

EXPERIMENT NO: Module -3

TITLE: DRAWING OF PLAN, ELEVATION AND SECTIONAL ELEVATION OF SINGLE STORIED RESIDENTIAL AND PUBLIC BUILDINGS GIVEN THE SINGLE LINE DIAGRAM AND PREPARING THE EXCAVATION PLAN

LEARNING OBJECTIVES:

- To know to draw the plan, elevation and sectional elevation of residential building.
- To understand to prepare the plan, elevation and sectional elevation of public building.
- To study the excavation plan for buildings.

AIM:

- To prepare the plan, elevation and sectional elevation of residential building, public building and the excavation plan.
- Computer with AutoCAD software.

THEORY / HYPOTHESIS:

- When architects design buildings, they have to do 2D drawings to show what the building will look like from each side. These drawings are called plans and elevations. The view from the top is called the plan. The views from the front and sides are called the elevations.

3.1 Principles of planning

Plan of a building is the assembling or grouping of arranging of its component parts in a systematic manner and proper order so as to form a meaningful wholesome and homogeneous body.

Planning of building depends on its;

- Its functional object and requirements.
- Its component parts, their sizes and the relationship between the different rooms.
- Shape of the plot and topography
- Climatic conditions of the place.
- Its location and neighbourhood
- Type of the buildings like single storied/ multi storied or detached/ semidetached/ row houses.

The factors or principles which govern the theory of planning are Aspects, Prospect, Privacy, Furniture requirement, Grouping, Circulation, Sanitation, Flexibility, Elegance, Economy, Practical consideration.

3.2 Building Bye-laws

Minimum provisions designed from National Building Code by Town Planning Authorities, Urban Development Authorities and Municipalities. The building bye-laws and regulations should be enforced by proper authority to achieve following objectives.

1. They prohibit and prevent haphazard and irregular growth as ribbon development and permit disciplined and systematic growth of buildings along roads by clearly earmarking residential, commercial, industrial areas, etc.
2. They regulate the open space around the building, window area and head rooms, thereby creating conducive conditions for natural lighting and ventilation.
3. The standard dimensions for various structural members are specified which give strength and long life for the building.
4. The bye-laws regulate the planning, designing and execution of building elements.
5. The bye-laws enable the inmates to easily get access to utilities as piped water

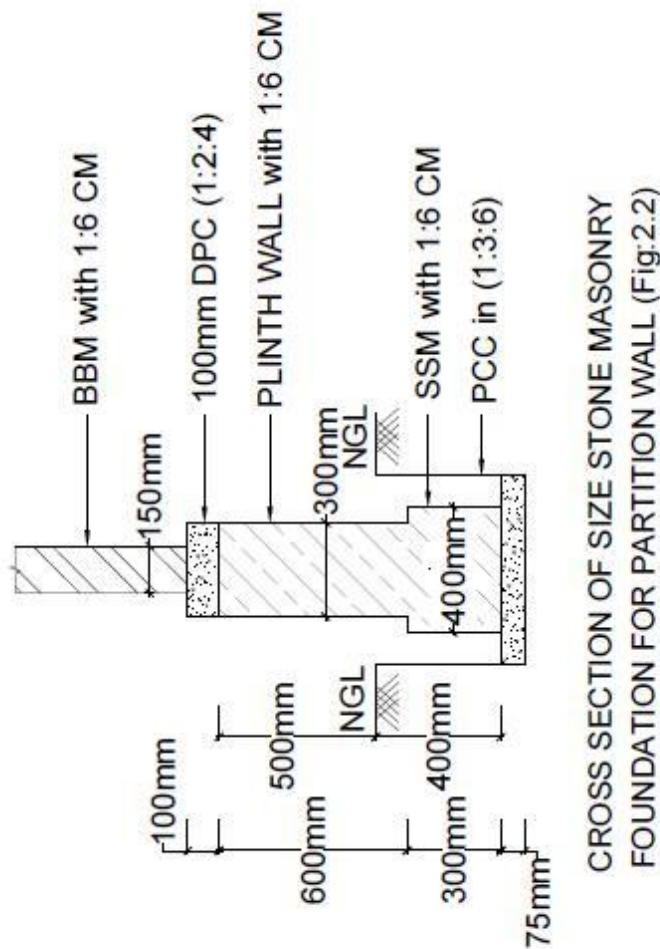
supply, electric power and connection to public sewer.

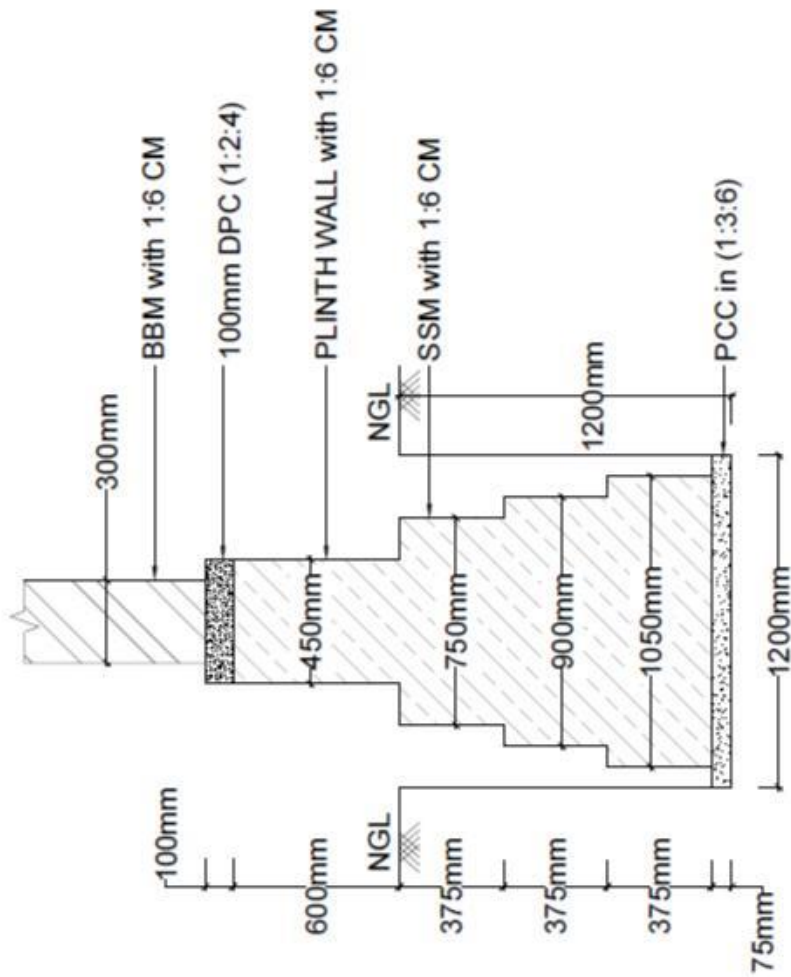
6. The growth of township is streamlined by maintaining uniform height of buildings, uniform frontage so that the abutting road is straight, gently sloping, free from blind corners and can be easily widened in future if required.

3.3 Drawing of plan, elevation and sectional elevation including electrical, plumbing and sanitary services using CAD software for following exercises:

Exercise 3.1

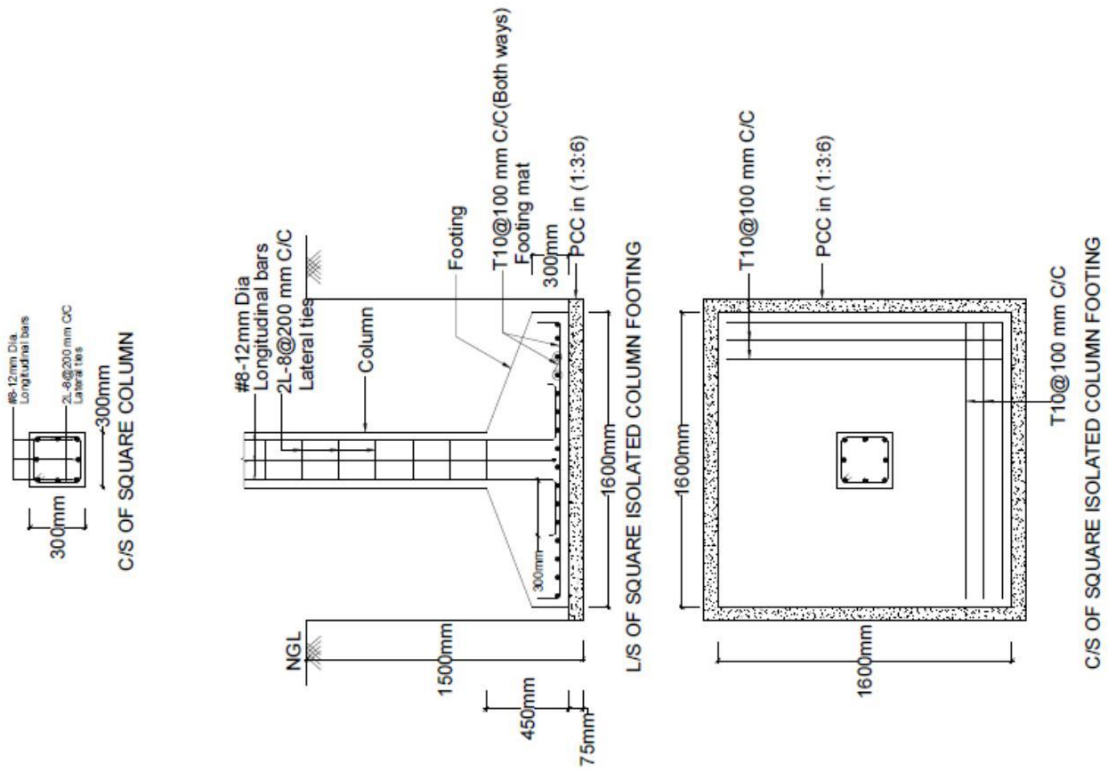
Draw plan, elevation and sectional elevation including electrical plumbing and sanitary services for a given line diagram of single storey residential building in figure Q.no.3.1.



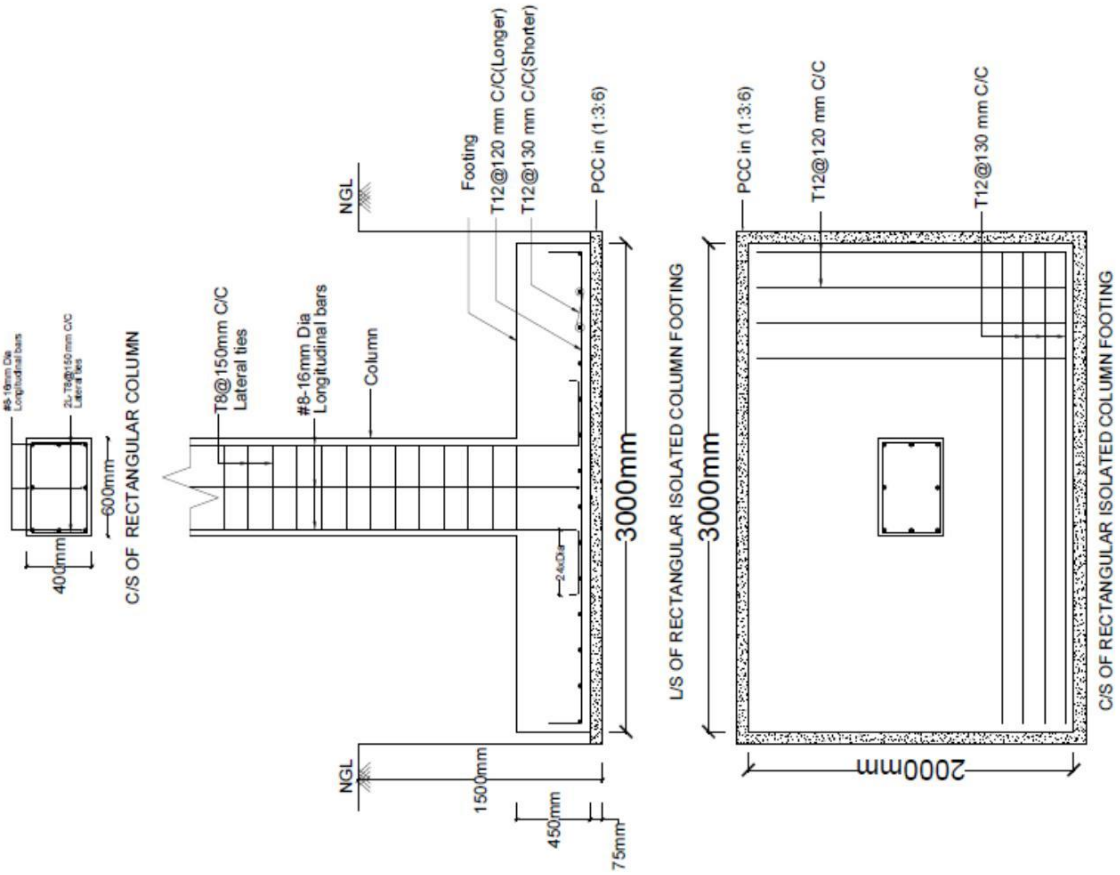


CROSS SECTION OF SIZE STONE MASONRY
FOUNDATION FOR MAIN WALL (Fig:2.1)

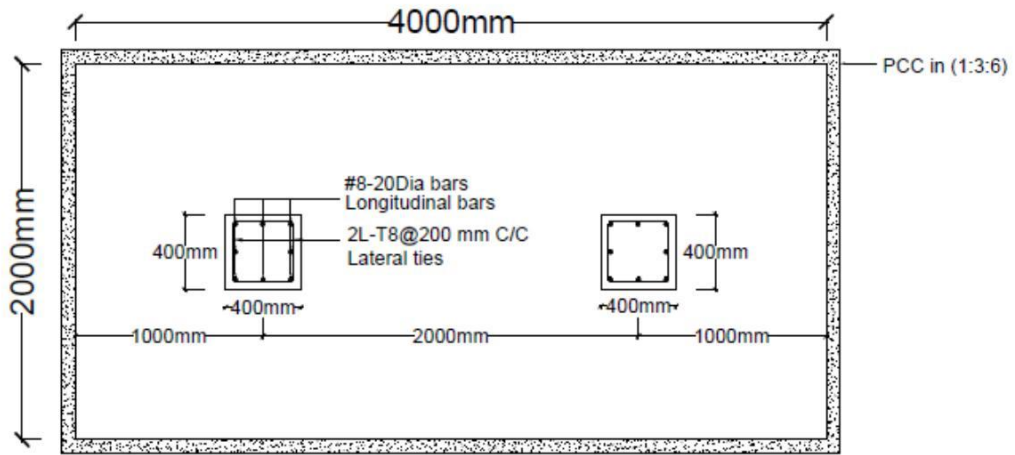
SQUARE ISOLATED COLUMN FOOTING(Fig:2.3)



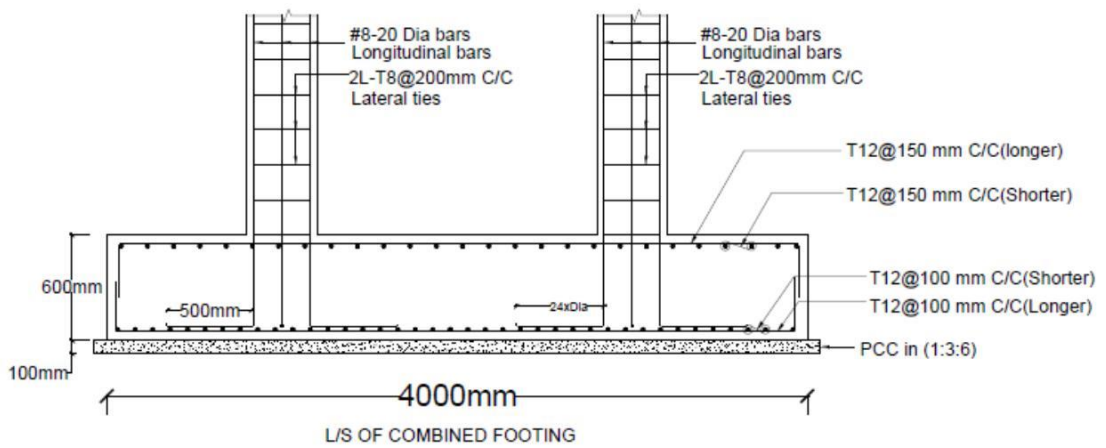
RECTANGULAR ISOLATED COLUMN FOOTING(Fig:2.4)

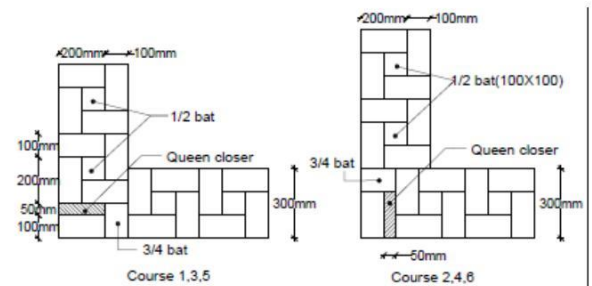
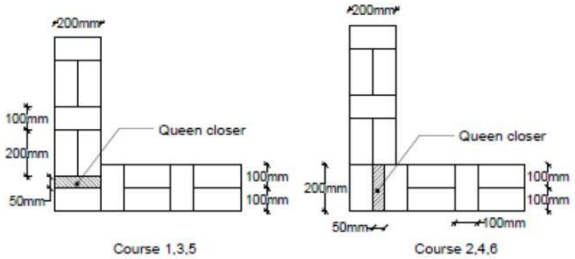
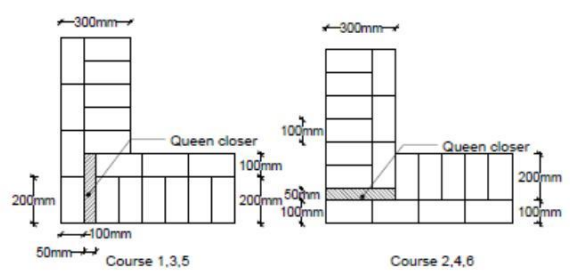
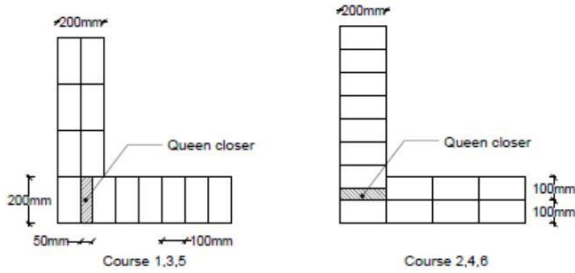
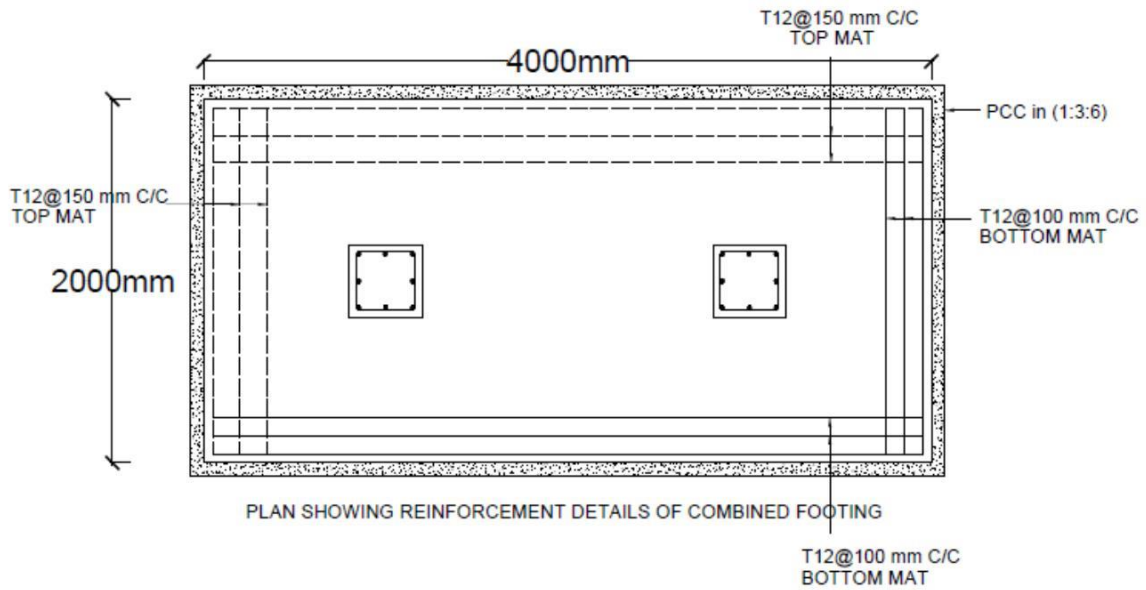


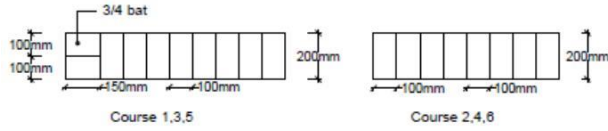
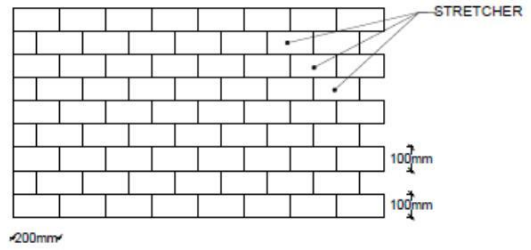
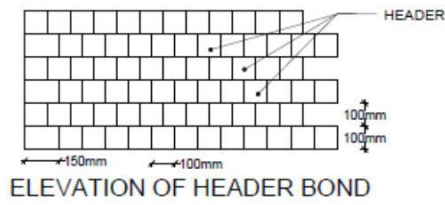
SLAB TYPE COMBINED FOOTING(Fig:2.5)



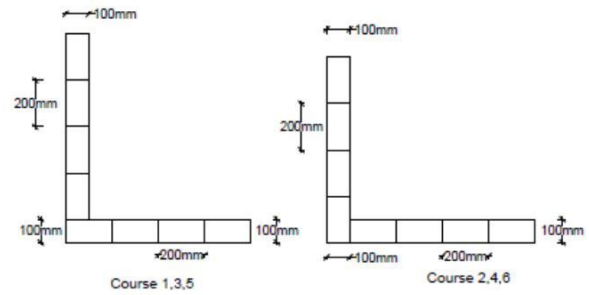
PLAN OF COMBINED FOOTING





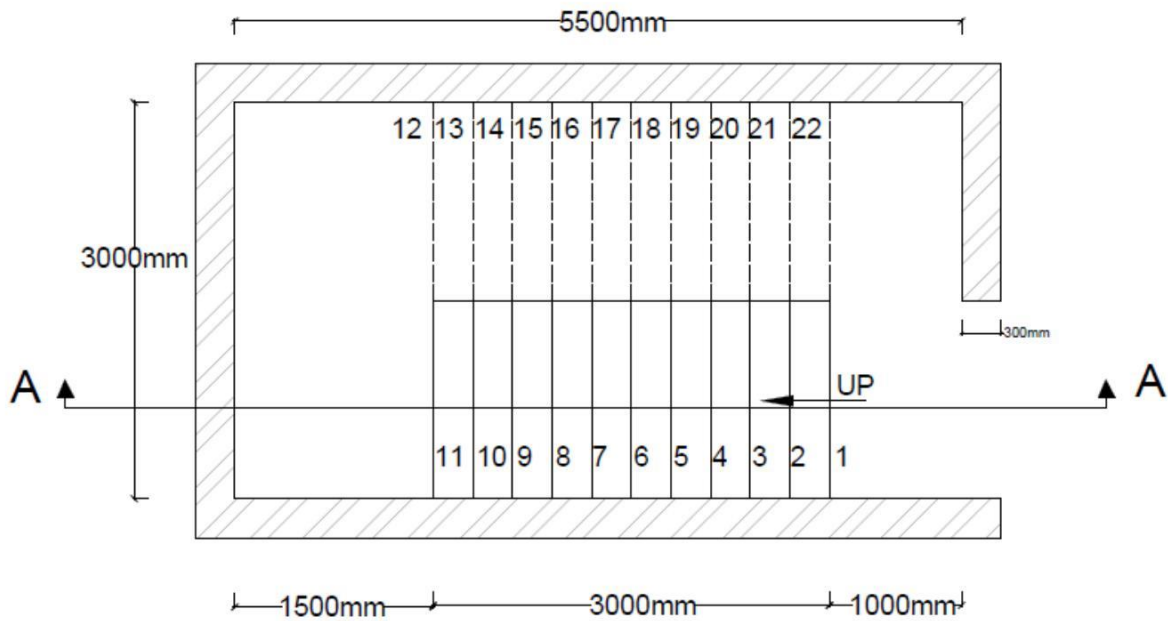


HEADER BOND
ONE BRICK WALL 200X200(Fig:2.8)

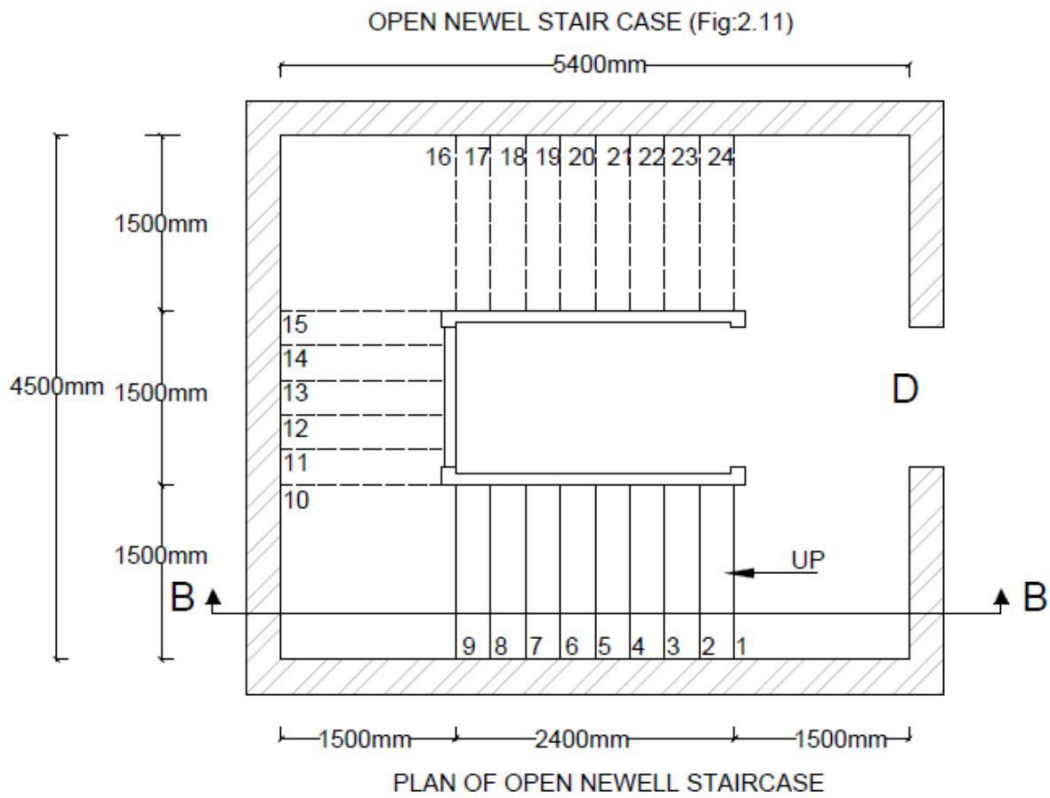
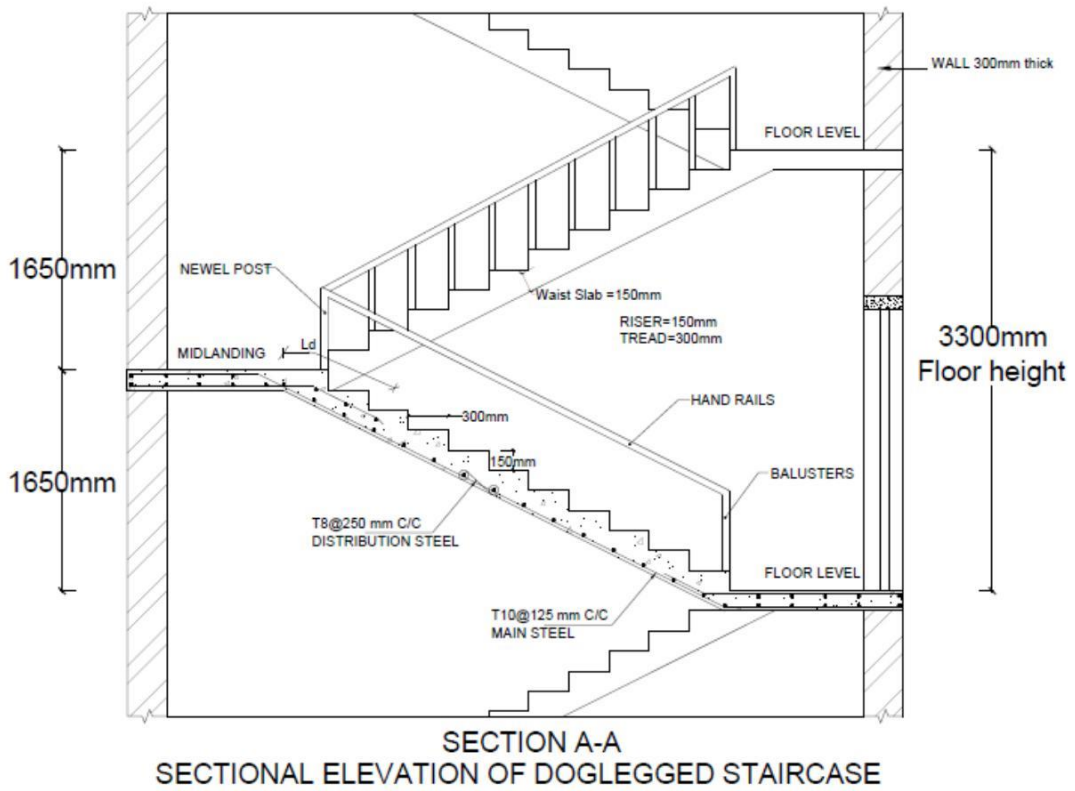


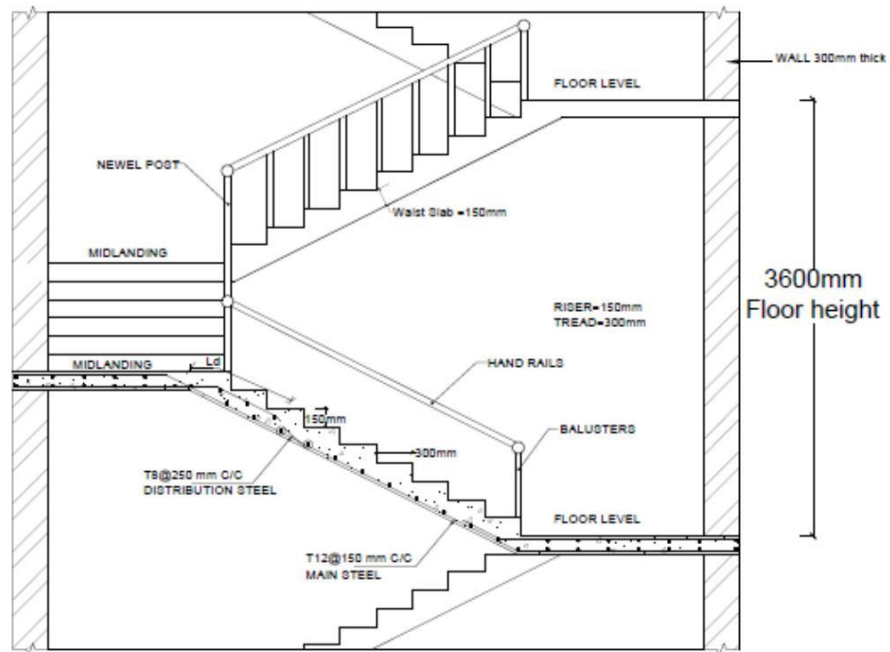
STRETCHER BOND
ONE BRICK WALL 200X200(Fig:2.9)

DOGLEGGED STAIR CASE (Fig:2.10)



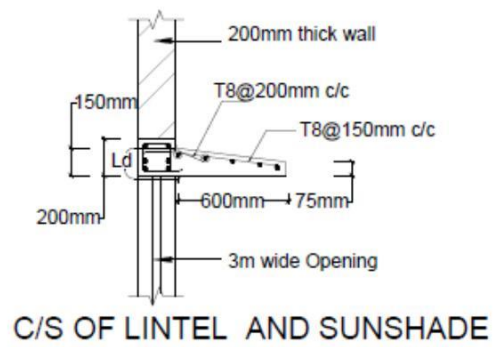
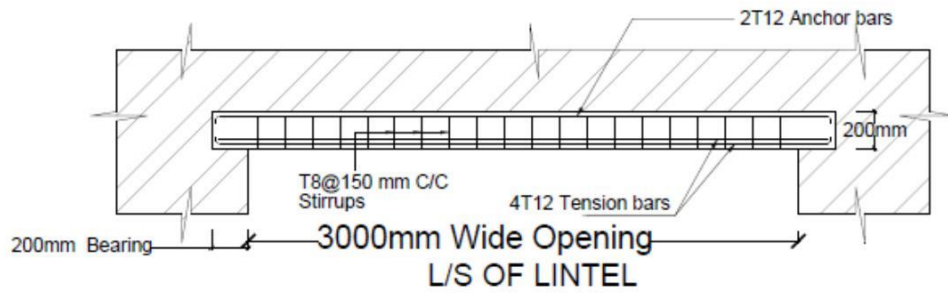
PLAN OF DOGLEGGED STAIRCASE



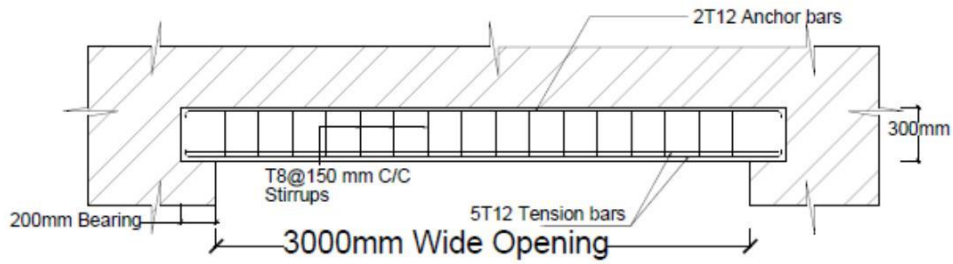


SECTION B-B
SECTIONAL ELEVATION OF OPEN NEWELL STAIRCASE

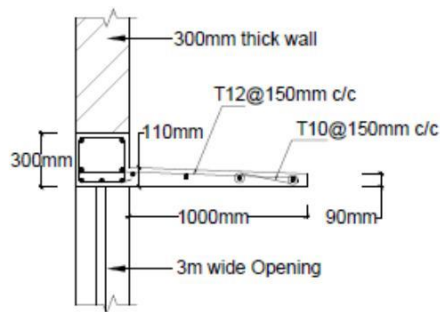
LINTEL AND SUNSHADE (Fig:2.12)



LINTEL AND CHEJJA (Fig:2.13)

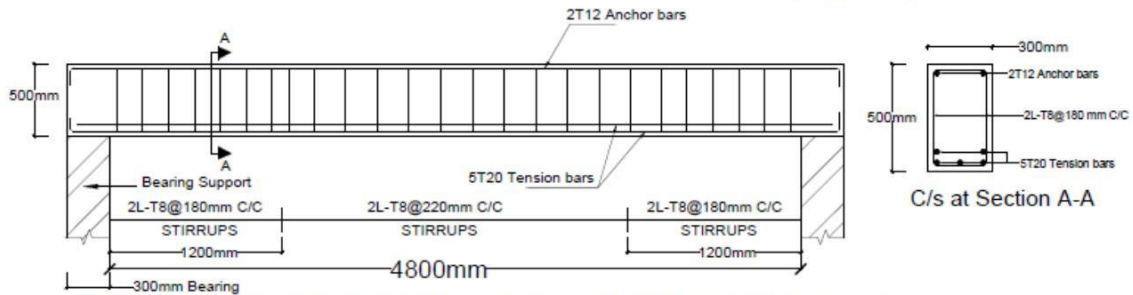


L/S OF LINTEL



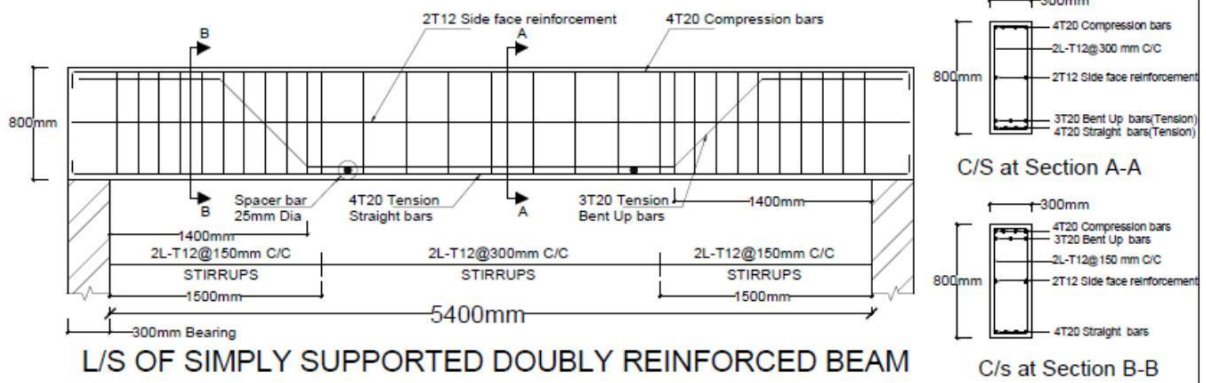
C/S OF LINTEL AND CHEJJA

SIMPLY SUPPORTED SINGLY REINFORCED BEAM (Fig:2.14)

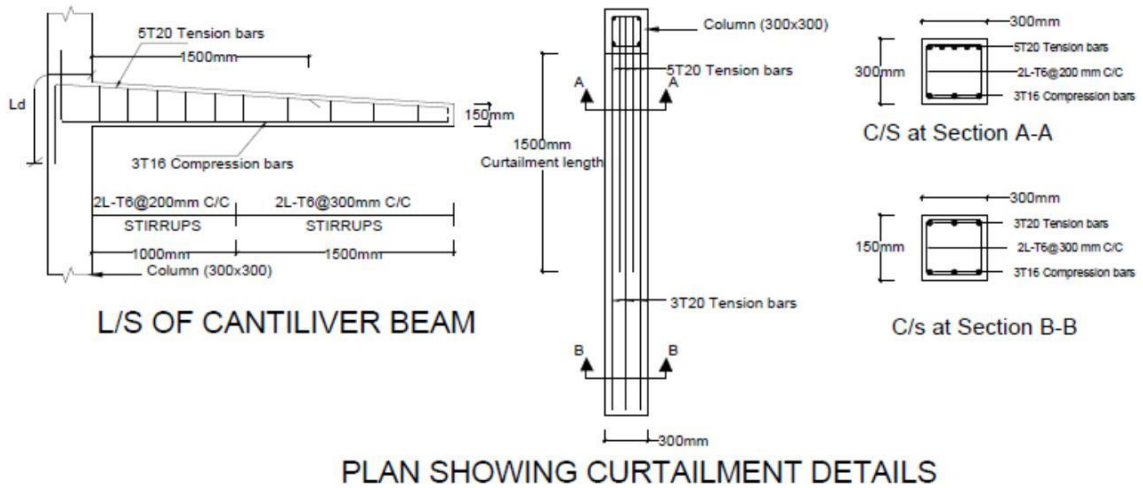


L/S OF SIMPLY SUPPORTED SINGLY REINFORCED BEAM

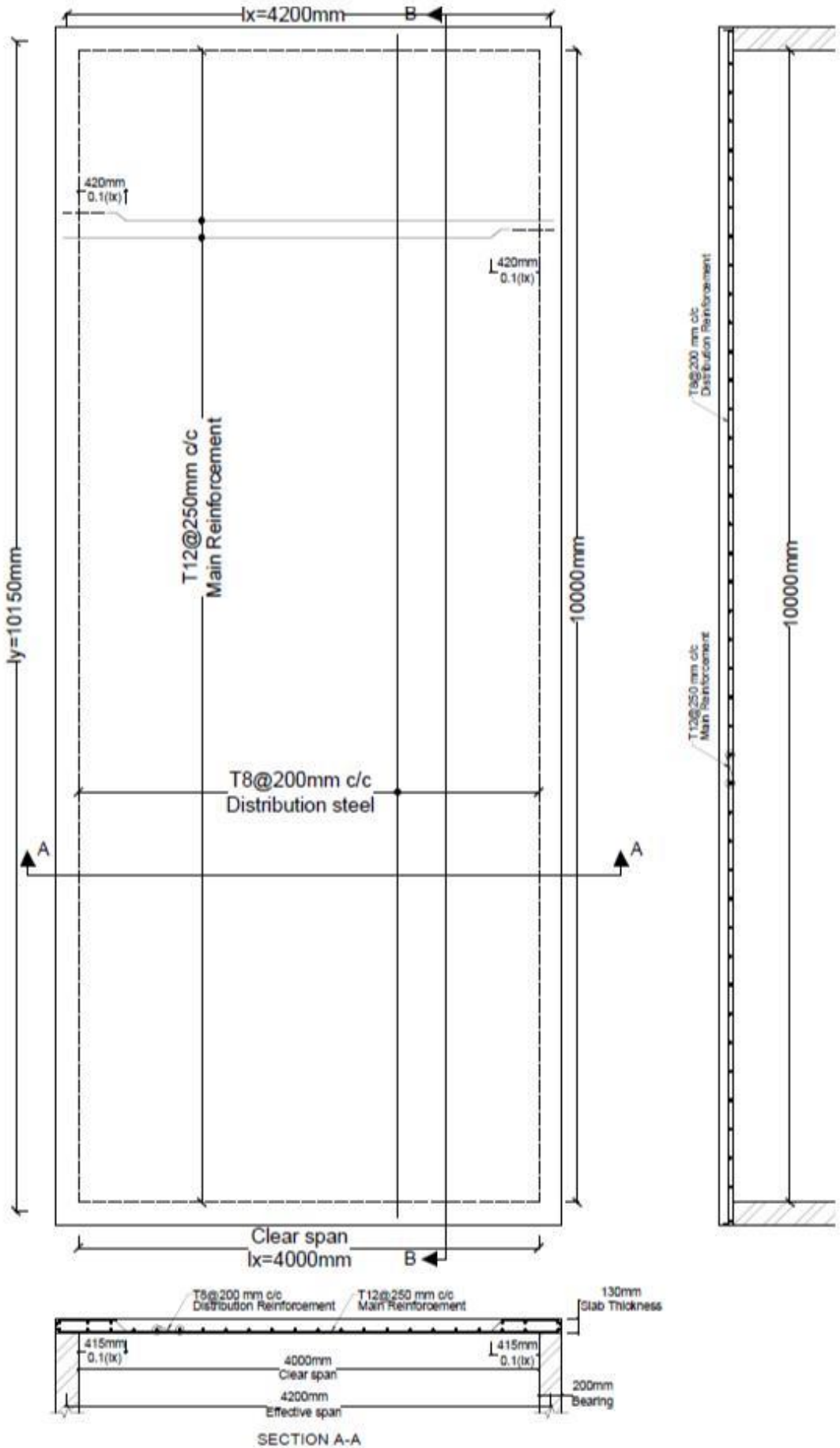
SIMPLY SUPPORTED DOUBLY REINFORCED BEAM (Fig:2.15)

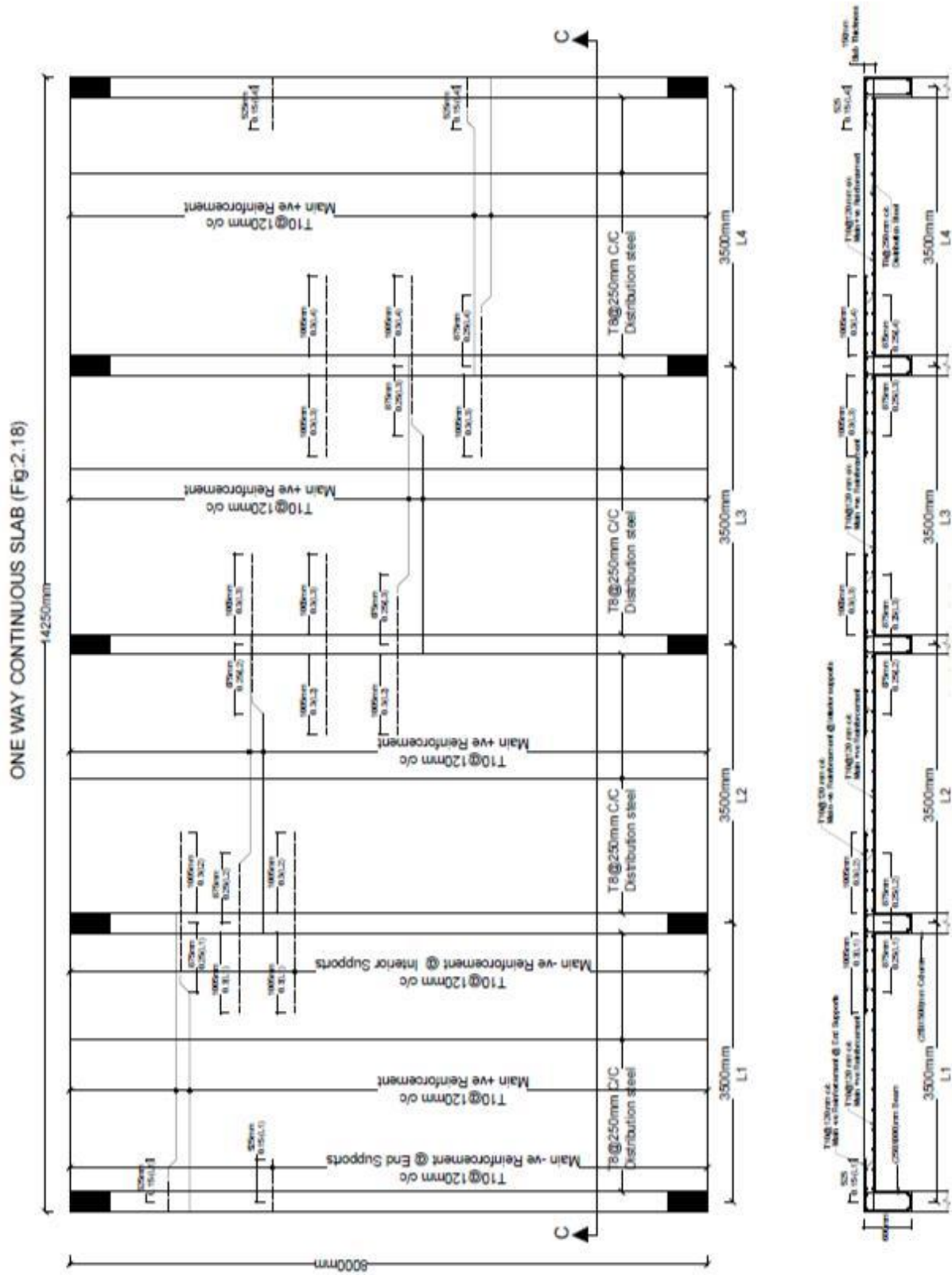


CANTILEVER BEAM (Fig:2.16)

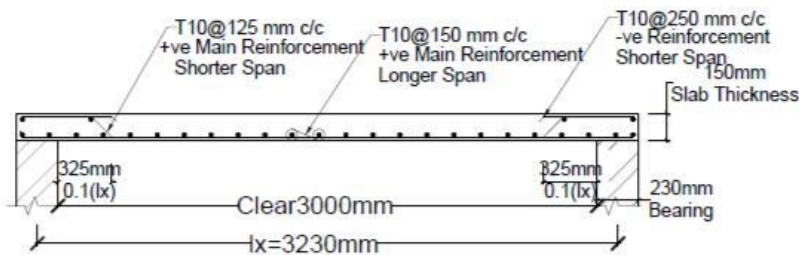
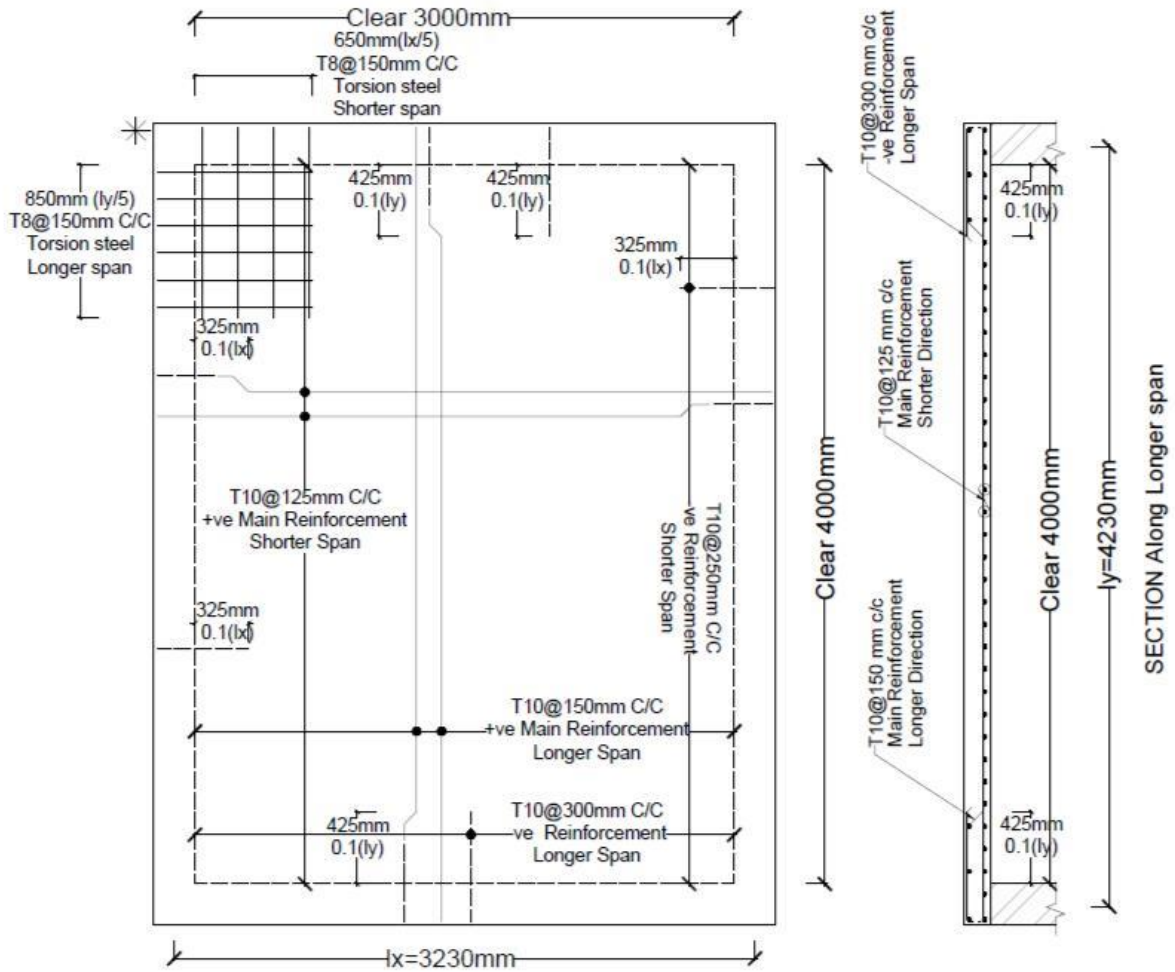


ONE WAY SLAB (Fig:2.17)

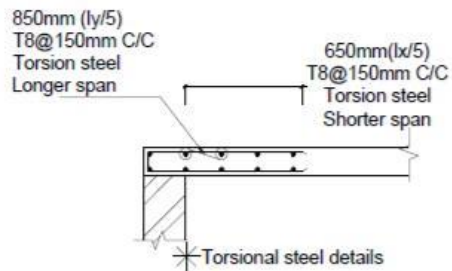




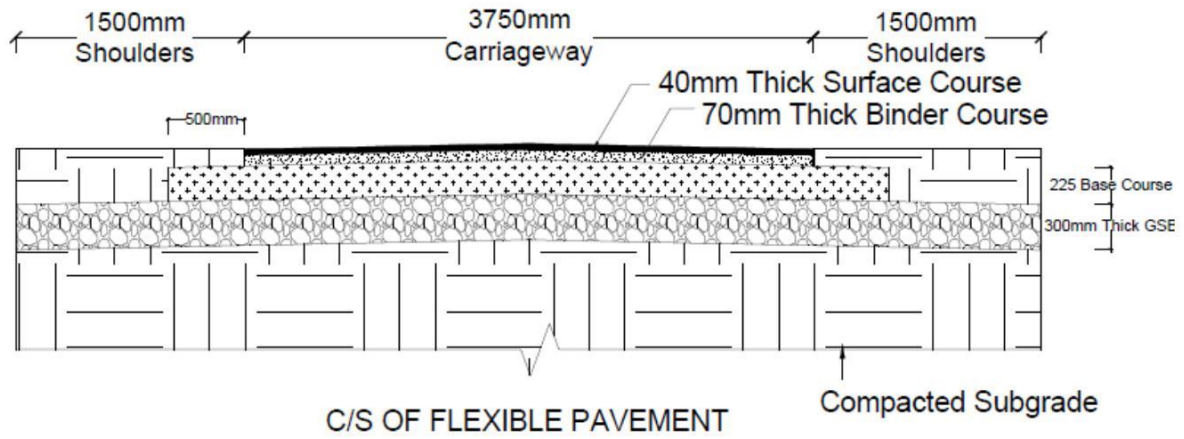
SIMPLY SUPPORTED TWO WAY SLAB (Fig:2.19)



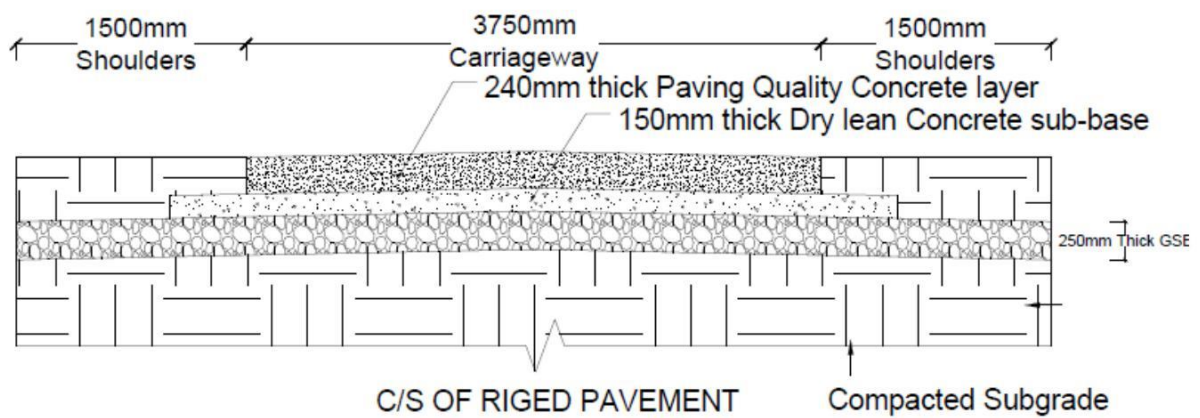
SECTION Along Shorter span



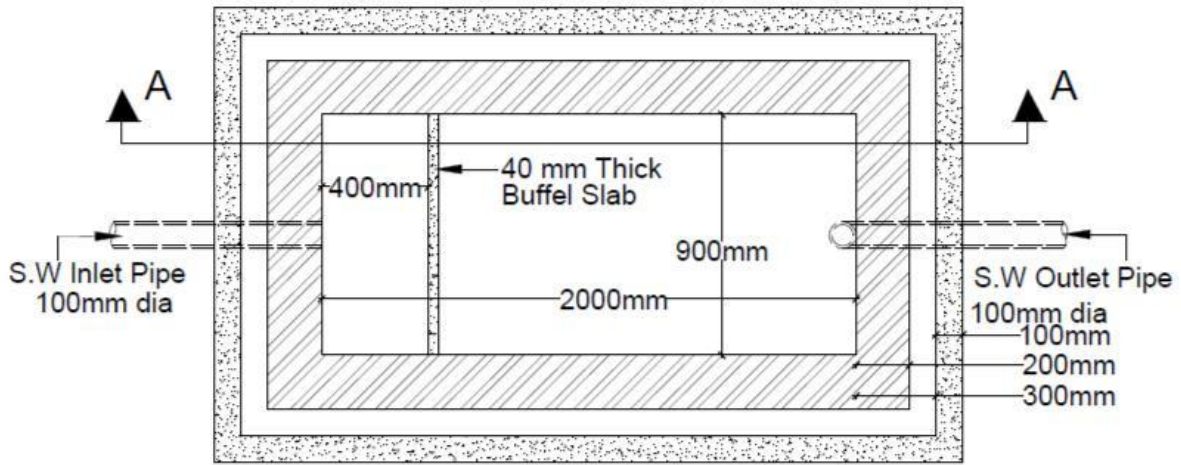
FLEXIBLE PAVEMENT (Fig:2.20)



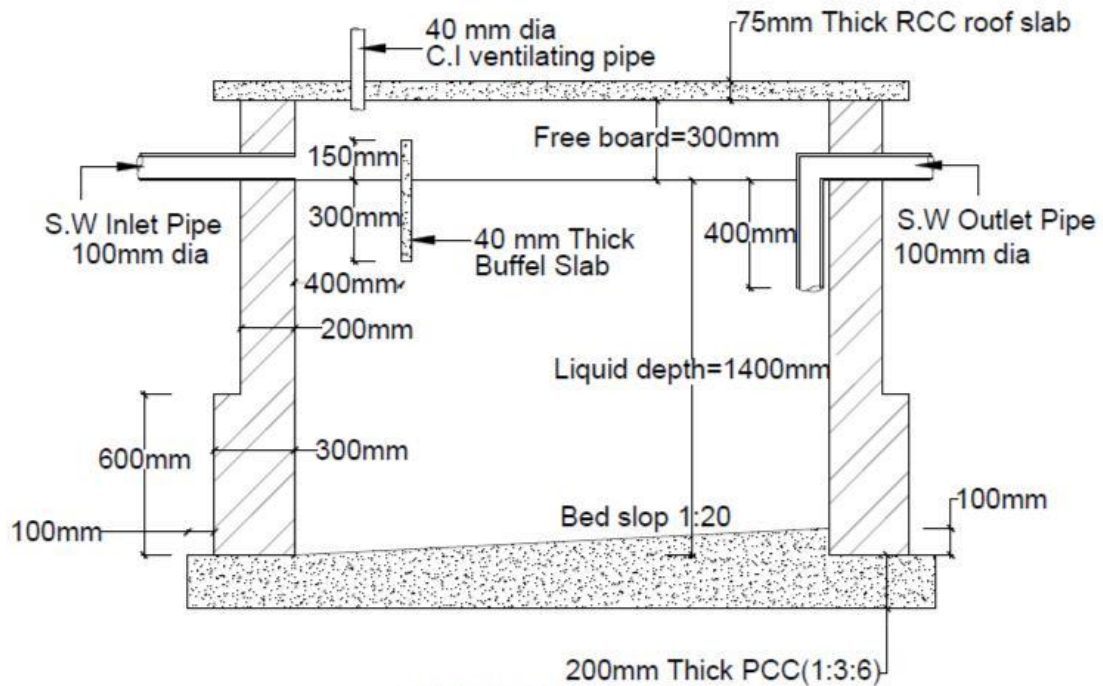
RIGID PAVEMENT (Fig:2.21)



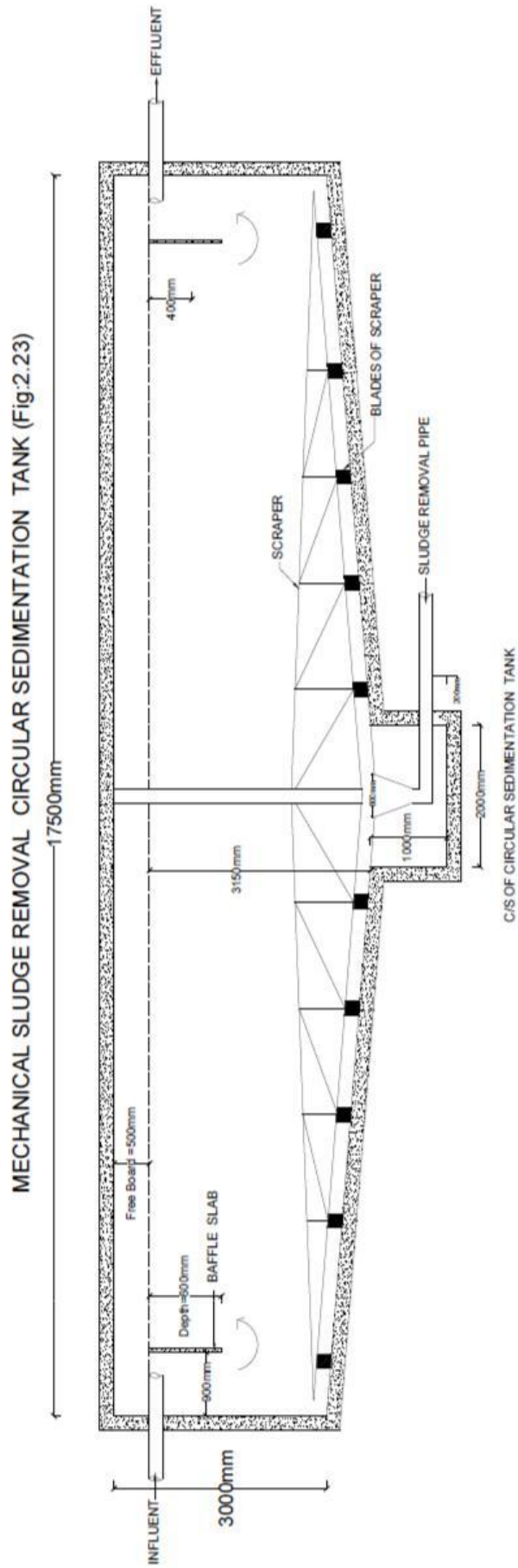
SEPTIC TANK (Fig:2.22)



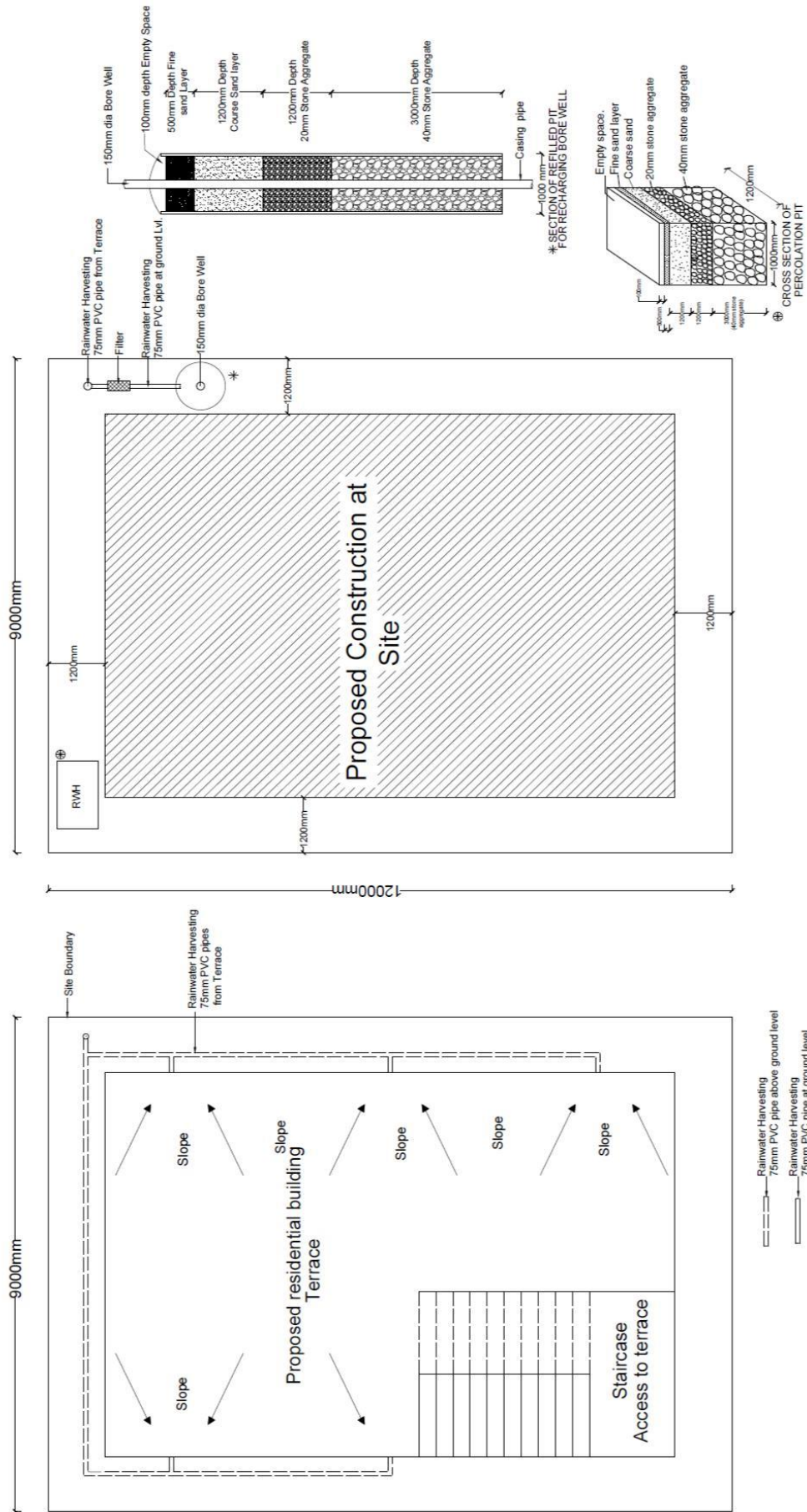
PLAN OF SEPTIC TANK



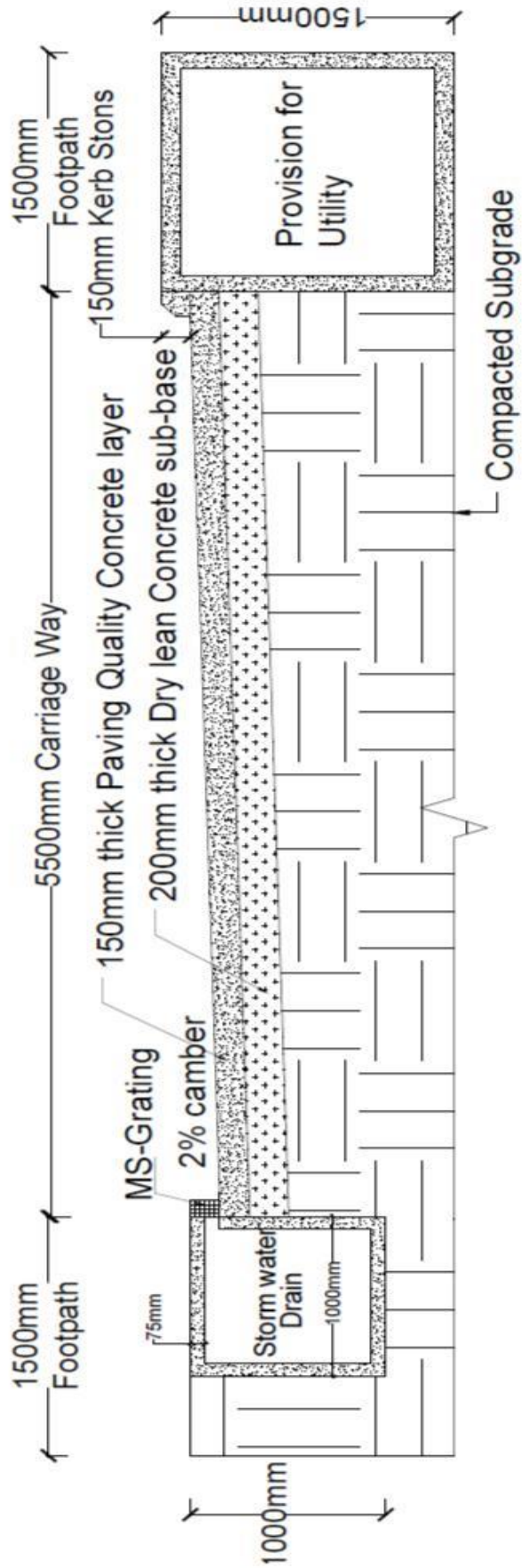
SECTION A-A



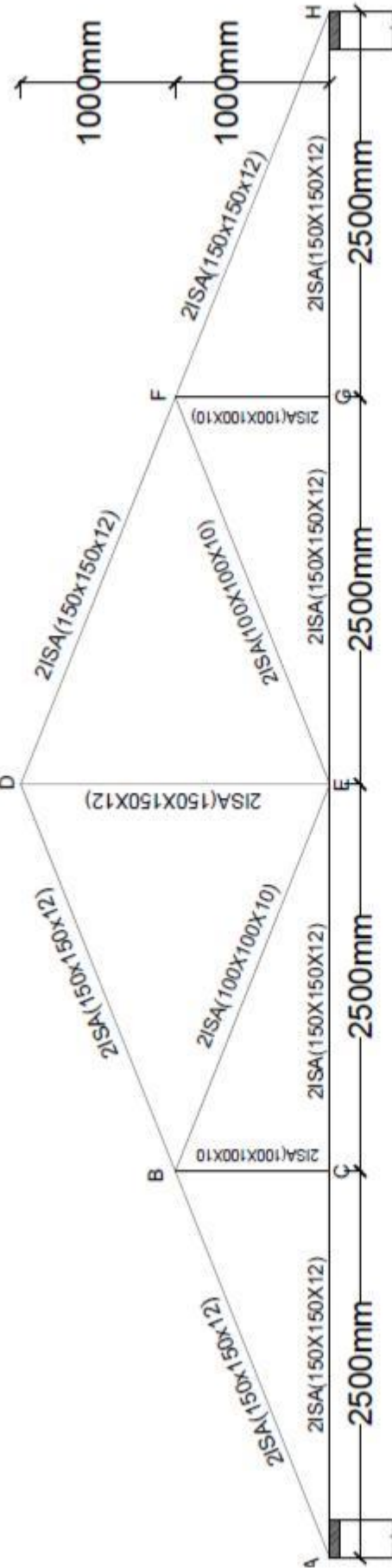
LAYOUT PLAN OF RAINWATER HARVESTING AND RECHARGING SYSTEM FOR A RESIDENTIAL BUILDING (Fig:2.24)

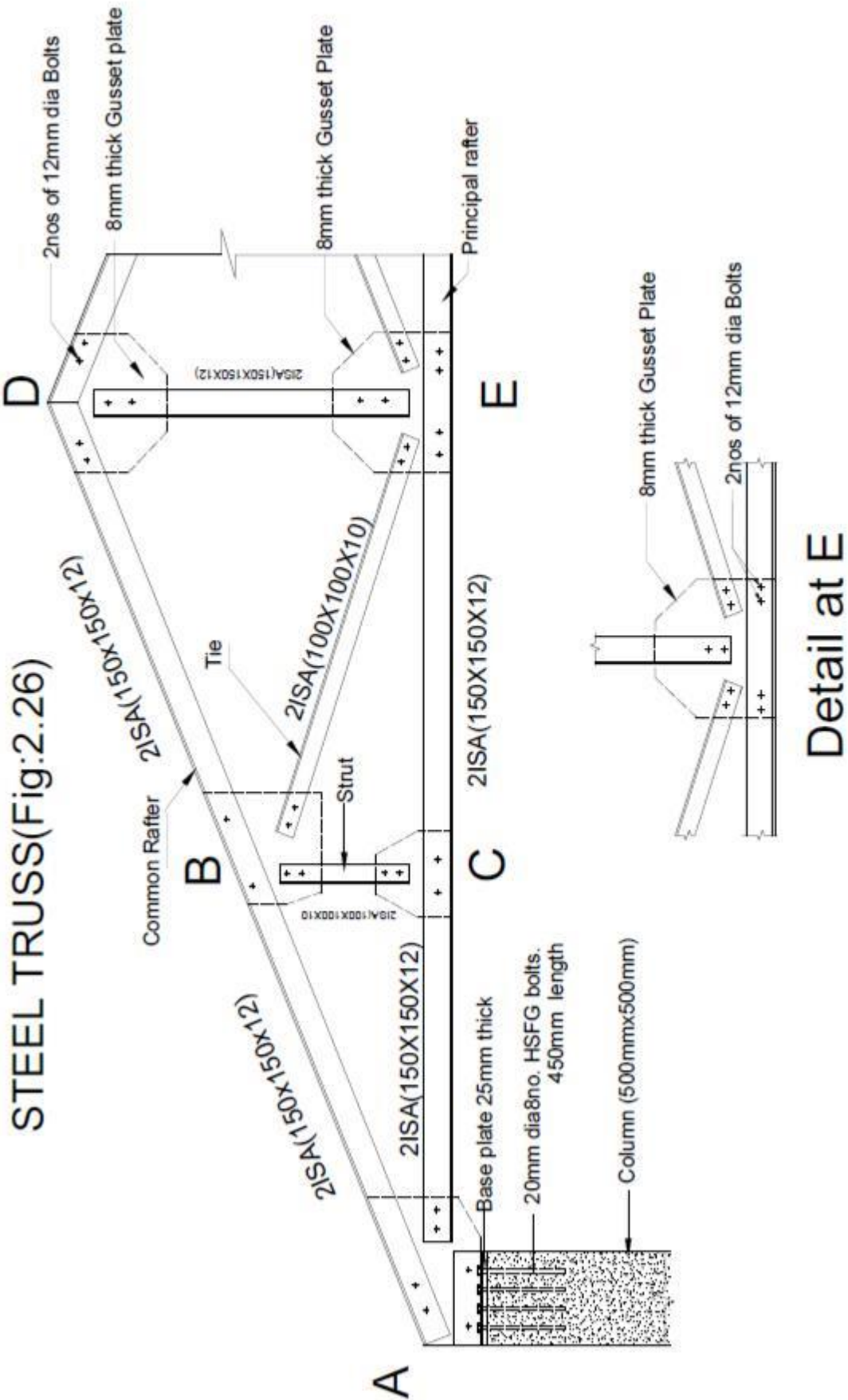


Cross sectional details of a Road for a Residential area
with provision for all Services (Fig:2.25)

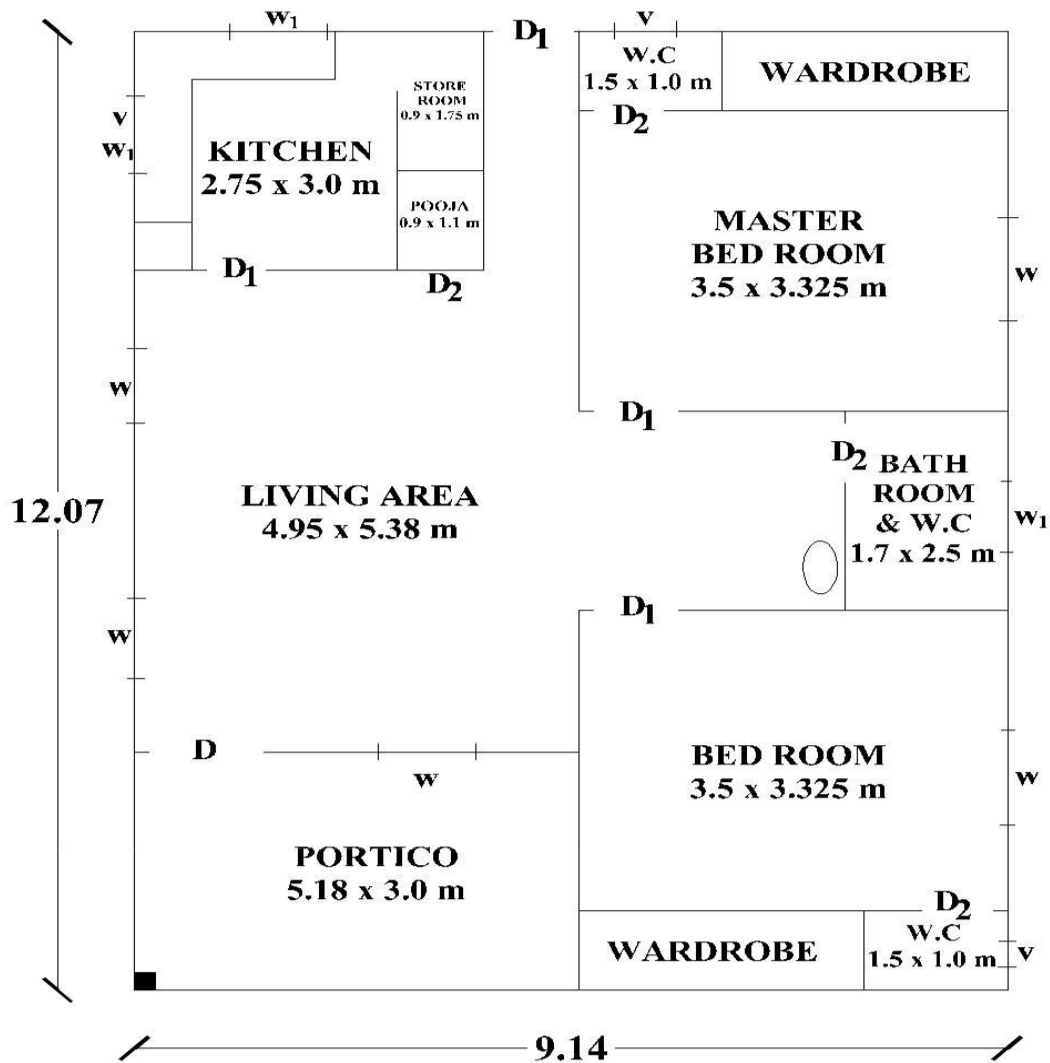


Q.no 2.26:-LINE DIAGRAM FOR STEEL TRUSS

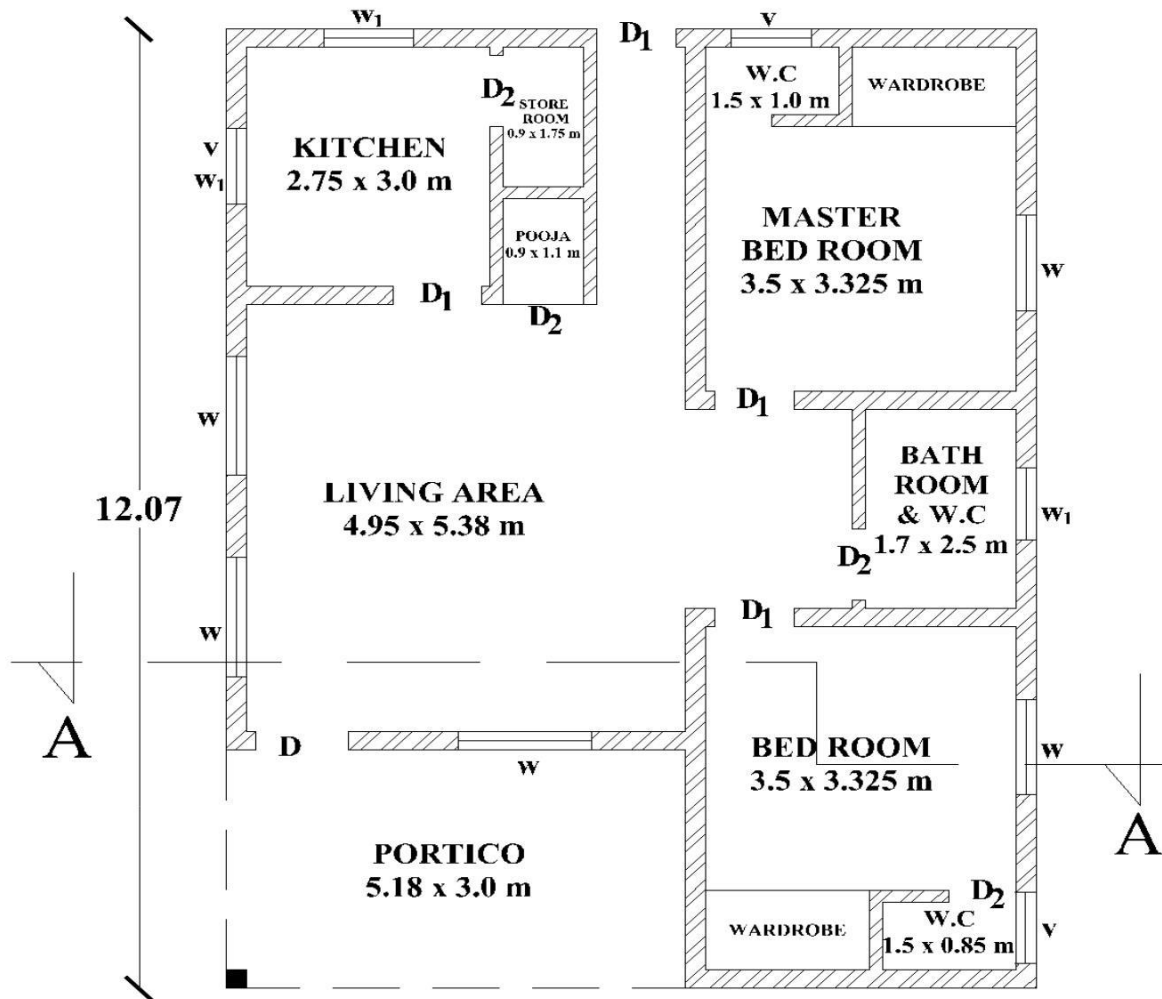




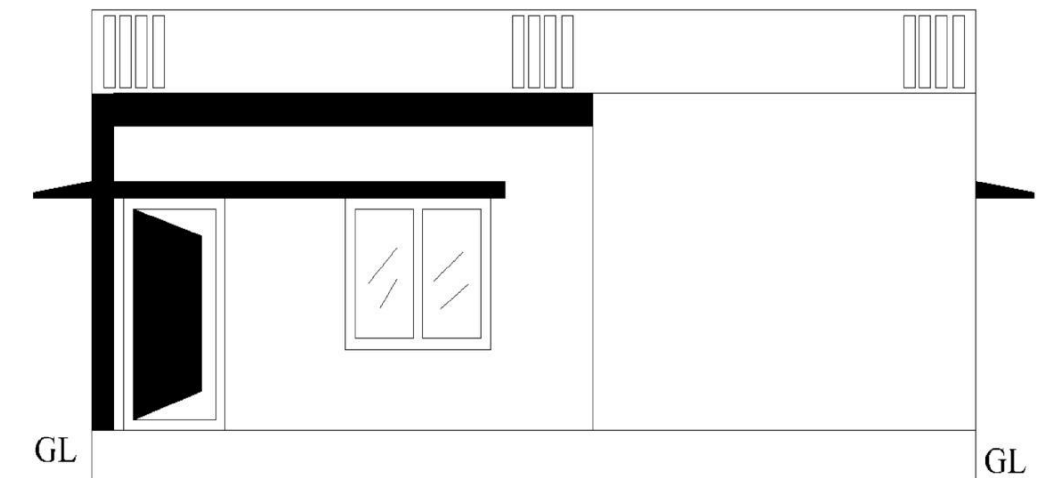
LINE DIAGRAM OF SINGLE STOREY RESIDENTIAL BUILDING



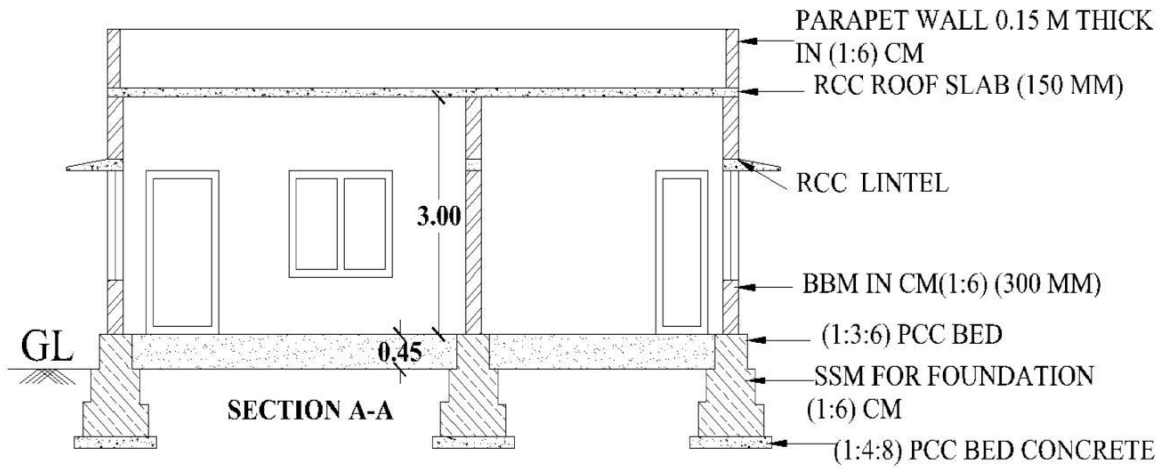
PLAN OF SINGLE STOREY RESIDENTIAL BUILDING



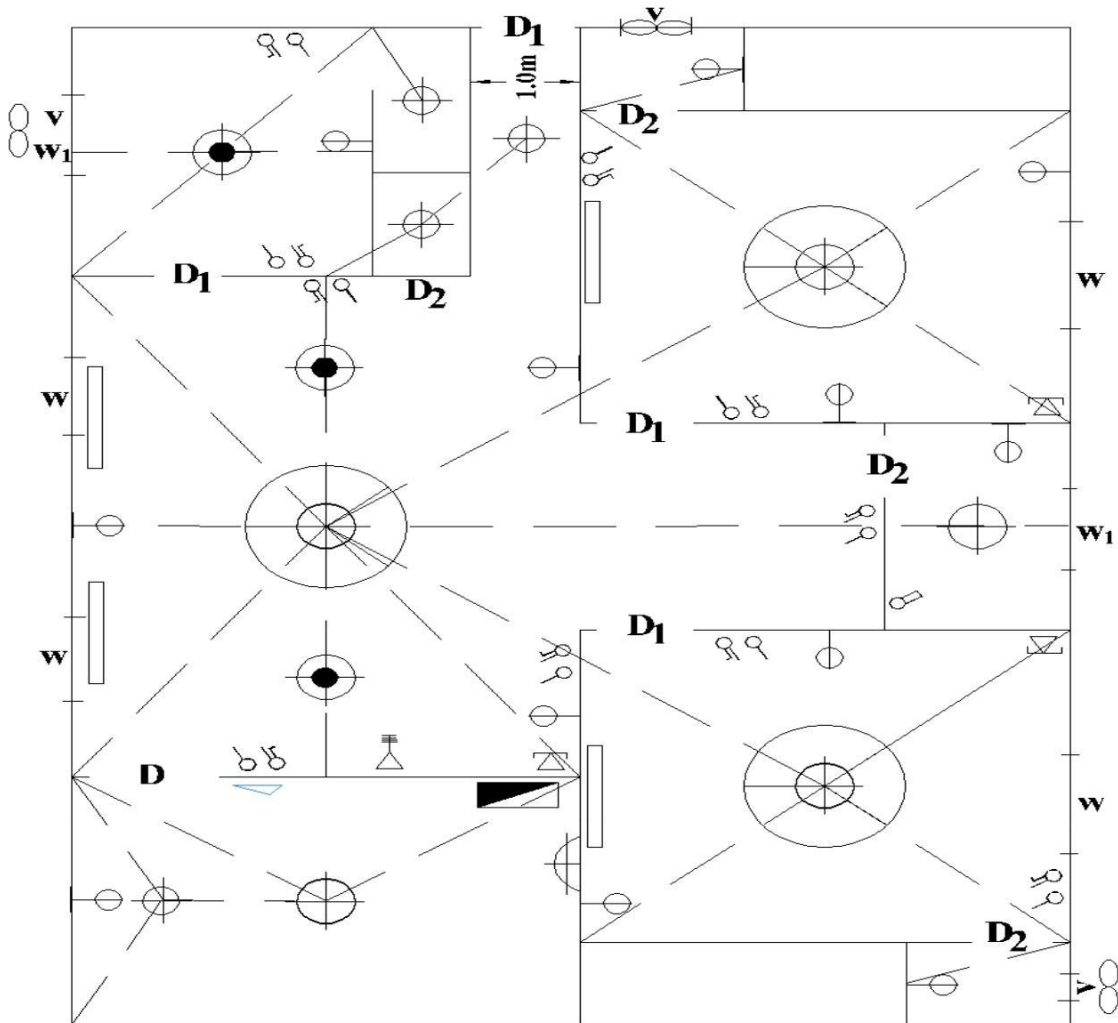
FRONT ELEVATION OF SINGLE STOREY RESIDENTIAL BUILDING



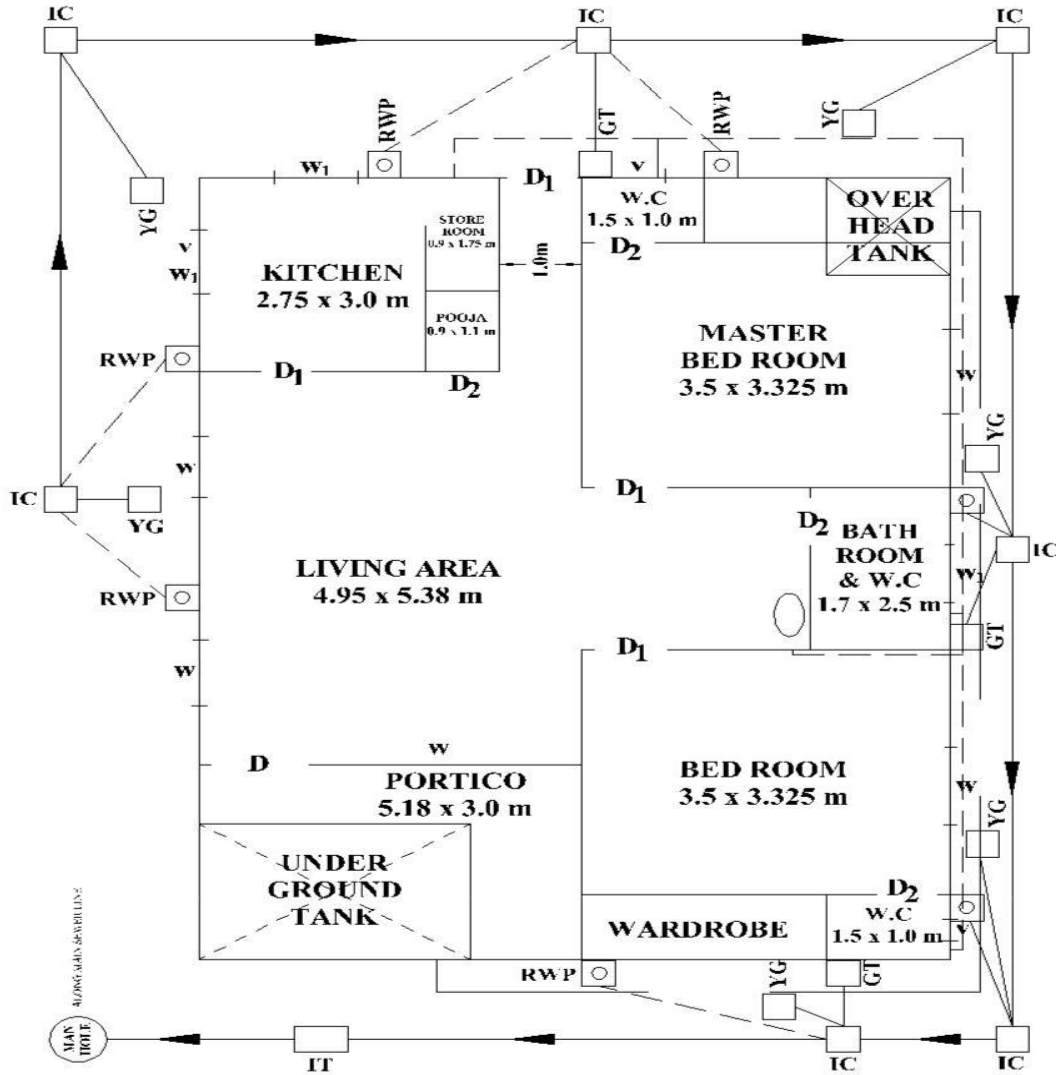
CROSS SECTION OF SINGLE STOREY RESIDENTIAL BUILDING



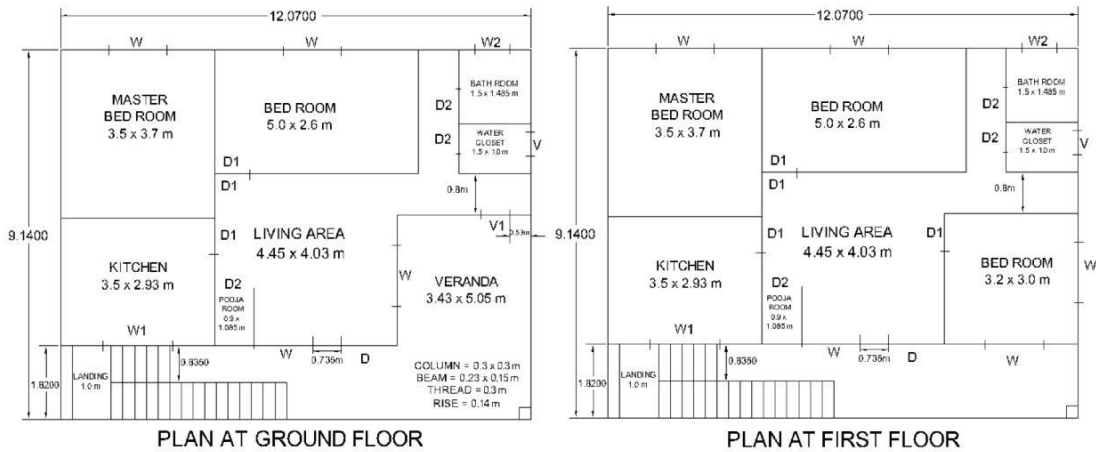
ELECTRICAL SUPPLY FOR SINGLE STOREY RESIDENTIAL BUILDING



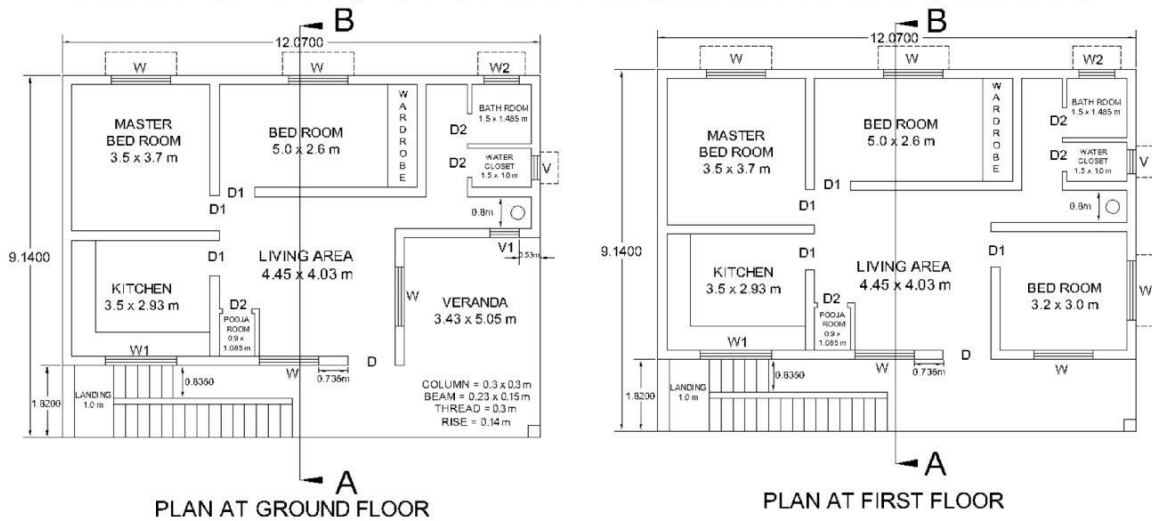
WATER SUPPLY & SANITARY CONNECTION FOR SINGLE STOREY RESIDENTIAL BUILDING



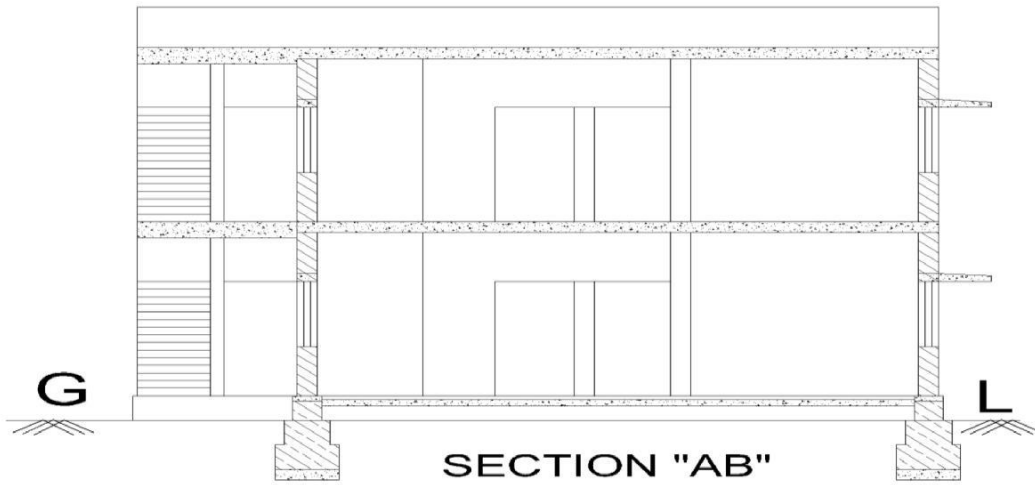
LINE DIAGRAM OF TWO STOREY RESEDENTIAL BUILDING



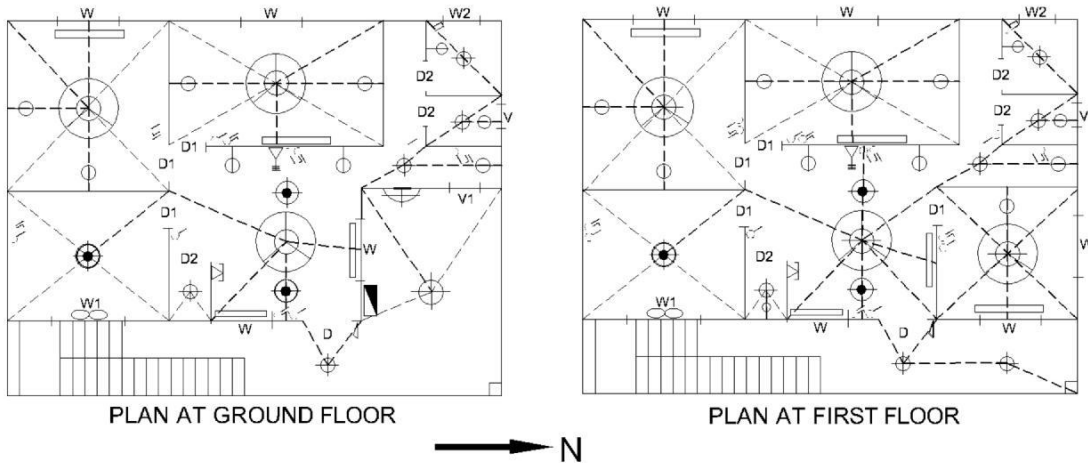
PLAN OF TWO STOREY RESEDENTIAL BUILDING



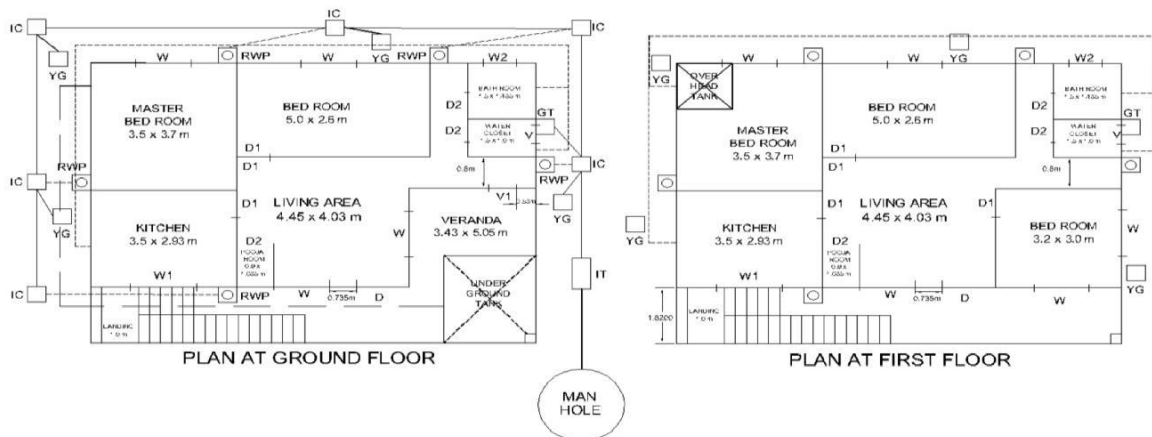
CROSS SECTION OF TWO STOREY RESEDENTIAL BUILDING



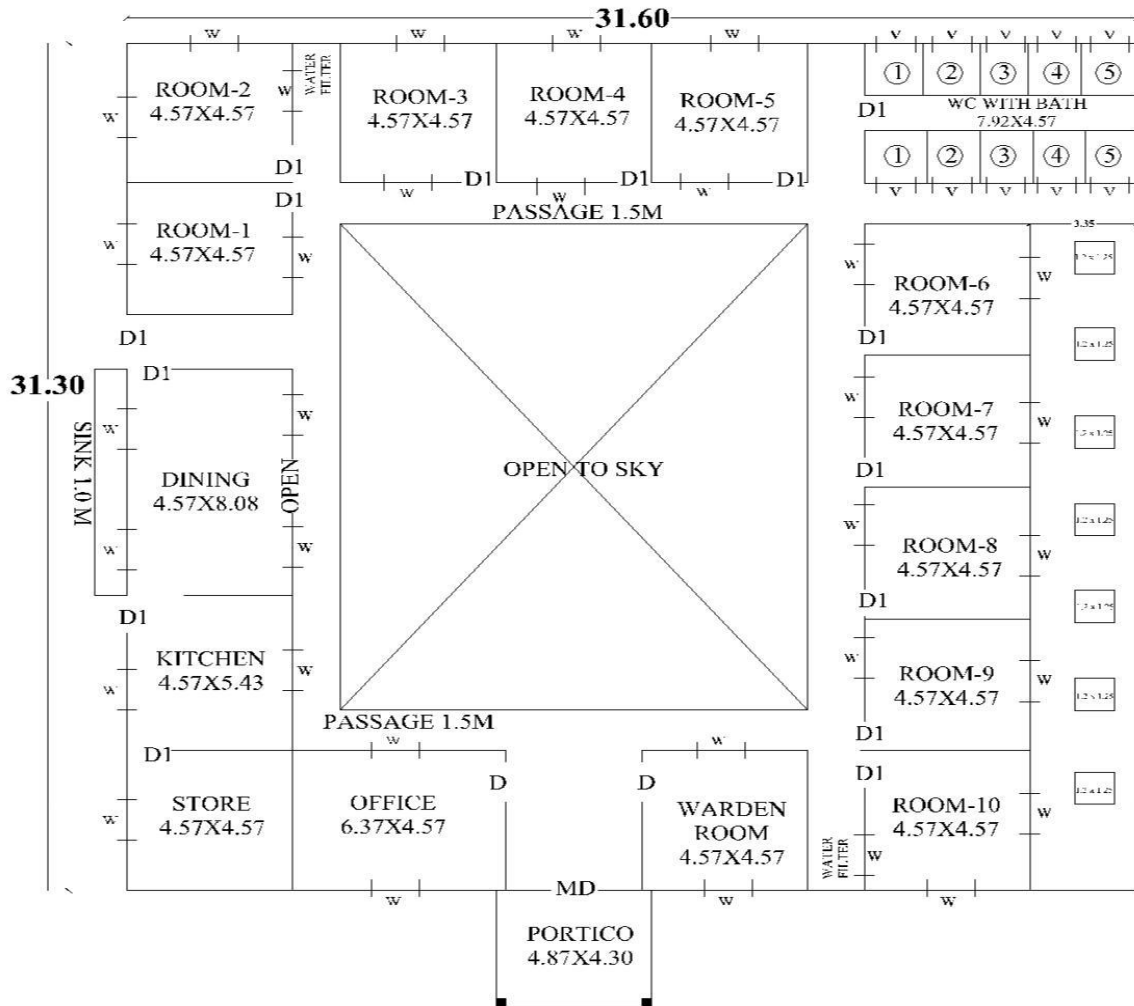
ELECTRICAL SUPPLY FOR TWO STOREY RESEDENTIAL BUILDING



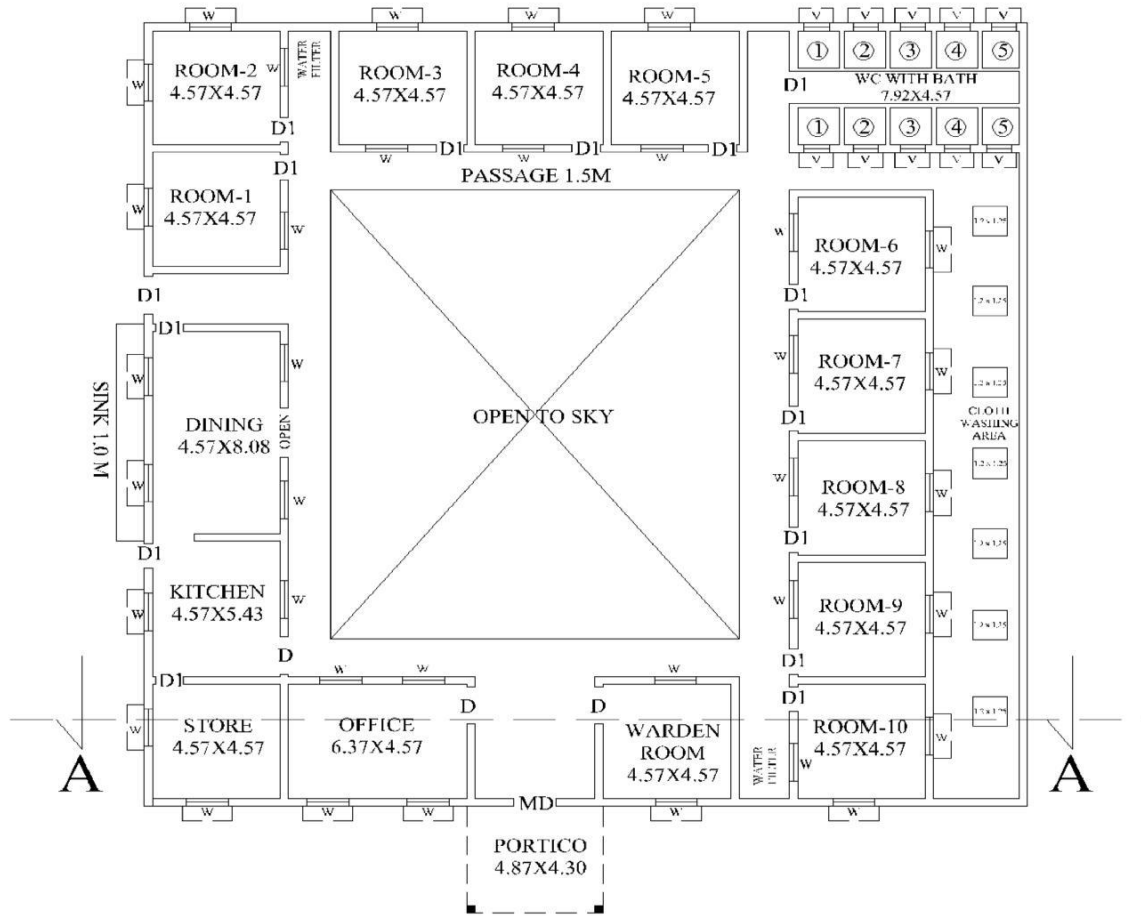
WATER & SANITARY SUPPLY CONNECTION FOR TWO FLOORS BUILDING



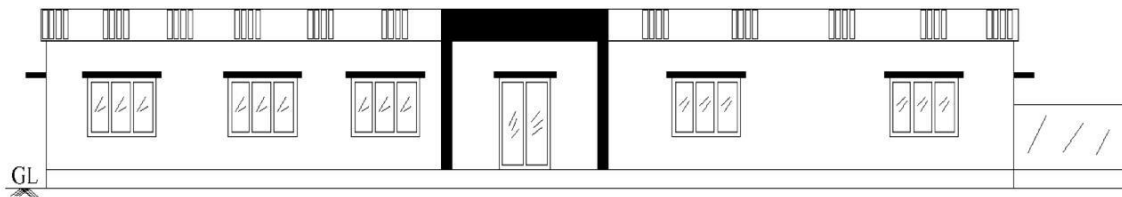
LINE DIAGRAM OF HOSTEL BUILDING



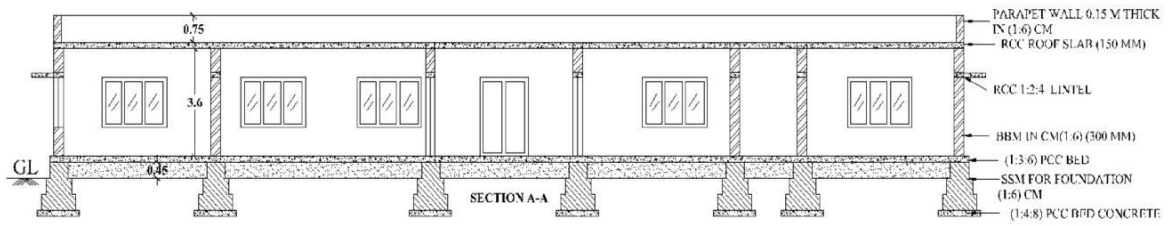
PLAN OF HOSTEL BUILDING



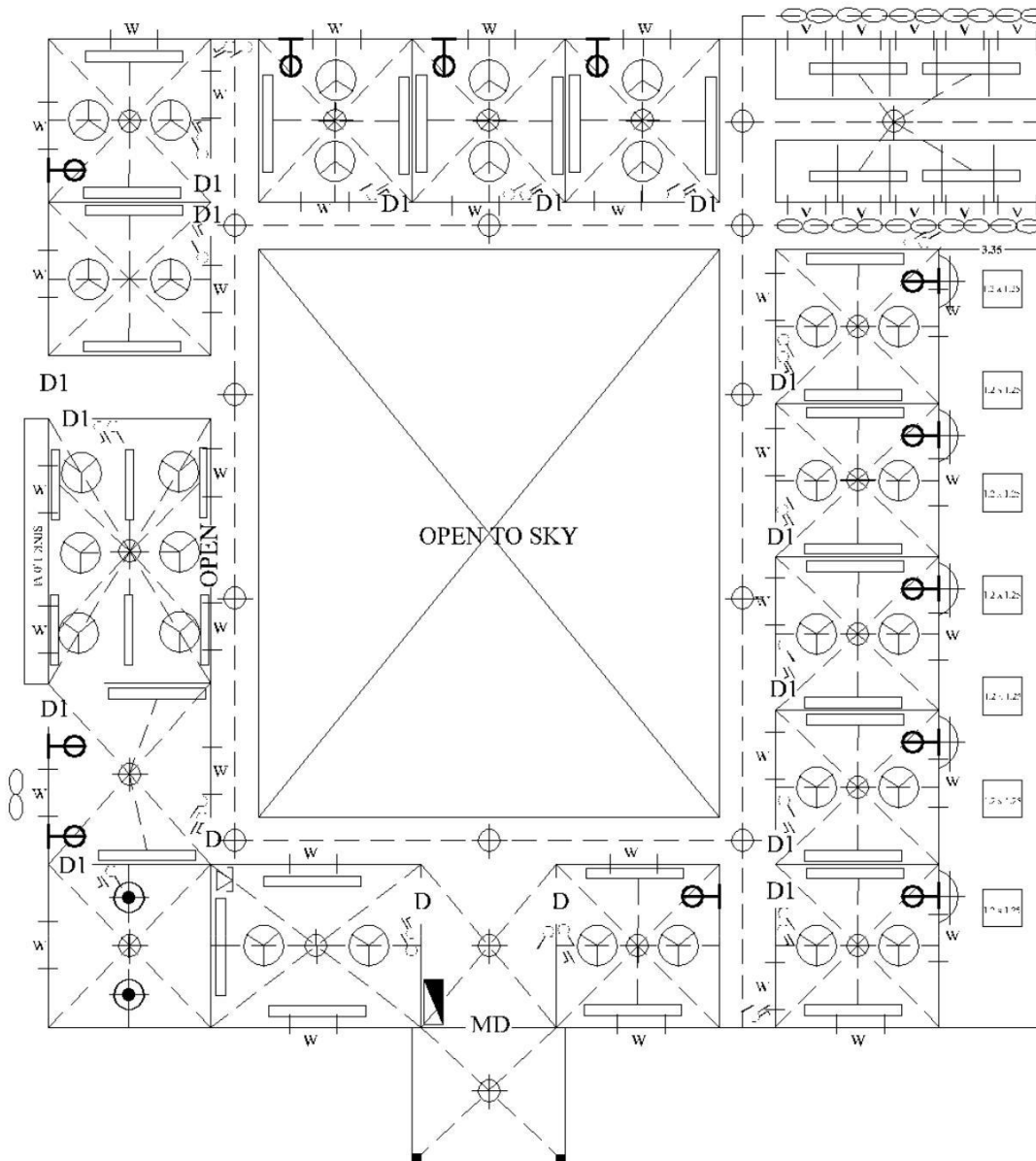
FRONT ELEVATION OF HOSTEL BUILDING



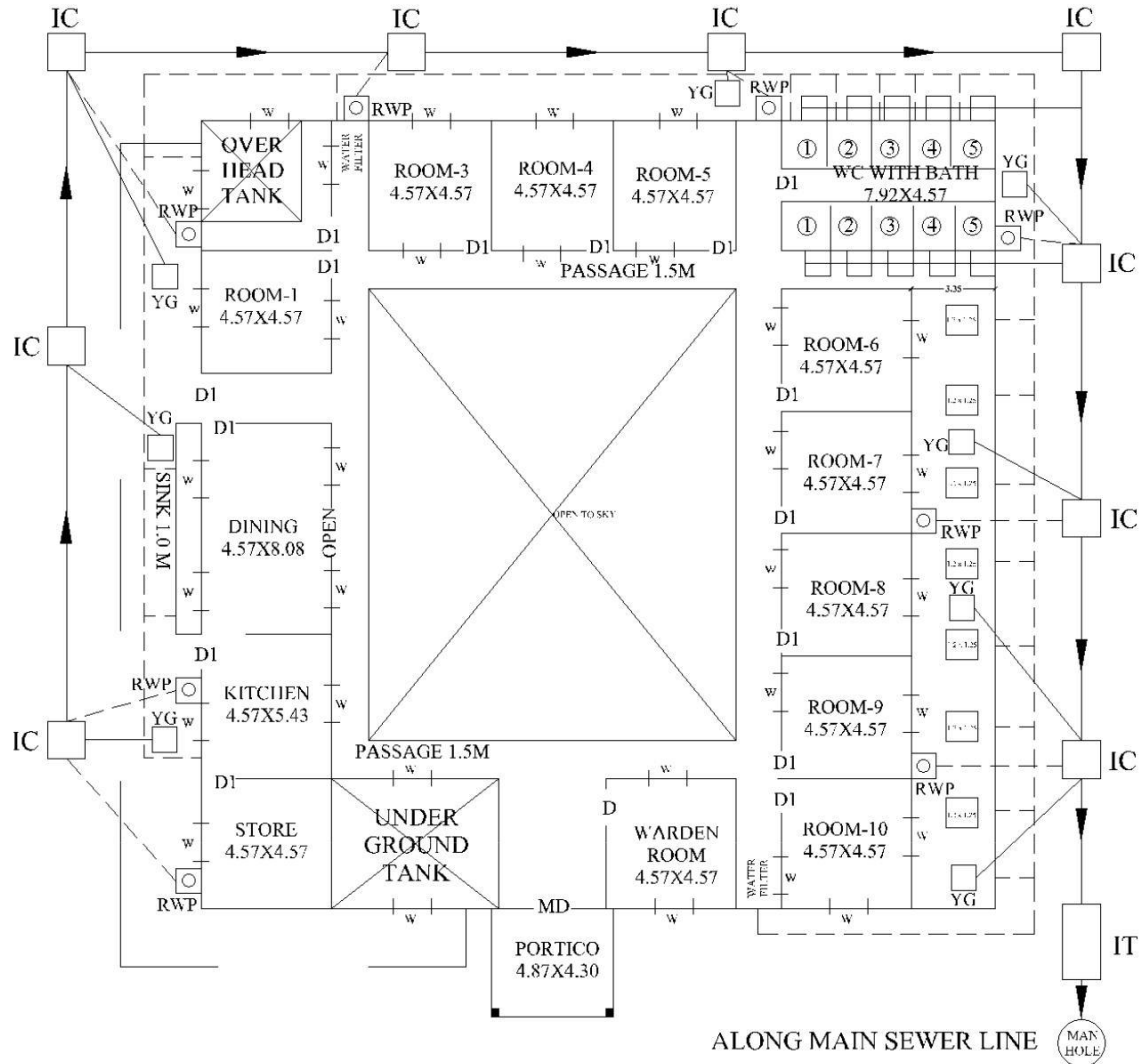
CROSS SECTION OF HOSTEL BUILDING



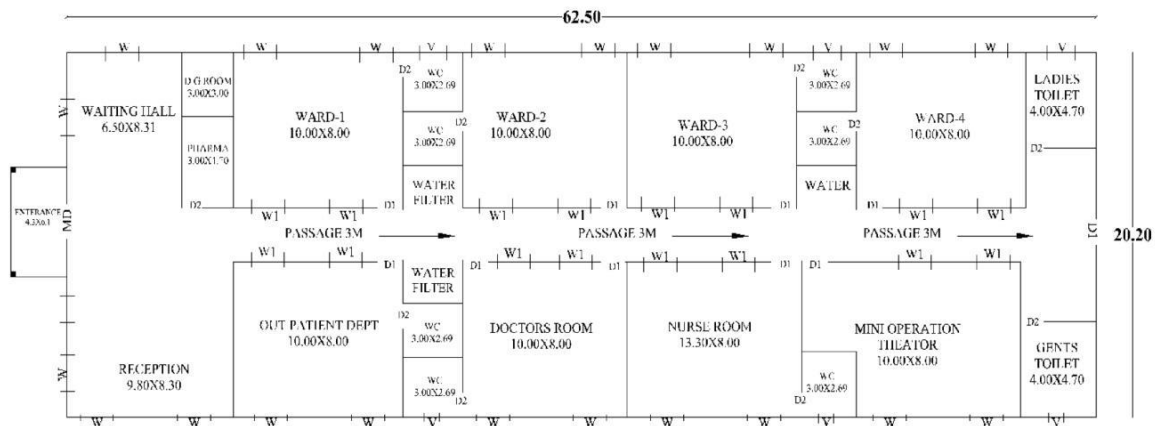
ELECTRICAL SUPPLY FOR HOSTEL BUILDING



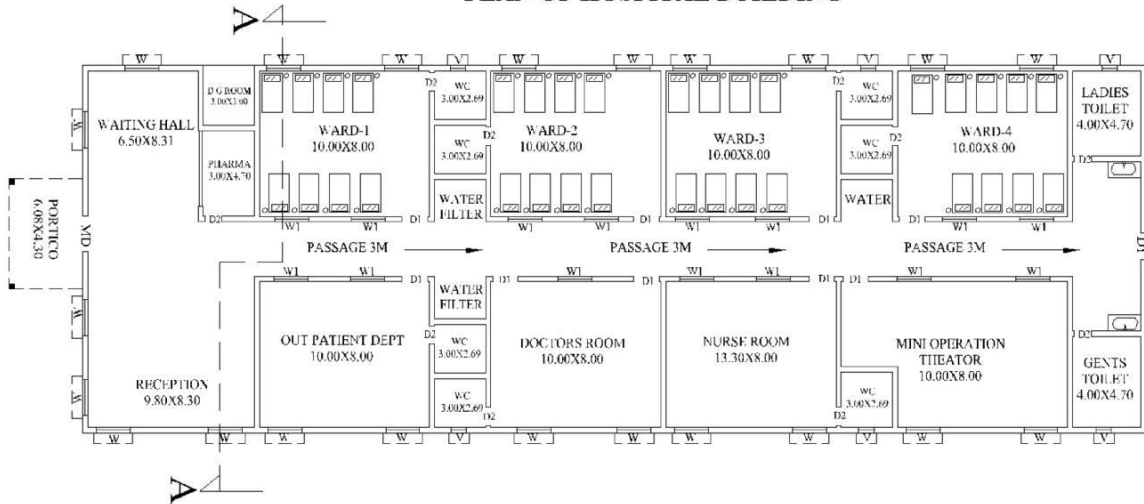
WATER SUPPLY & SANITARY CONNECTION FOR HOSTEL BUILDING



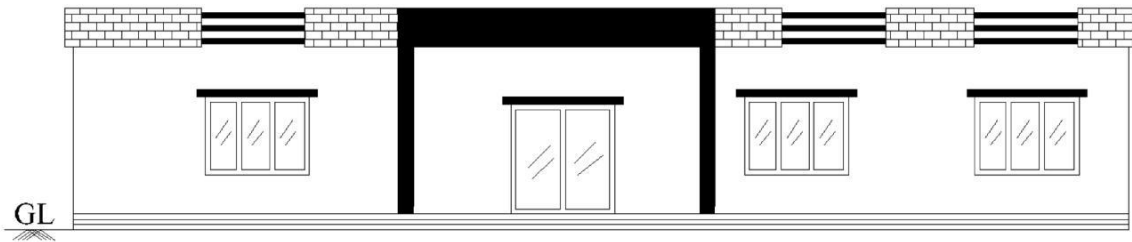
LINE DIAGRAM OF HOSPITAL BUILDING



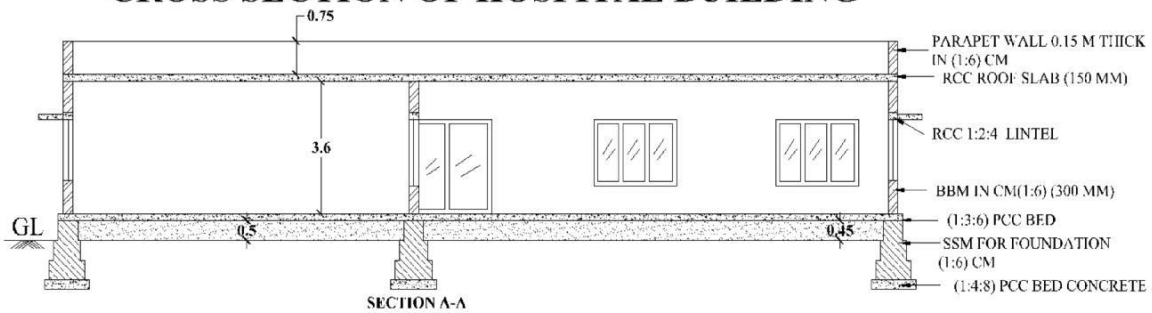
PLAN OF HOSPITAL BUILDING



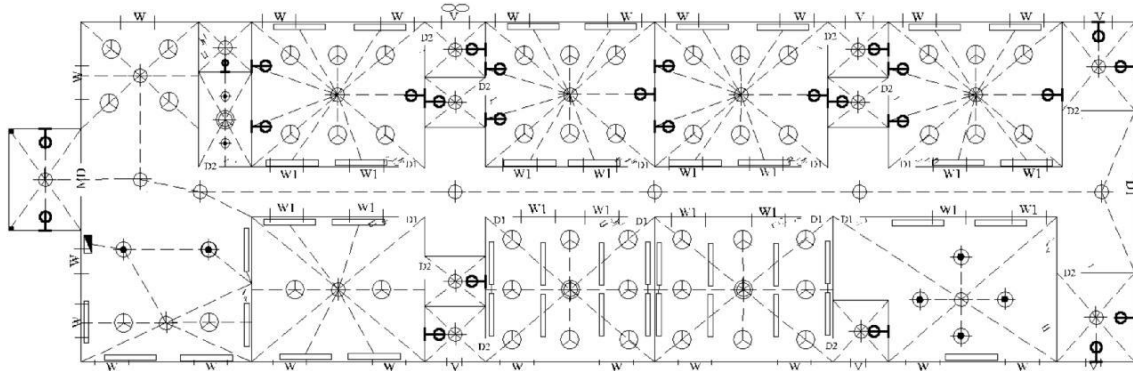
FRONT ELEVATION OF HOSPITAL BUILDING



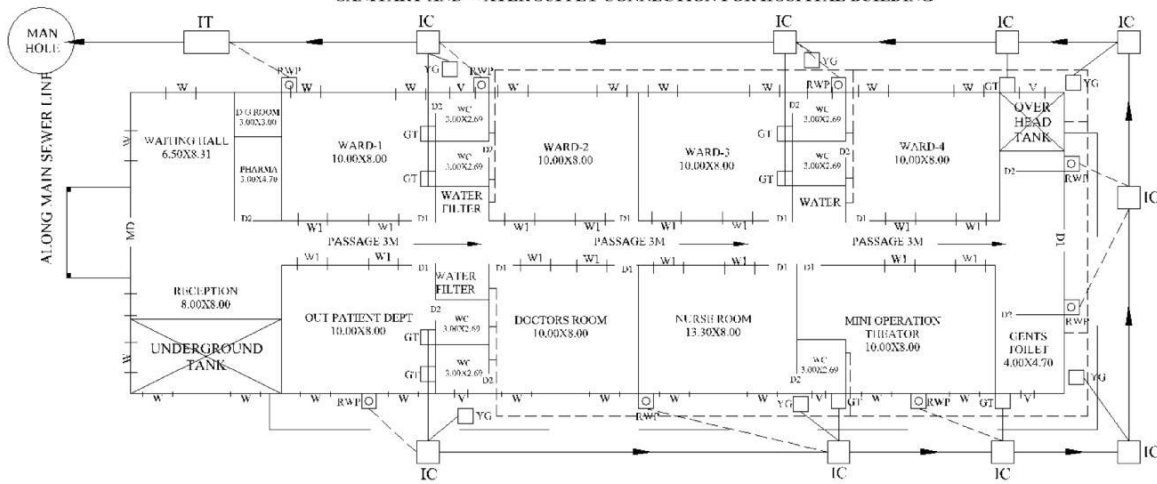
CROSS SECTION OF HOSPITAL BUILDING



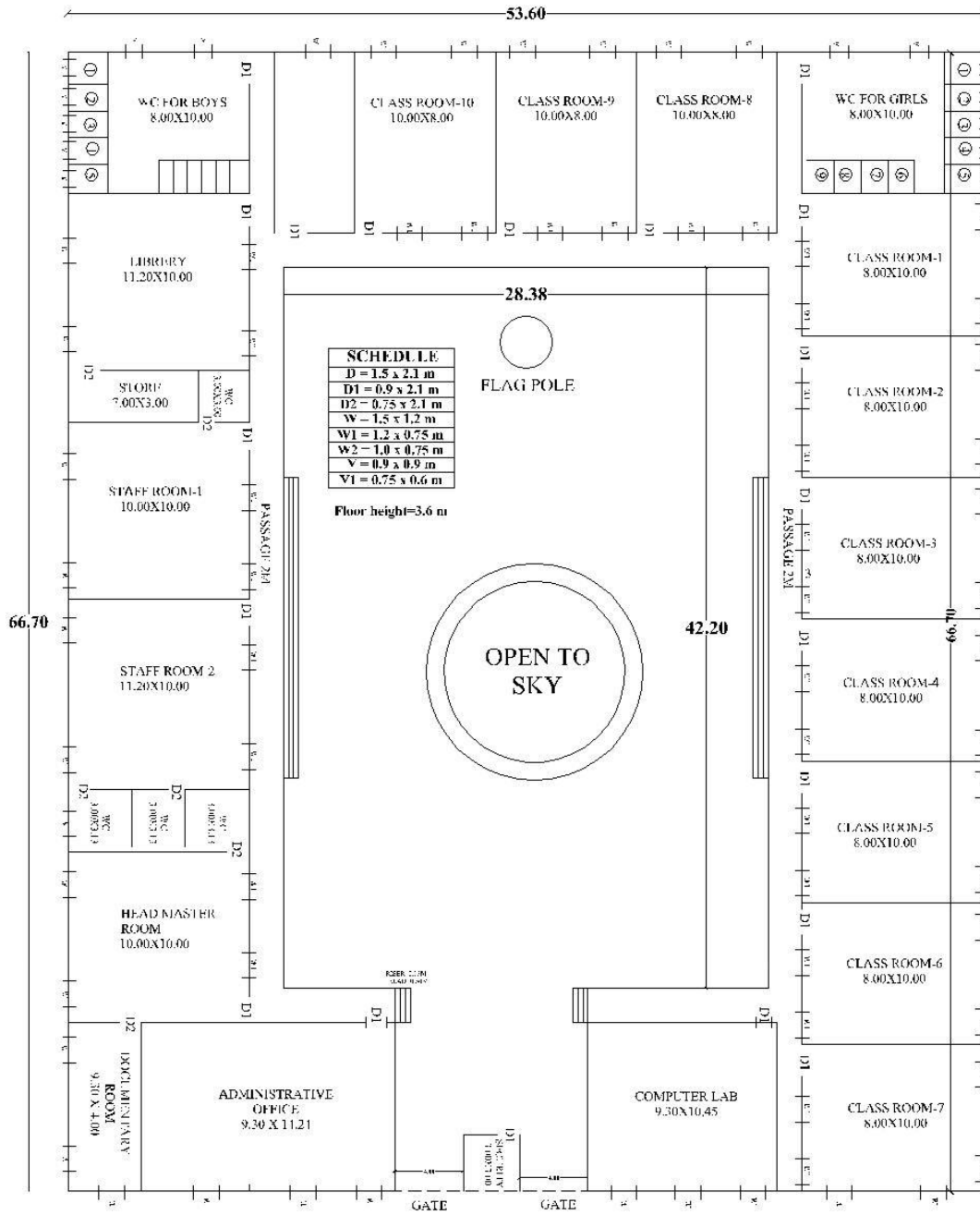
ELECTRICAL SUPPLY FOR HOSPITAL BUILDING



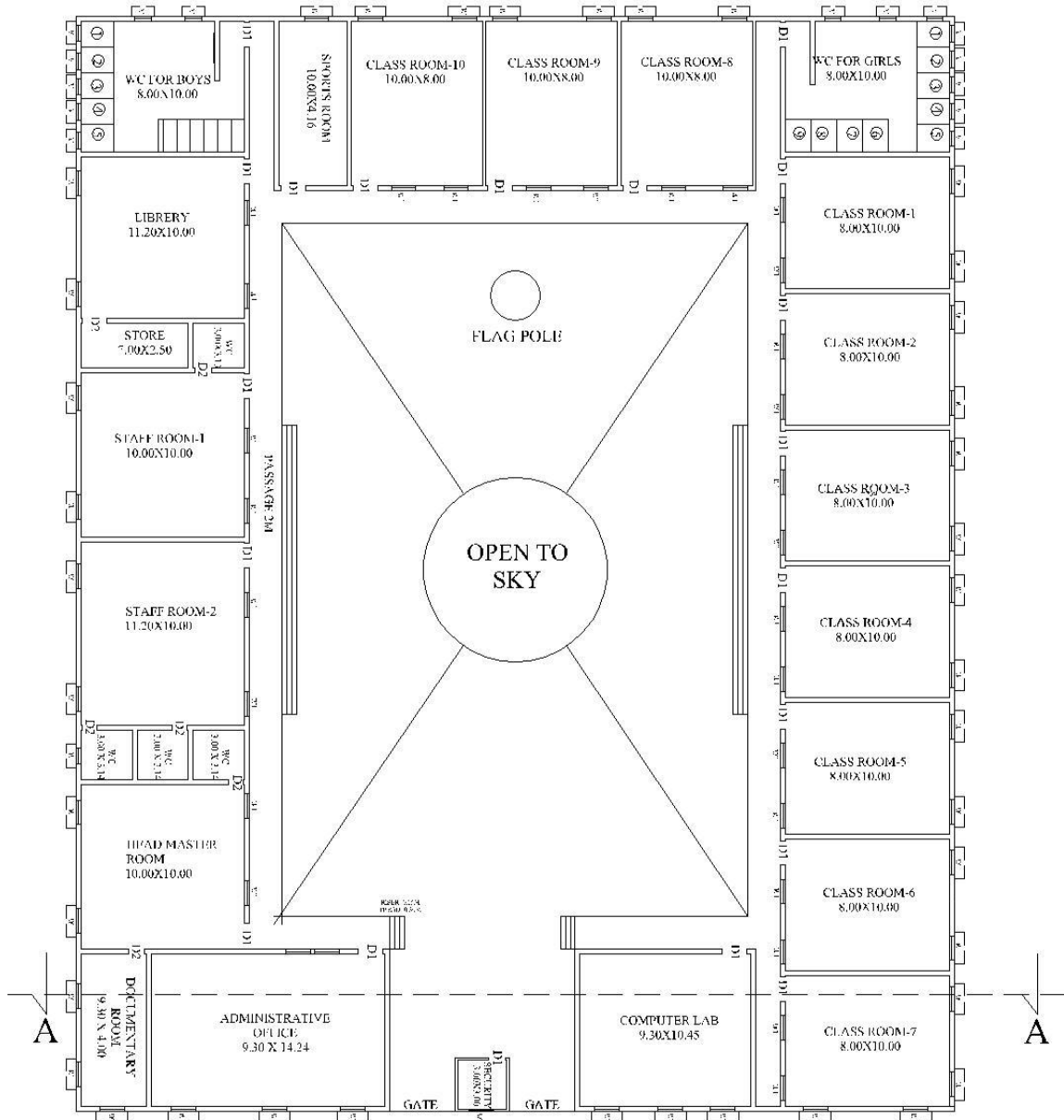
SANITARY AND WATER SUPPLY CONNECTION FOR HOSPITAL BUILDING



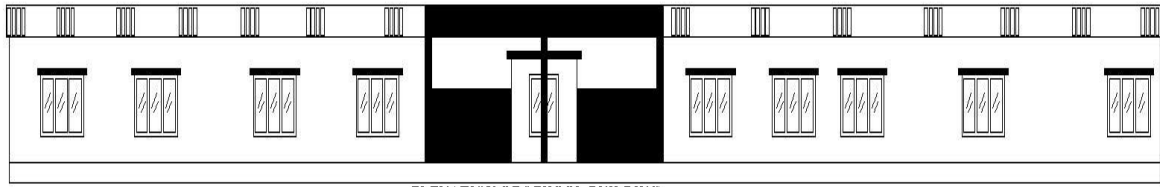
LINE DIAGRAM OF SCHOOL BUILDING



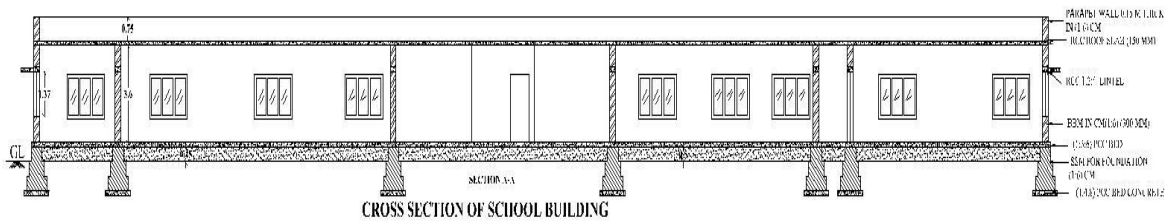
PLAN OF SCHOOL BUILDING



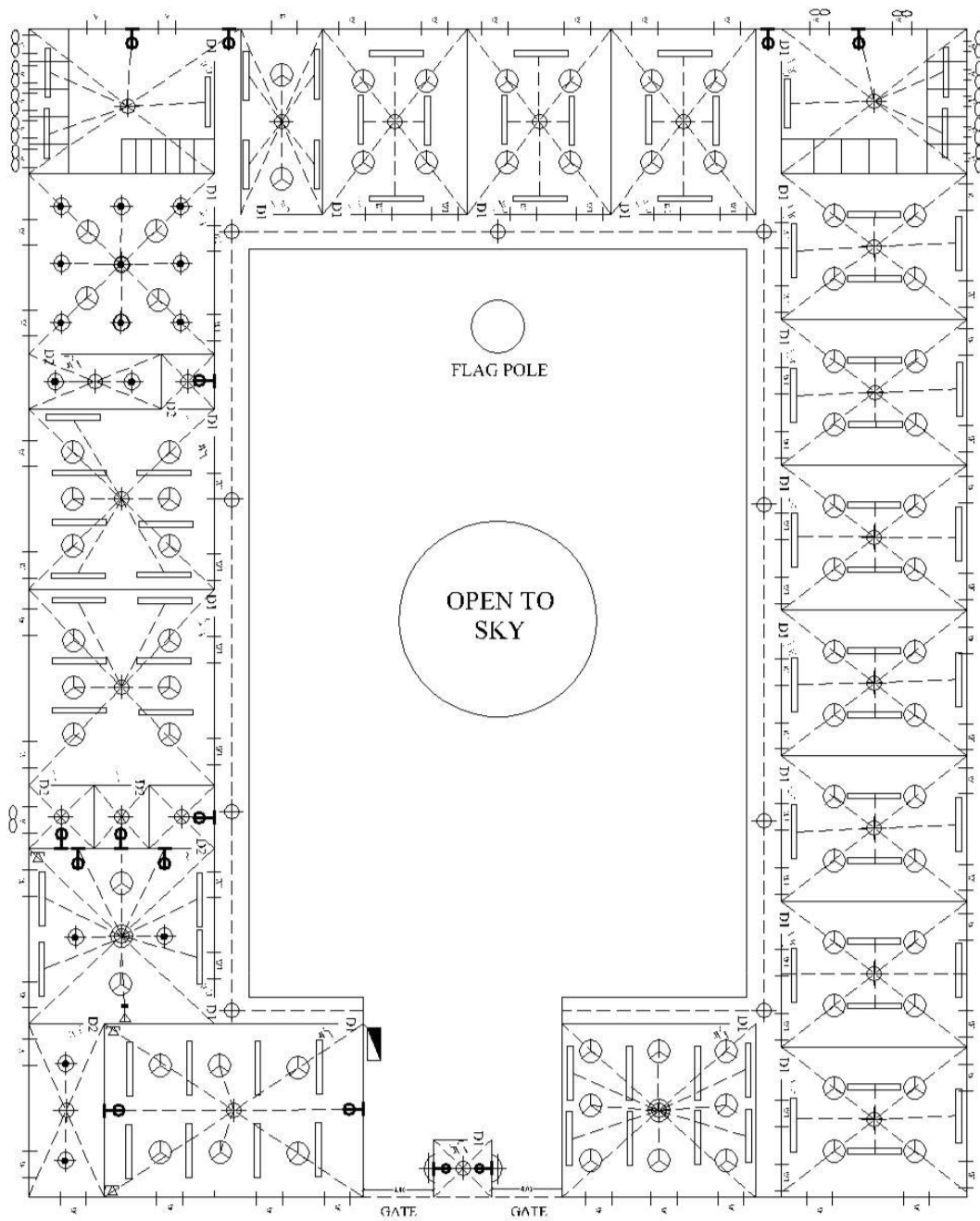
FRONT ELEVATION OF SCHOOL BUILDING



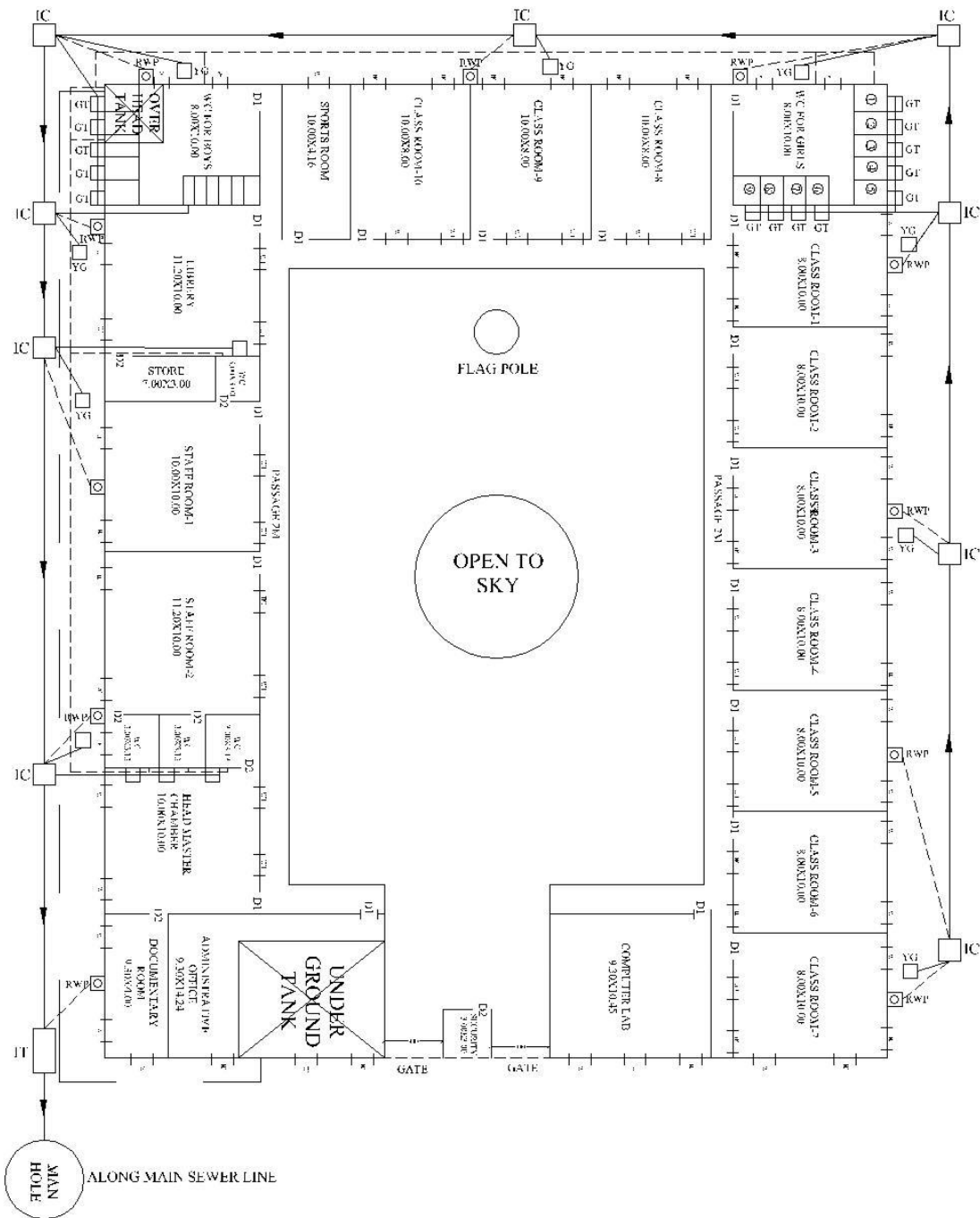
CROSS SECTION OF SCHOOL BUILDING



ELECTRICAL SUPPLY FOR SCHOOL BUILDING



SANITARY AND WATER SUPPLY CONNECTION FOR HOSPITAL BUILDING



AREA STATEMENT (BBMP)

PROJECT DETAIL:

Application No.:	-	Zone:	-
Proposed Type:	Prop. Development	Ward:	-
Nature of Sanction:	New	Plot No./Value:	-
Plot Use:	-	City Survey No.:	-
Location:	-	Property No.:	-
Land Use Zone:	-		
Locality/Street:	-		

AREA DETAILS

AREA OF PLOT (Minimum)	(A)	111.48
NET AREA OF PLOT (Plot Area considered for COVERAGE)	(B)	111.48
BALANCE AREA OF PLOT	(C)	111.48
COVERAGE AREA		
Proposed Coverage Area		68.27
% coverage area achieved		68.27
FAR AREA		126.22
Residential FAR		134.50
Proposed FAR Area		134.50
ACHIEVED NET FAR AREA		134.50
ACHIEVED BUILT UP AREA		0.00

SCHEDULE OF OPENING

DOOR D 1.06 X 2.13 WINDOW W 2.43 X 1.21
 DOOR D1 0.91 X 2.13 WINDOW W1 1.52 X 1.21
 DOOR D2 0.76 X 2.13 WINDOW W2 1.21 X 1.21

DETAILS OF AREA

SITE AREA = 111.48 SQM

FLOOR	BUILT UP	DEDUCTIONS	NET
STILT	68.27 SQM	68.27 SQM	00.00 SQM
GROUND	68.27 SQM	00.00 SQM	68.27 SQM
FIRST	57.96 SQM	00.00 SQM	57.96 SQM
TOTAL	194.49 SQM	68.27 SQM	126.22 SQM

FAR = 126.22 / 111.48 SQM = 1.132 < 1.75
 COVERAGE = 61.23 % < 75 %

PARKING CALCULATION

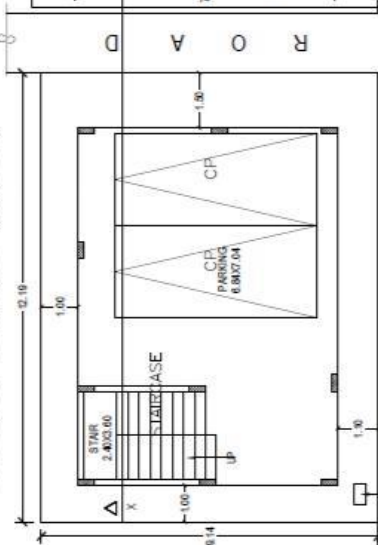
Parking Type	Prop No.	Prop. Area
Car Parking	2	27.50
Two Wheeler Parking	0	0.00
Treaded Vehicle Parking	0	0.00
Cycle Parking	0	0.00
Mechanical Parking	1	32.49
Other Parking	1	32.49
Total	3	59.99

SCHEDULE OF JOINERY:

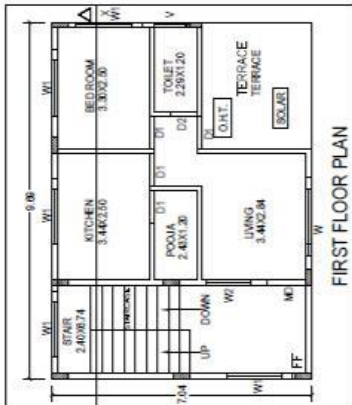
NAME	LENGTH	HEIGHT	NOS.
DT	0.75	2.10	02
D	0.90	2.10	08
MD	1.00	2.10	02
V	1.00	0.80	02
W	1.00	1.20	14



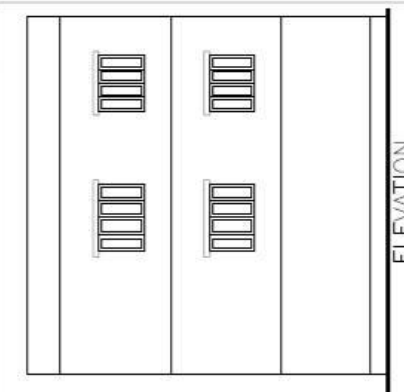
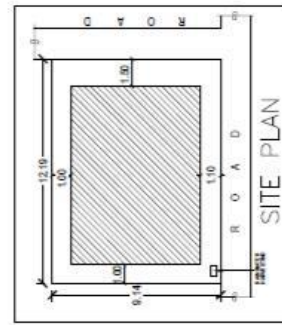
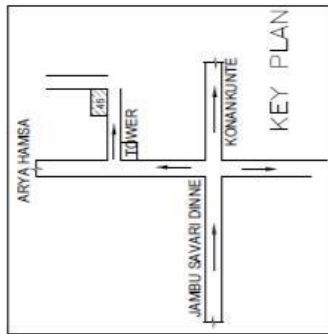
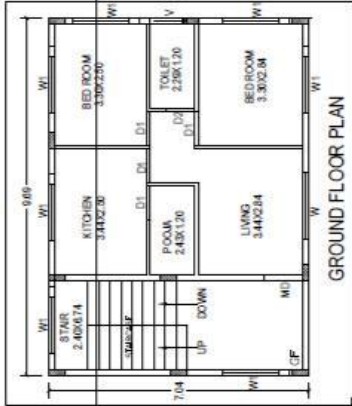
SANCTION DRAWING (Fig:3.6)



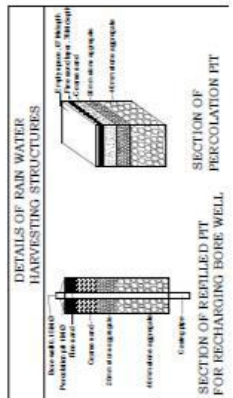
FIRST FLOOR PLAN



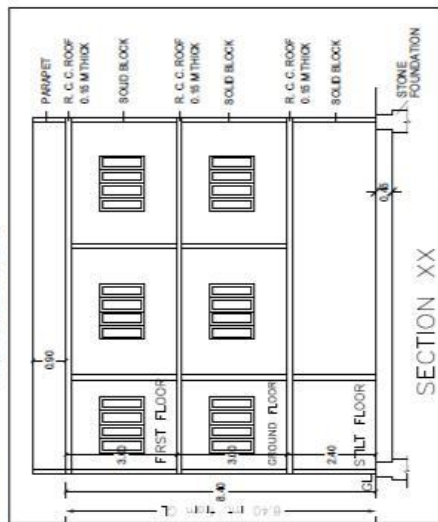
GROUND FLOOR PLAN



ELEVATION



STILT FLOOR PLAN



SECTION XX

LEARNING OUTCOMES

- After learning, student will be able to develop the double line diagram, cross-section, front elevation of the single line residential, school, hostel ,hospital buildings.
- In the preparation of drawings of residential, public and industrial buildings.