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Chickballapur - 562 101, Karnataka
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Department of Civil Engineering



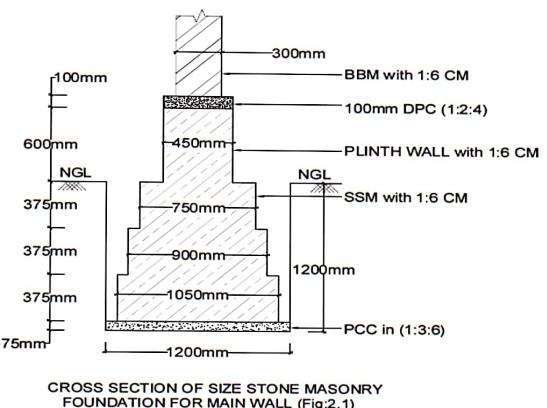
Laboratory Manual

**Computer Aided Building Planning & Drawing
18CVL37**



Prepared by
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Assistant Professor

Approved by
Dr. G Narayana
Professor and Head

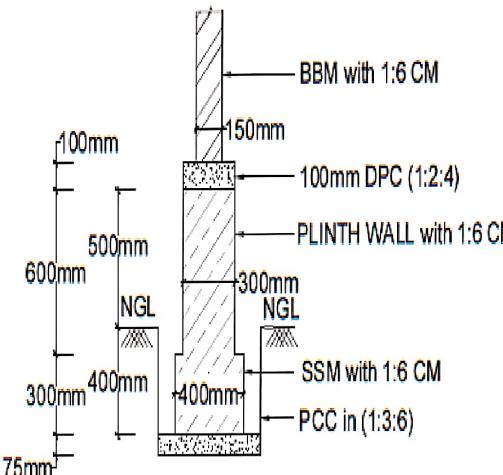


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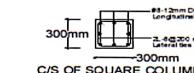
**Signature of the Teacher
(In charge of the Batch)**

Head of the Department

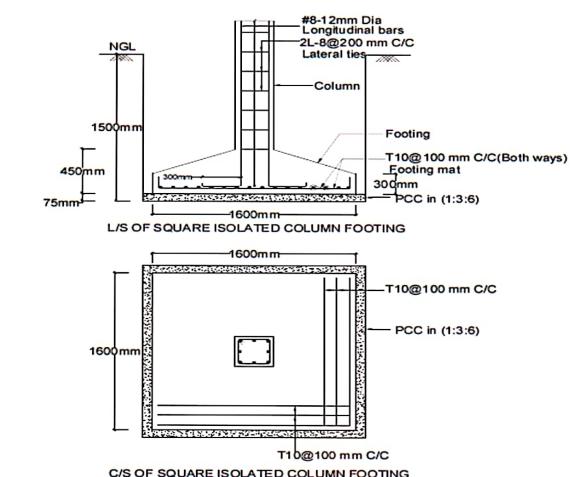


CROSS SECTION OF SIZE STONE MASONRY FOUNDATION FOR PARTITION WALL (Fig.2.2)

SQUARE ISOLATED COLUMN FOOTING(Fig:2.3)

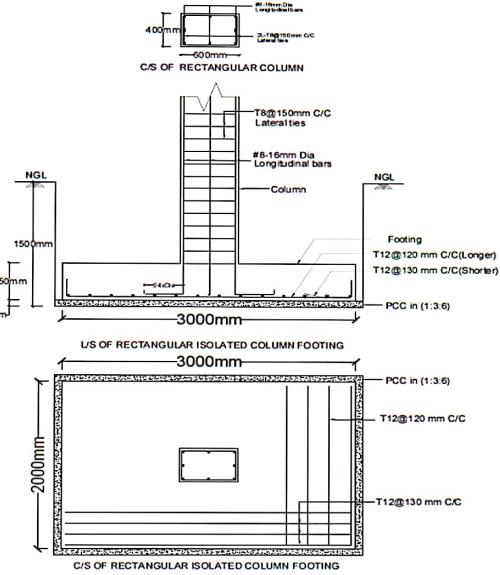


300mm

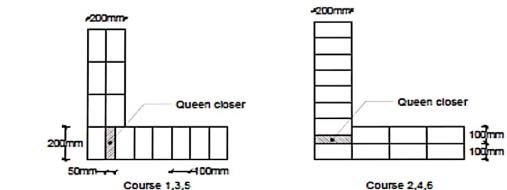
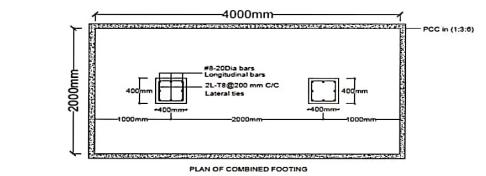


110@100 mm C/C

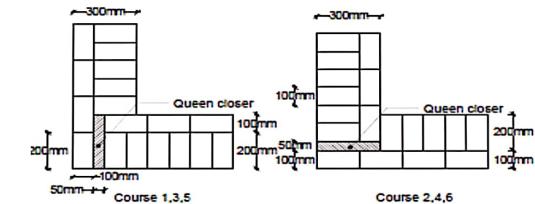
RECTANGULAR ISOLATED COLUMN FOOTING(Fig:2.4)



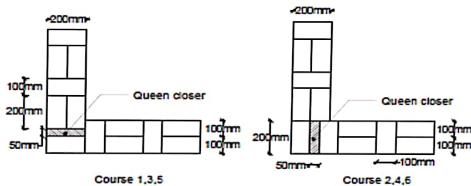
SLAB TYPE COMBINED FOOTING(Fig:2.5)



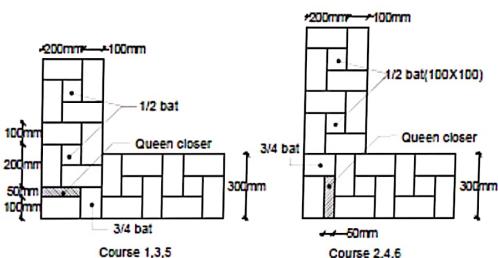
**ENGLISH BOND
ONE BRICK WALL 200X200(Fig:2.6a)**



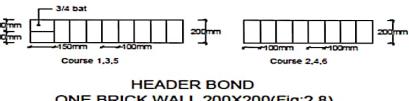
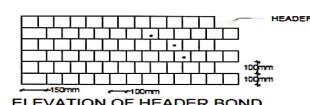
**ENGLISH BOND
ONE AND HALF BRICK WALL 300X300(Fig:2.6b)**



**DOUBLE FLEMISH BOND
ONE BRICK WALL 200X200(Fig:2.7a)**



**DOUBLE FLEMISH BOND
ONE AND HALF BRICK WALL 300X300(Fig:2.7b)**

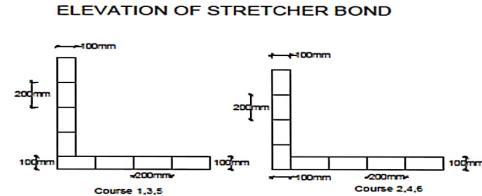
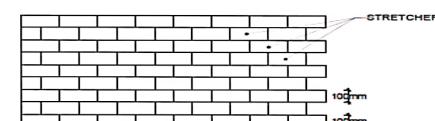


**ELEVATION OF HEADER BOND
ONE BRICK WALL 200X200(Fig:2.8)**

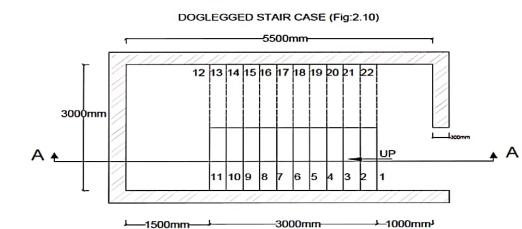
Exercise 2.9

Draw plan and elevation two alternate courses and elevation of a half brick thick wall in Stretcher bond.

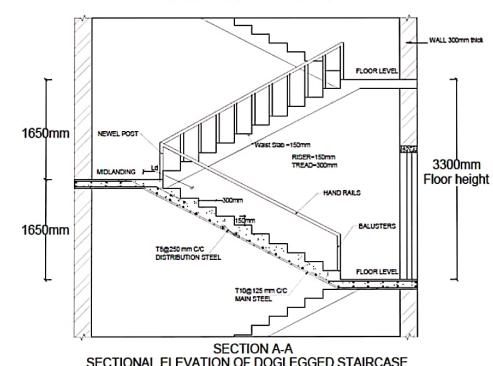
Solution: Refer Fig. 2.9



**ELEVATION OF STRETCHER BOND
ONE BRICK WALL 200X200(Fig:2.9)**

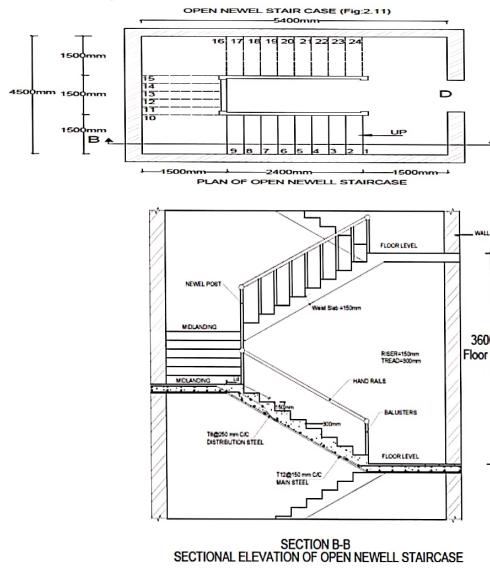


PLAN OF DOGLEGGED STAIRCASE

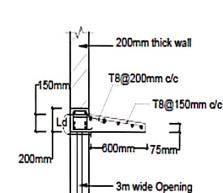
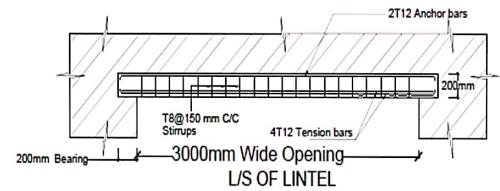


**SECTION A-A
SECTIONAL ELEVATION OF DOGLEGGED STAIRCASE**

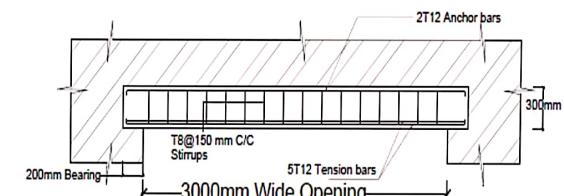
Solution: Refer Fig. 2.11



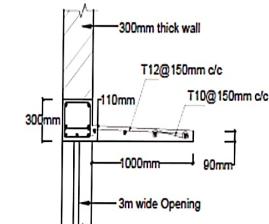
LINTEL AND SUNSHADE (Fig:2.12)



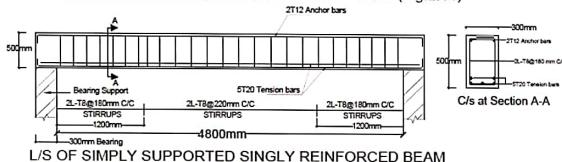
LINTEL AND CHEJJA (Fig:2.13)



L/S OF LINTEL



SIMPLY SUPPORTED SIMPLY REINFORCED BEAM (Fig:2.14)



Exercise 2.15

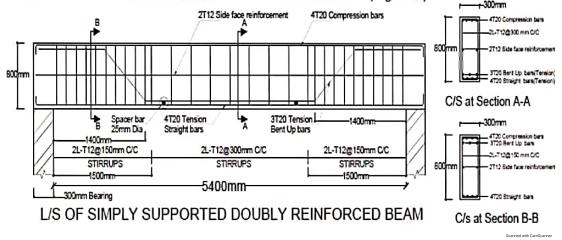
Draw a detailed longitudinal section, a cross section near the supports and a section at the middle of the span of a simply supported doubly reinforced beam for the following data:
Clear span = 5.4m, Bearing over the supports = 300mm, Size = 300 x 800 mm
Main reinforcement tensile: #7 - 25φ, 4 straight and 3 bent up @ 1400mm from support.
Compression reinforcement: #4 - 25φ.

Spacer bars=25 φ, Side face reinforcement=#2-12φ

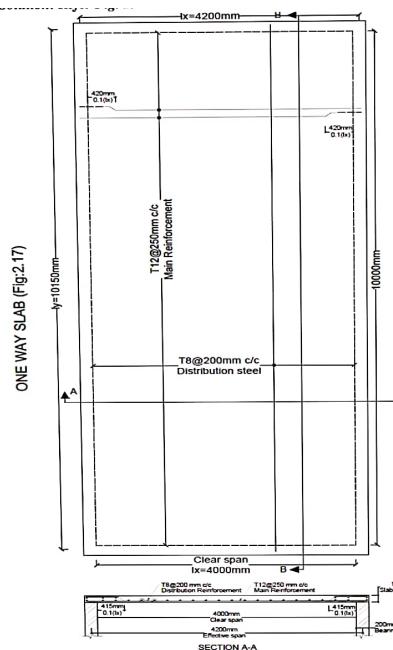
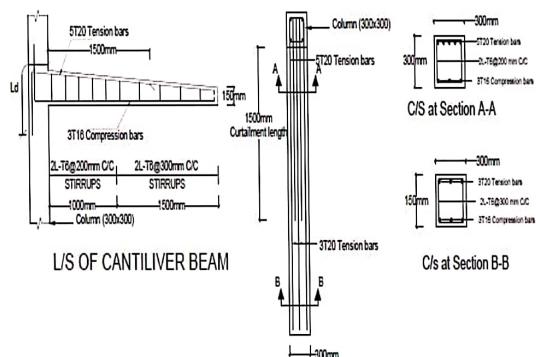
Shear reinforcement: 2L - 12φ @ 150 c/c for a distance of 1.5m from the support and 2L - 12φ @ 300 c/c for remaining middle portion.

Solution: Refer Fig. 2.15

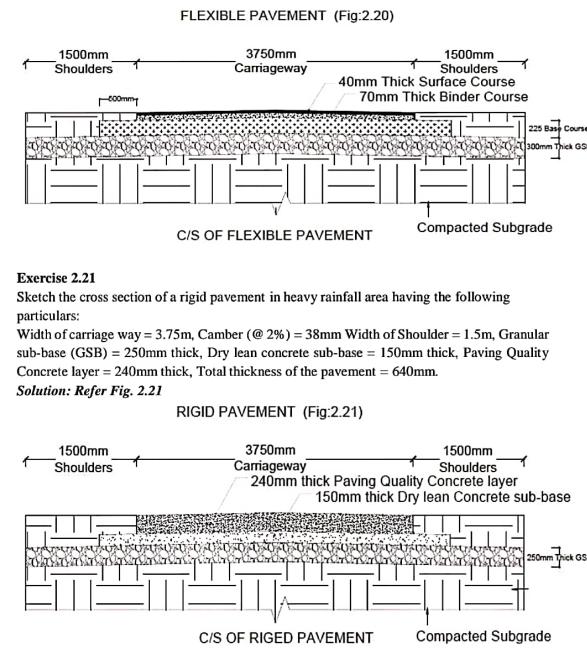
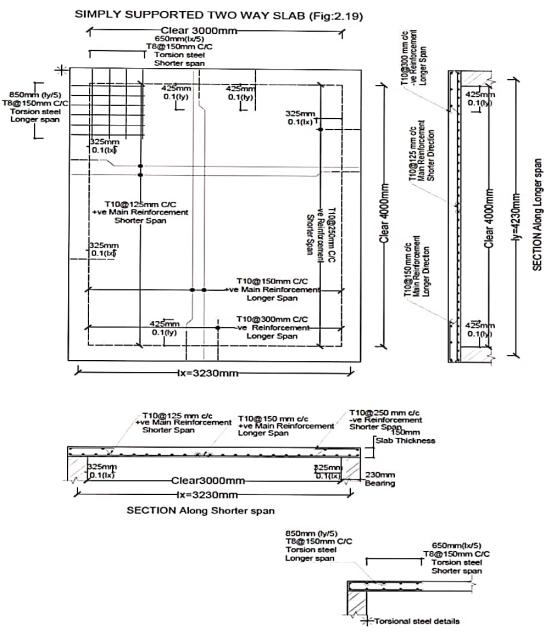
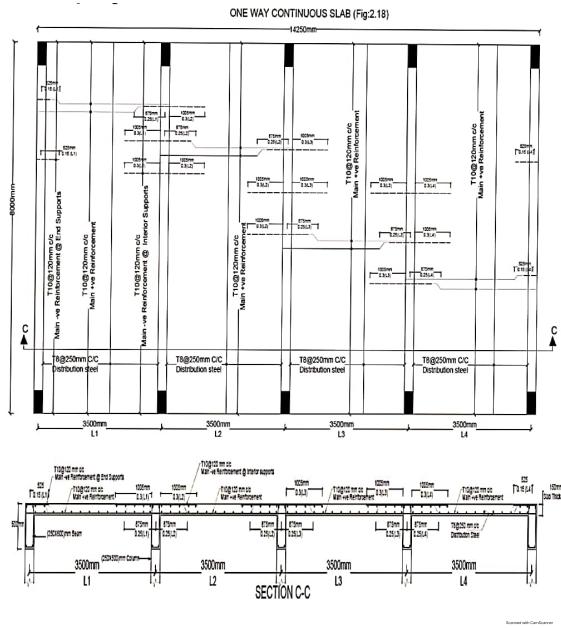
SIMPLY SUPPORTED DOUBLY REINFORCED BEAM (Fig:2.15)



CANTILEVER BEAM (Fig:2.16)



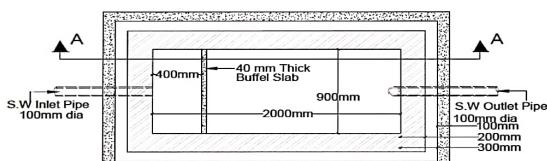
SECTION B-B



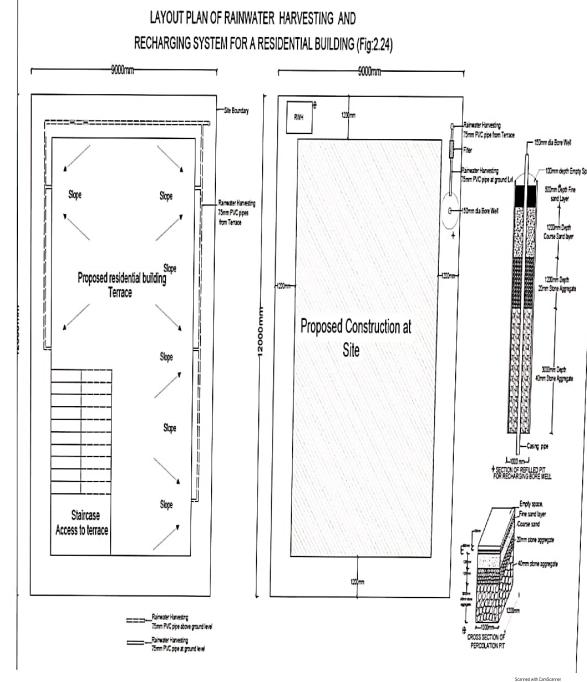
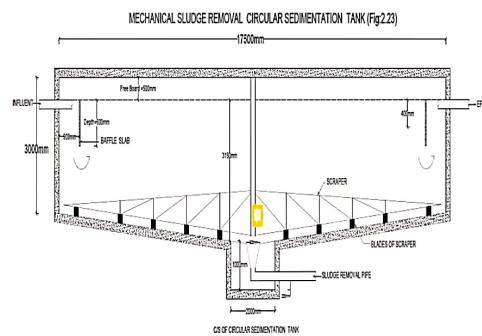
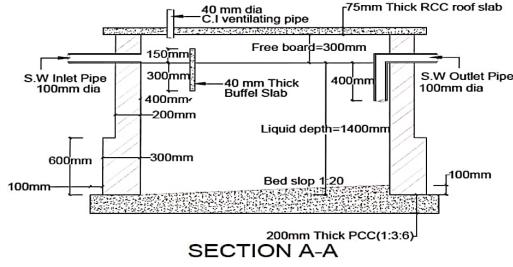
Exercise 2.21
Sketch the cross section of a rigid pavement in heavy rainfall area having the following particulars:
Width of carriageway = 3.75m, Camber (@ 2%) = 38mm Width of Shoulder = 1.5m, Granular sub-base (GSB) = 250mm thick, Dry lean concrete sub-base = 150mm thick, Paving Quality Concrete layer = 240mm thick, Total thickness of the pavement = 640mm.

Solution: Refer Fig. 2.21

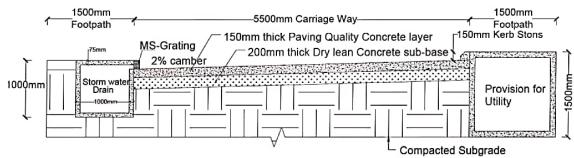
SEPTIC TANK (Fig:2.22)



PLAN OF SEPTIC TANK



Cross sectional details of a Road for a Residential area with provision for all Services (Fig:2.25)



J. STEEL TRUSS (BOLTED CONNECTIONS)

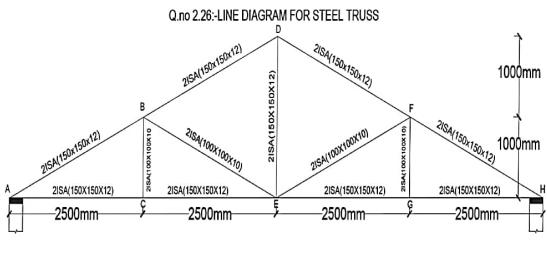
Exercise 2.26

Draw the elevation of the given steel roof truss and show the connection details at joint A and E using the data given in figure.

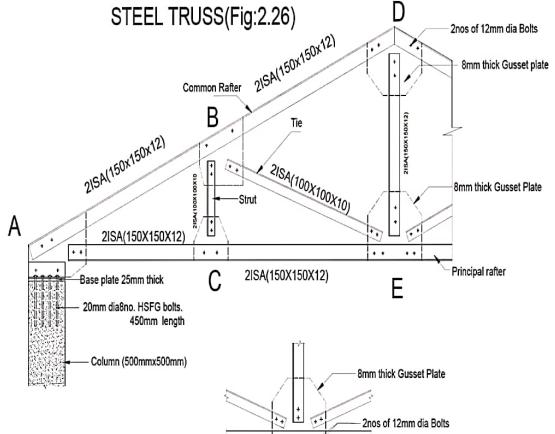
- 8mm thick gusset plate
- Use 2 numbers of 12g HSF bolts for each connection
- Truss is supported on a concrete column of size (500 x 500)mm
- Thickness of the base plate = 25mm
- Anchor bolts of 450mm length and 25φ - 8 numbers at the connection of truss and column.
- Column height = 3000mm

Solution: Refer Fig. 2.26

Q.no.2.26:LINE DIAGRAM FOR STEEL TRUSS

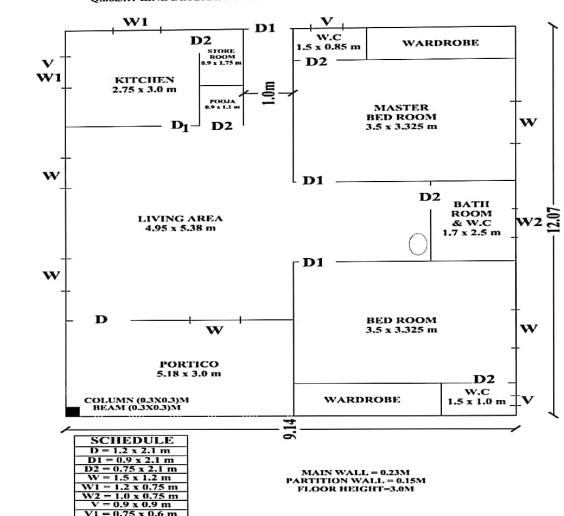


STEEL TRUSS(Fig:2.26)

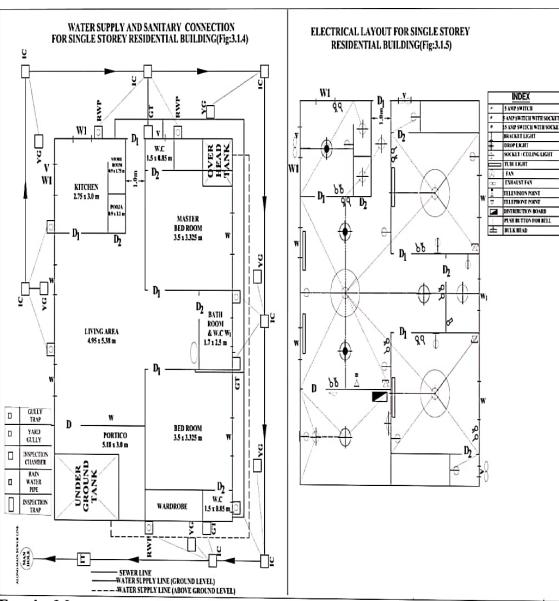


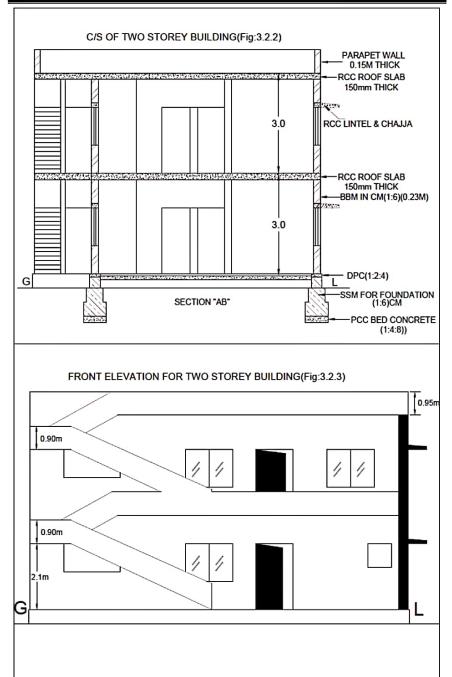
Detail at E

Q.no.3.1:LINE DIAGRAM OF SINGLE STOREY RESIDENTIAL BUILDING



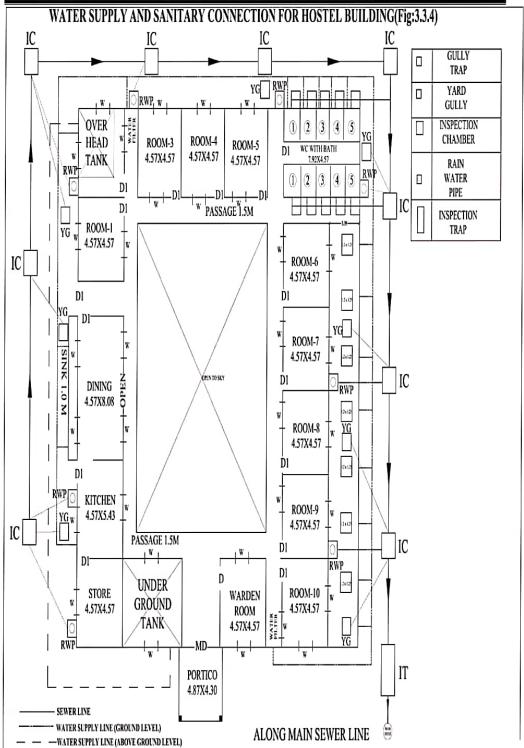
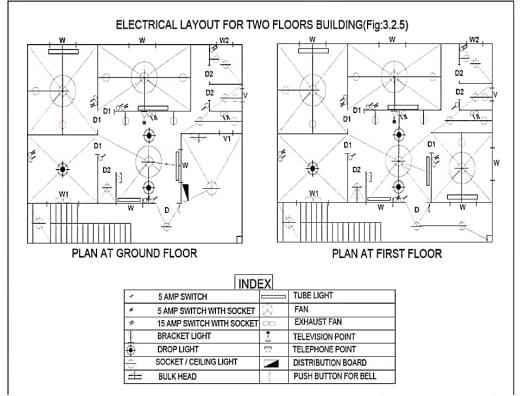
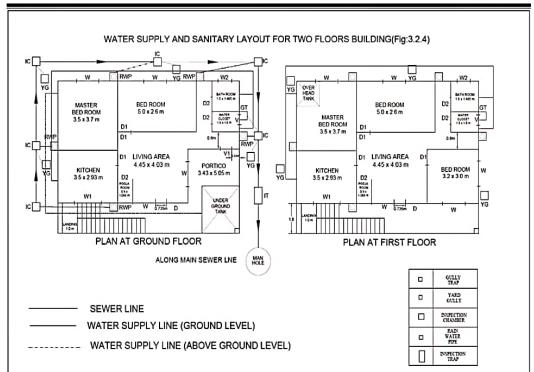
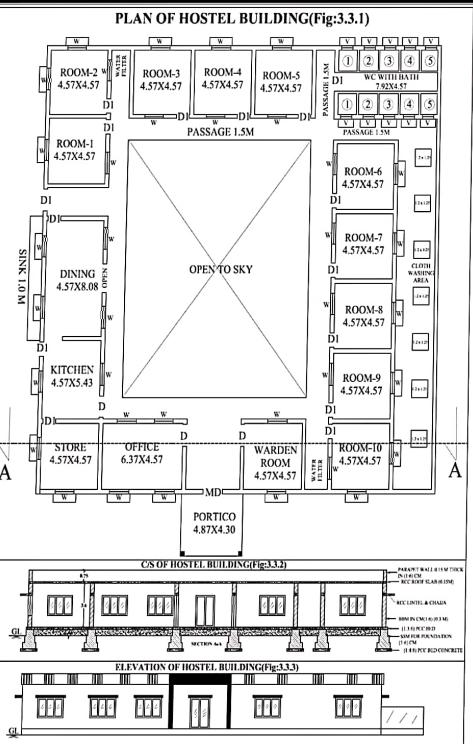
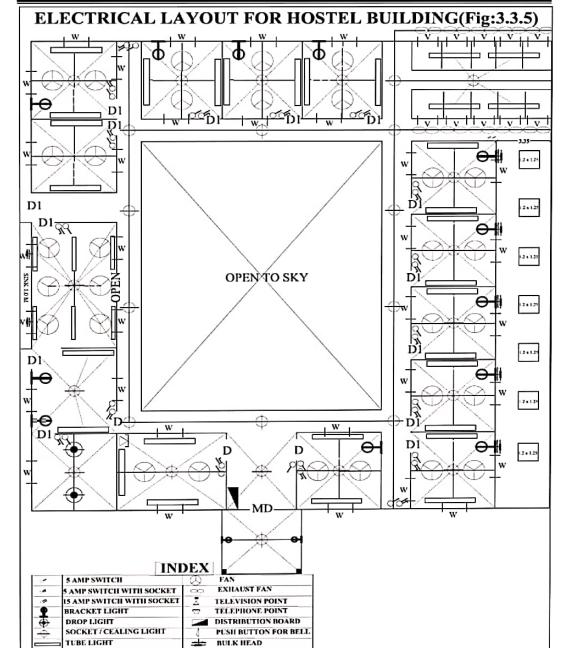
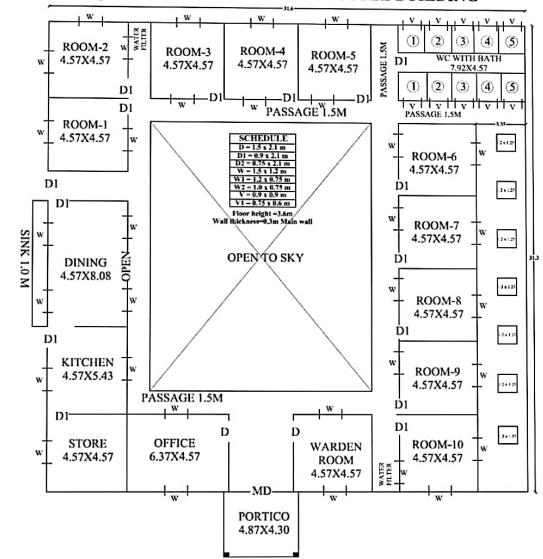
COMPUTER AIDED BUILDING PLANNING AND DRAWING (18CVL37)

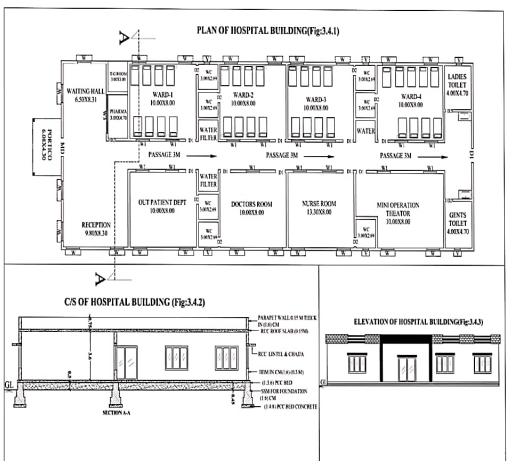
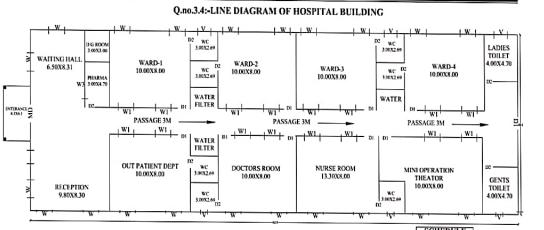




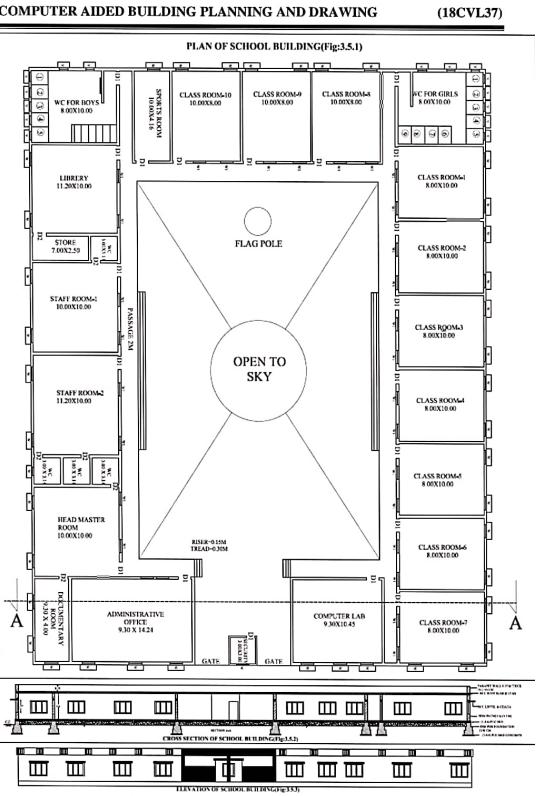
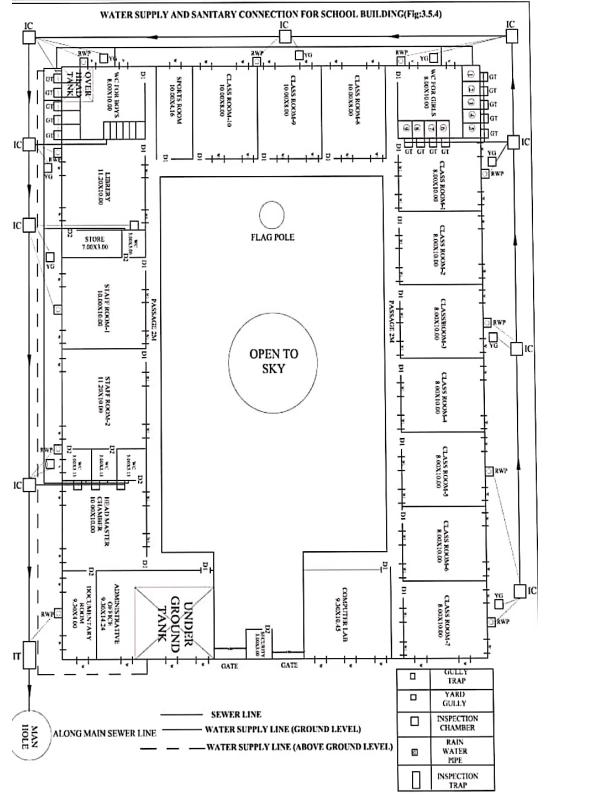
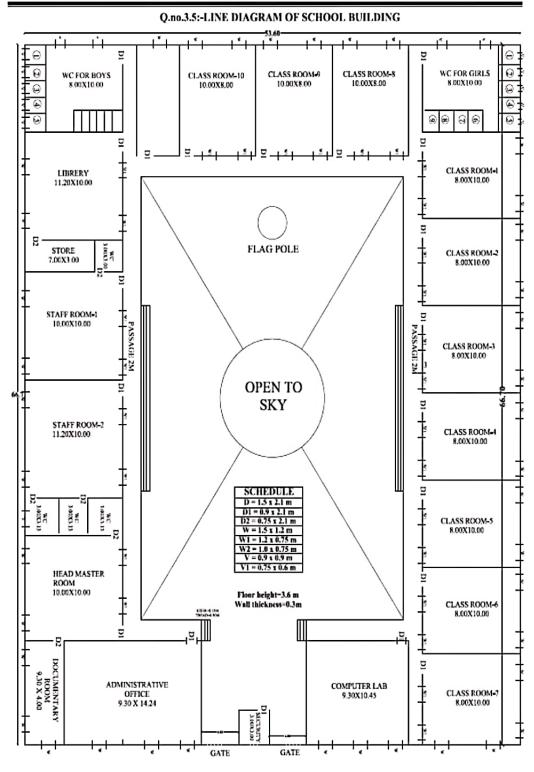
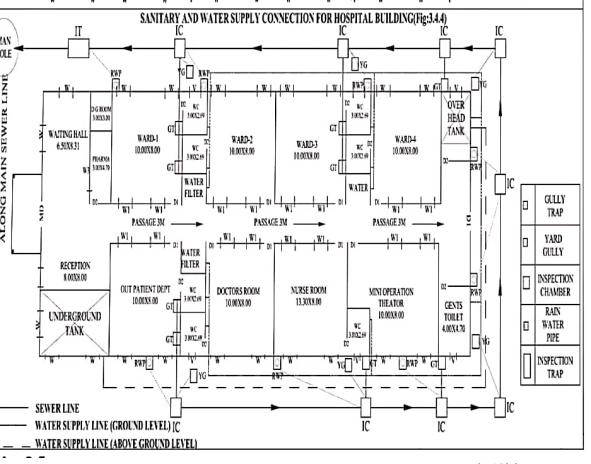
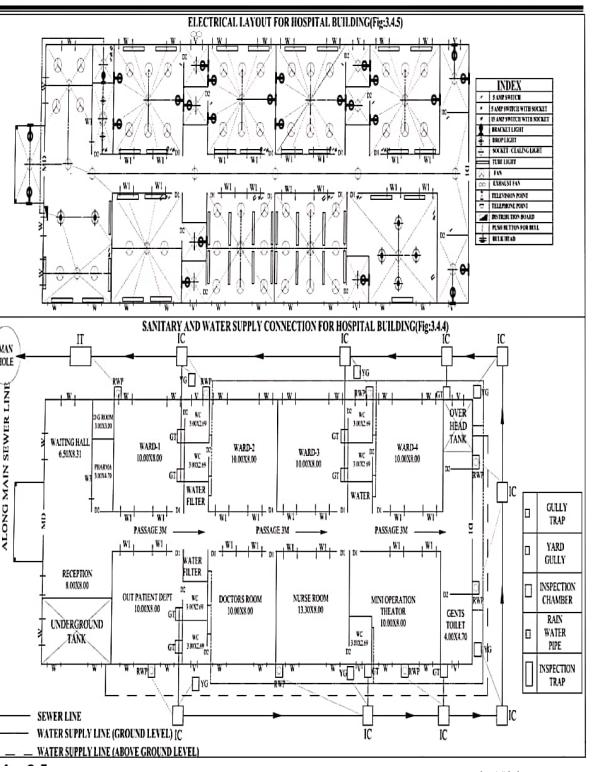
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**Q.no.3.3:-LINE DIAGRAM OF HOSTEL BUILDING**



C/S OF HOSPITAL BUILDING (Fig3.4.2)
ELEVATION OF HOSPITAL BUILDING(Fig3.4.3)



CROSS SECTION OF SCHOOL BUILDING(Fig3.5.2)
ELEVATION OF SCHOOL BUILDING(Fig3.5.3)

