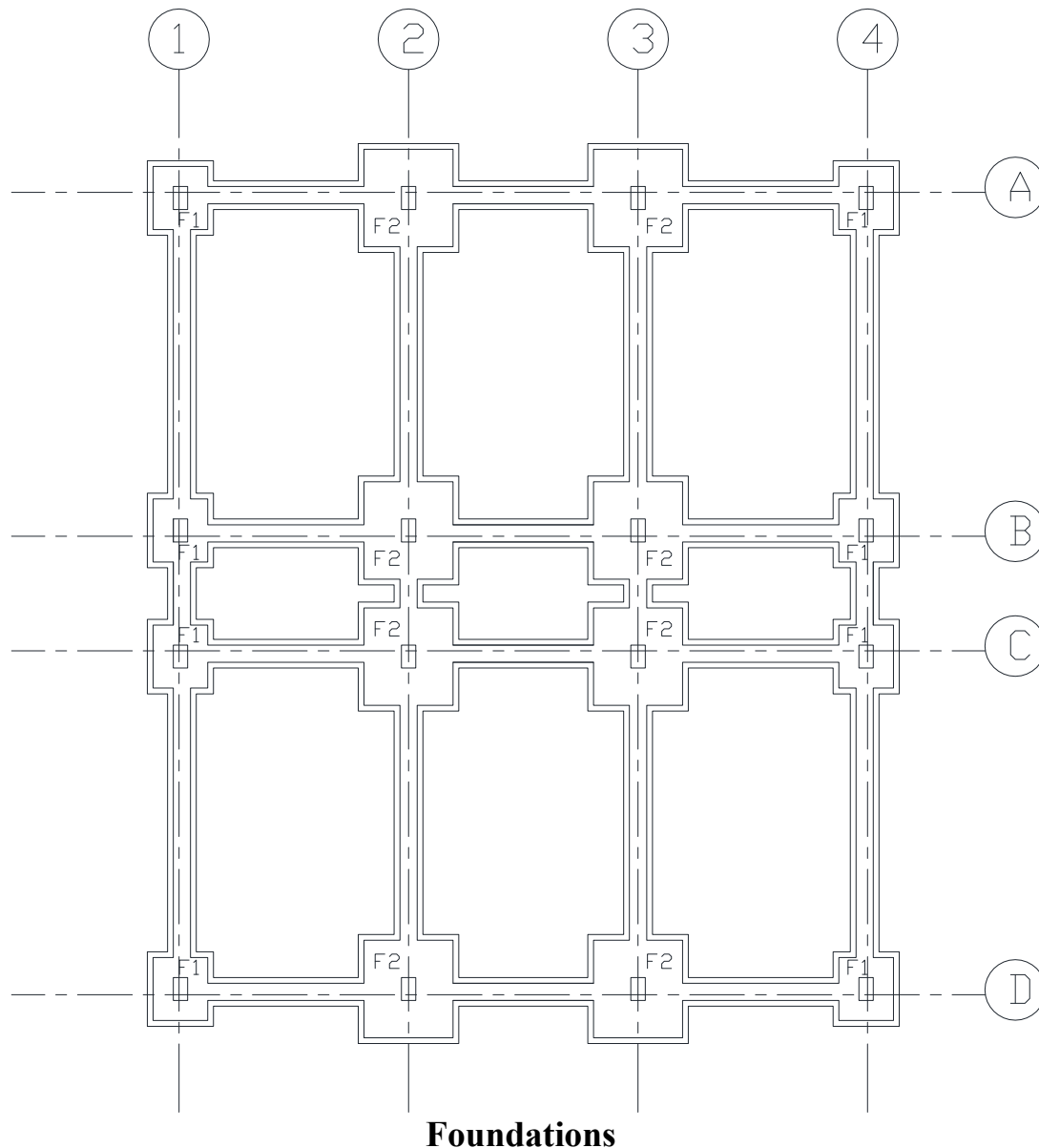
**Table (4): Beams**

Beams	b (mm)	t (mm)	Bottom Reinf.	Top Reinf.			Stirrups
				Left	Middle	Right	
B1	200	600	2 $\varnothing$ 18	2 $\varnothing$ 12	2 $\varnothing$ 10	2 $\varnothing$ 12	5 $\varnothing$ 8/m'
B2	200	600	3 $\varnothing$ 18	2 $\varnothing$ 16	2 $\varnothing$ 10	2 $\varnothing$ 16	7 $\varnothing$ 8/m'
B3	200	600	2 $\varnothing$ 16	2 $\varnothing$ 12	2 $\varnothing$ 10	2 $\varnothing$ 16	5 $\varnothing$ 8/m'

## 4 – Administrative Building

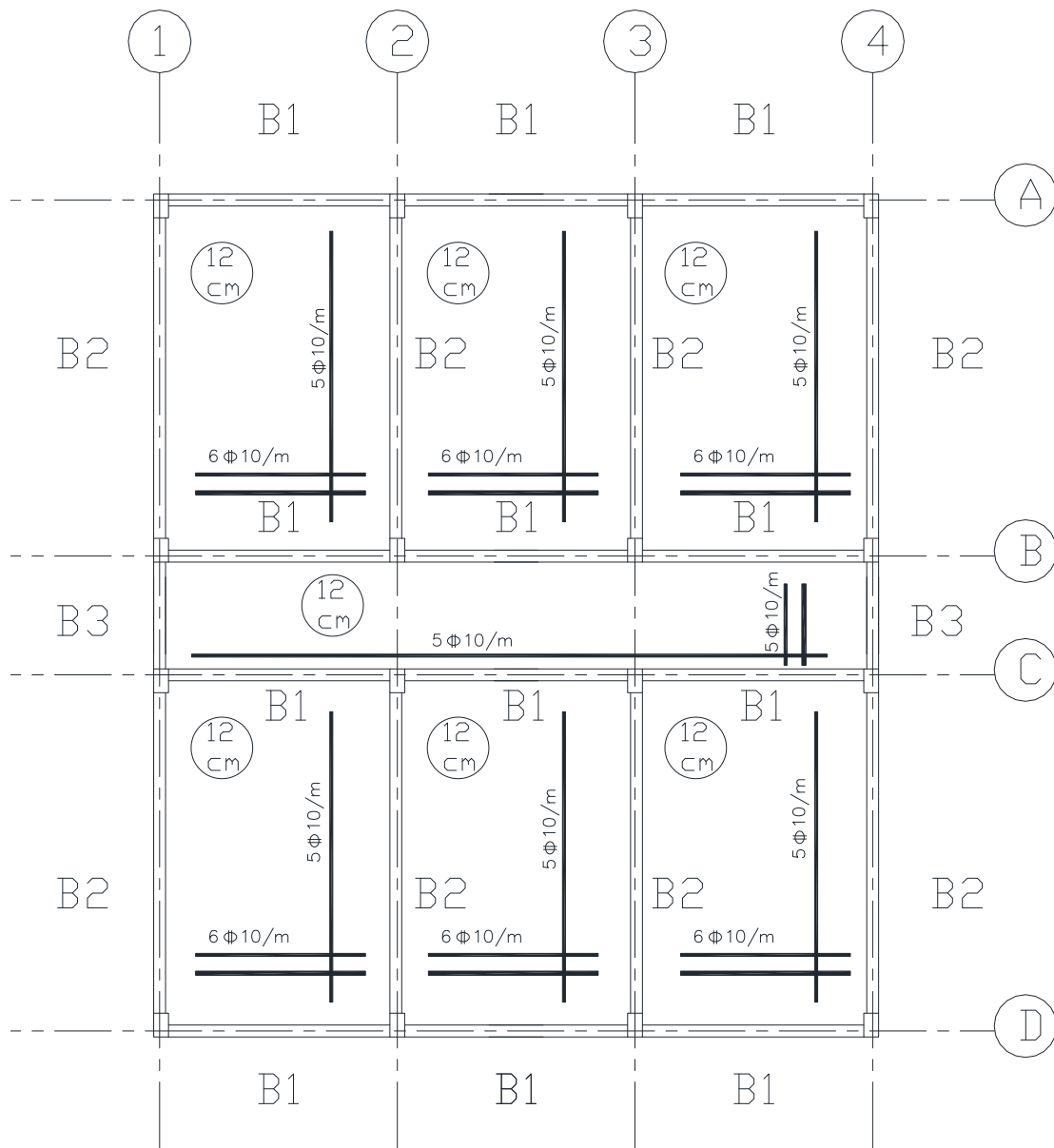


**Columns and axis**



- Foundation level is -1.20 m.
  - The thickness of plain concrete is 15 cm and overhangs 10 cm from each direction from the RC footings and ties.
  - All ties are 30 x 50 cm
  - Top and bottom reinforcement of all ties is 3  $\Phi$ 16.
- All ties have 8 mm stirrups every 20 cm.

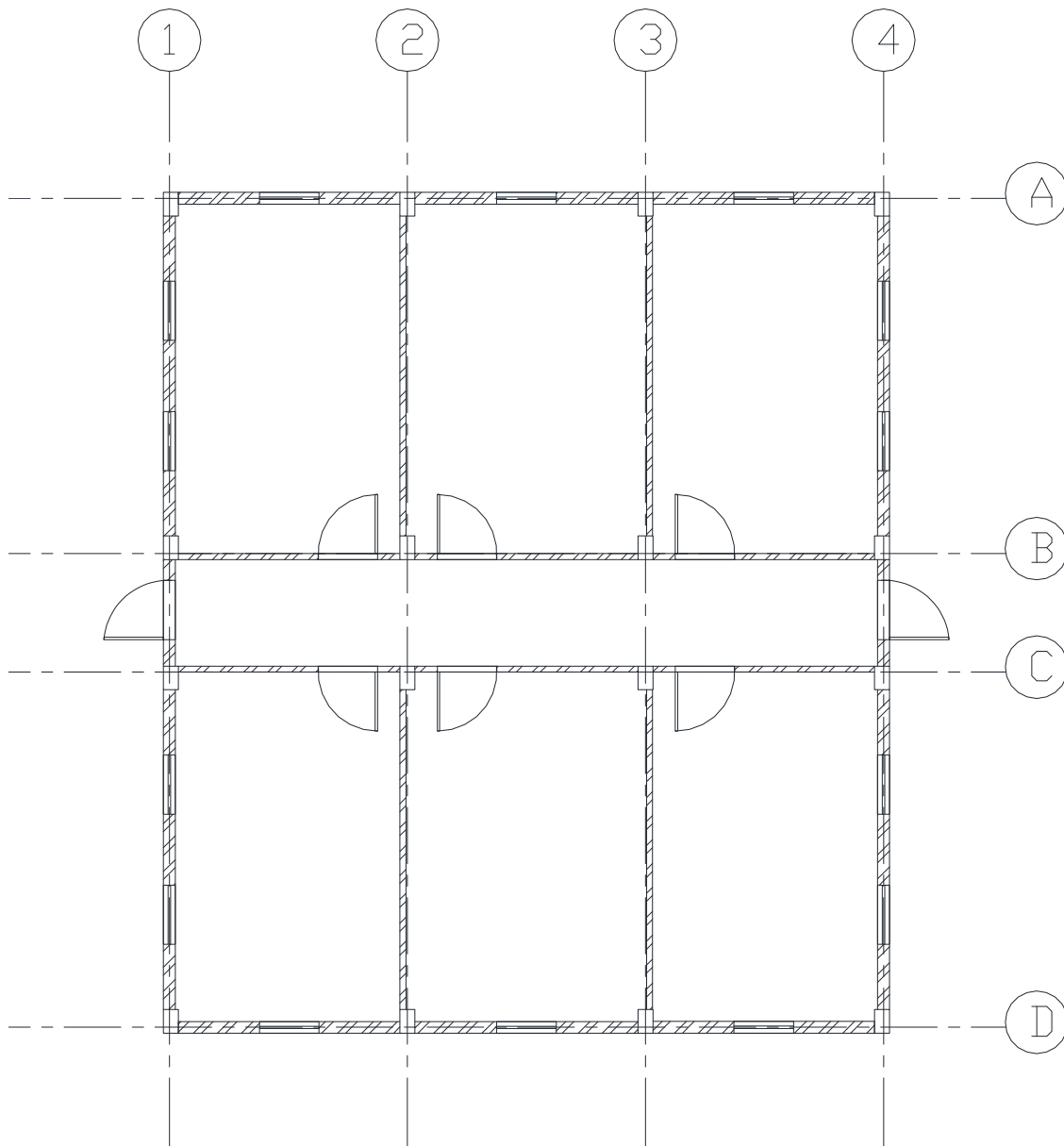
Footin g	Dimensions			Reinforcement	
	L	W	H	Short Directi on	Long Directi on
F1	0.95	1.10	0.50	6 $\Phi$ 12	6 $\Phi$ 12
F2	1.55	1.70	0.50	9 $\Phi$ 12	10 $\Phi$ 12



### Roof reinforcement details

- The level of the roof slab is 3.50 m.

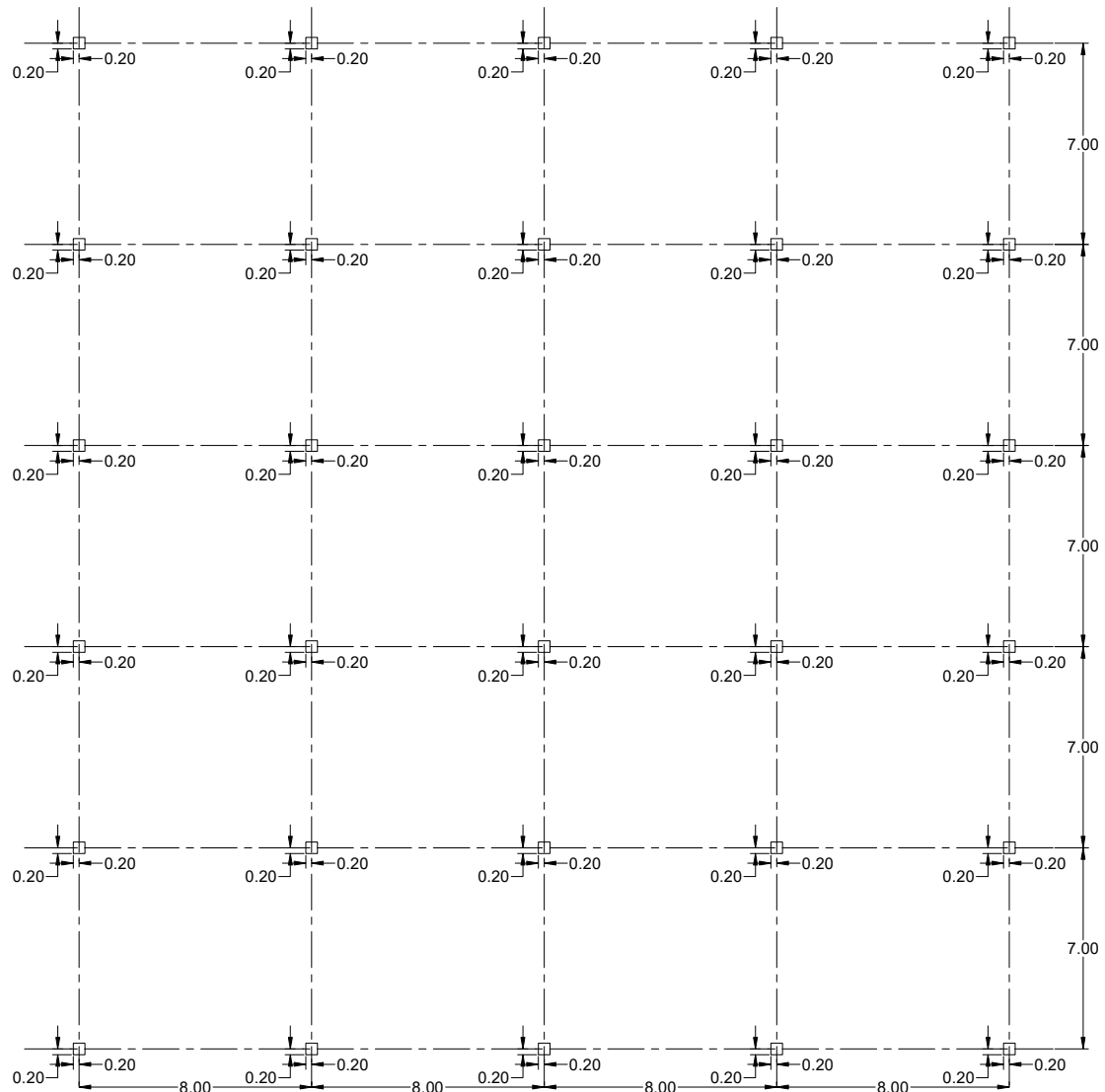
Beam	Dim. in cm		Reinforcement				Stirrups		
	W	H	Bottom	Top (internal support)	Top hanging steel	Top (external support)	Left quarter	Mid	Right quarter
B1	20	70	3 $\Phi 16$	3 $\Phi 16$	2 $\Phi 12$	2 $\Phi 16$	$\Phi 8/20$	$\Phi 8/20$	$\Phi 8/20$
B2	20	70	5 $\Phi 18$	5 $\Phi 18$	3 $\Phi 12$	3 $\Phi 16$	$\Phi 8/20$	$\Phi 8/20$	$\Phi 8/20$
B3	20	70	2 12	-	-	-	$\Phi 8/15$	$\Phi 8/20$	$\Phi 8/15$



**Architectural Plan**

- All Internal walls are 10 cm thick.
- All external walls and parapet are 20 cm thick
- All windows are 120 x 100 cm
- All doors are 100 x 220 cm.

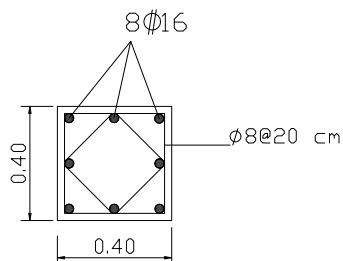
## 5 – Warehouse

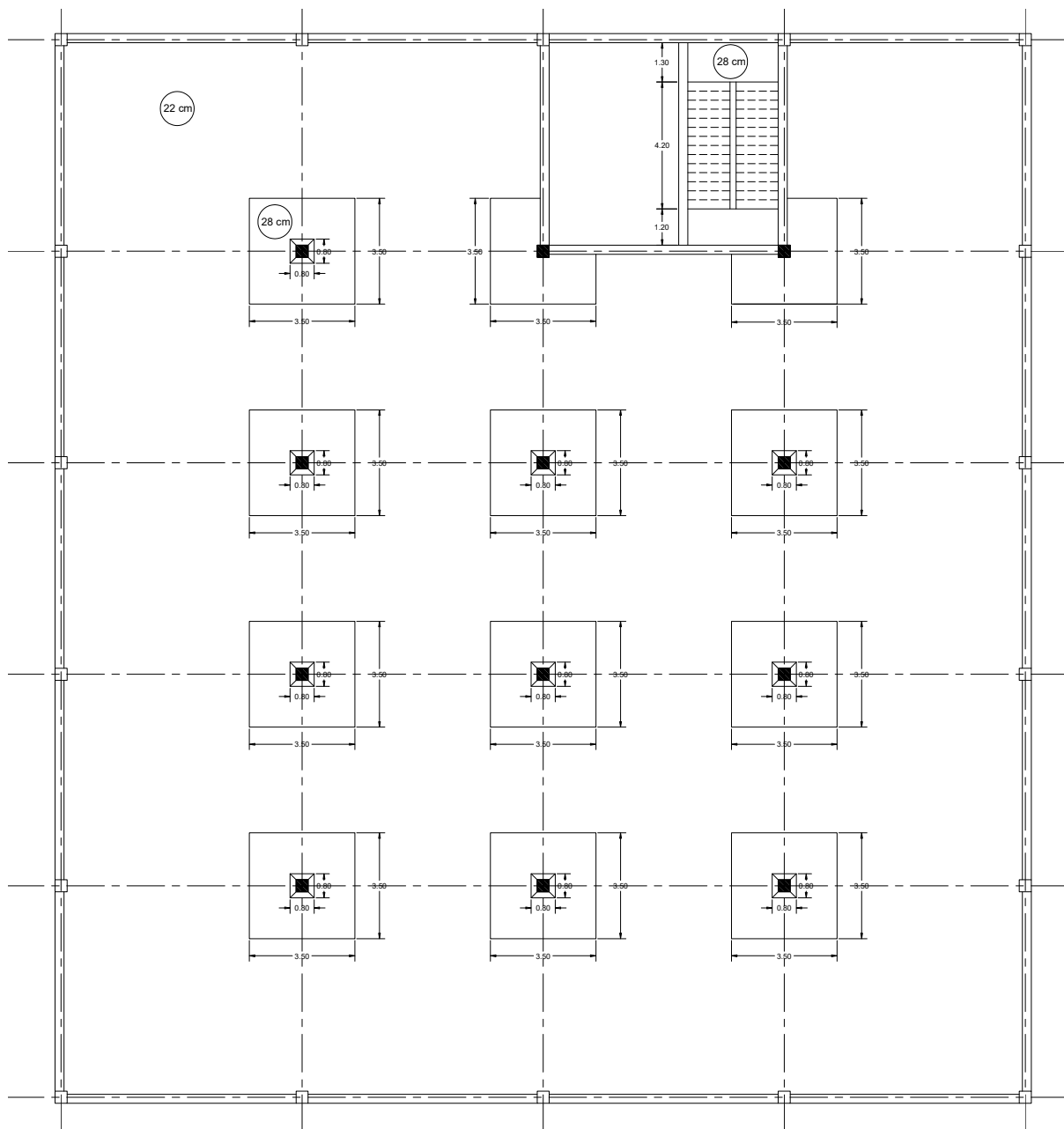


### Columns and axis

- All columns are C1
- Foundation level is -1.7 m
- Plain concrete thickness is 20 cm
- All footings are 60 cm thick

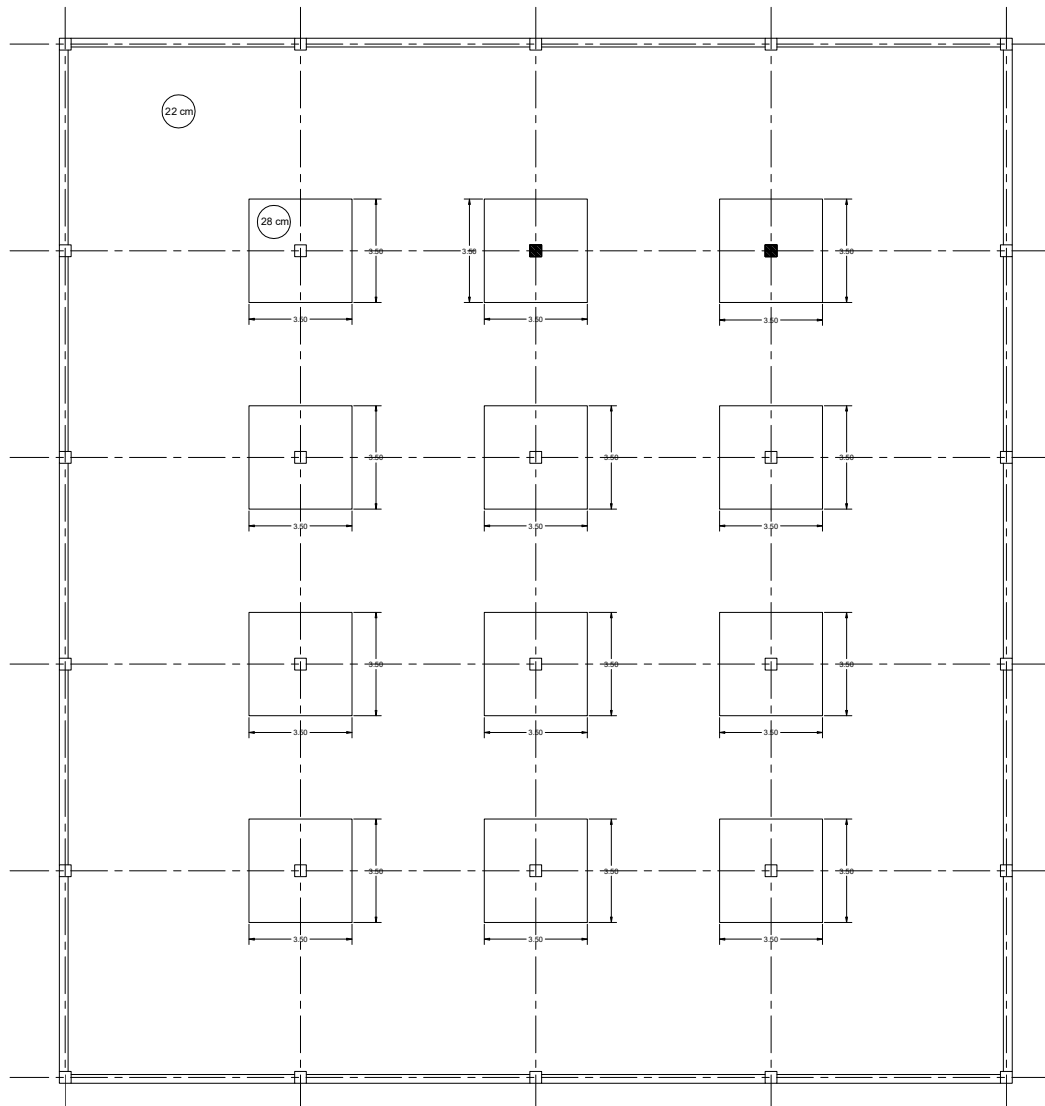
Column C1





All beams are 30 × 70 cm

**Ground floor roof (level +4.50 m)**



All beams are  $30 \times 70$  cm

**Ground floor roof (level +8.50 m)**

### Assignment 2

Calculate the volume of excavation, plain concrete and RC foundations for each of the following structures in the data sheet:

- Wall fences 1, 2, 3 and 4.
- Building 1
- Building 2
- Administrative Building

### Assignment 3

Calculate the volume of RC and brickworks for each of the following structures in the data sheet:

- Wall fences 1, 2, 3 and 4.
- Building 2
- Administrative Building
- Warehouse

#### **Assignment 4**

Calculate the quantities of backfill and insulation for each of the following structures in the data sheet:

- Wall fences 1, 2, 3 and 4.
- Building 1
- Building 2
- Administrative Building

#### **Assignment 5**

Prepare the Bar Bending Schedule for all RC in each of the following structures in the data sheet:

- Building 2
- Administrative Building

#### **Assignment 6**

Calculate the quantities for all the finishing works in each of the following structures in the data sheet:

- Administrative Building