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SECTION # A

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SUBJECT # CIVIL ENGINEERING

DRAWING AND GRAPHICS

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QUESTION NO #01

Drawing plays an important Role in the construction field to convey the ideologies and perspective of the designer to the layman at site.

TYPES OF CONSTRUCTION DRAWING:-

Following are the types of drawing construction depending upon the purpose they serve construction drawing and divided into Five types.

1) ARCHITECTURAL DRAWING:-

Architecture drawing is the mother "for" drawing for all the other drawings used for construction. It contain all the details of the project such as location, site plan, setting out plan, elevations section and other details.

SITE PLAN:-

This is primary drawing used for marking out the plan on the ground. It Represents location, orientation and

information about the site topography, land scaping utilities and site work.

WORKING PLAN:-

This drawing gives the information of the Horizontal building dimension of the building, thickness of walls, clear space inside the building and column location, It also shows the opening Required in the building such as doors window and ventilators.

SECTION DRAWING:-

Section drawing Represents the Material of construction to be used, height and Measurement of the different components of building, type of structural components such as slab etc. It Represent Represents drawing when a building is cut through a vertical plan.

ELEVATION DRAWING:-

Elevation drawing Represents the information of openings, size and shape of external surface, height of building and finish of building after completion.

2) STRUCTURAL DRAWING:-

Structural drawing can be termed as backbone drawing of the building. It consists all the information about the structural intervention that are coming on a building.

GENERAL NOTE:-

This is more of a code and by laws of the building, No drawing is found in this, but the details of all the structures drawings are mention such as concrete mix, lapping lenght etc.

EXCAVATION DRAWING:-

This drawing Represents the footing excavation dimension, column position footing plan and grid lines of column.

COLUMN LAYOUT:-

This drawing Represents the position and orientation of coloumn and column Reinforcement details.

PLINTH BEAM LAYOUT:-

This drawing Represents the dimensions position and section of plinth beam and detail of Reinforcement in plinth beam.

LINTEL BEAM LAYOUT:-

This drawing Represents the dimension position and section lintel beam.

ROOF SLAB LAYOUT:-

This drawing Represents the detail of Reinforcement of Roof slab and section and opening in the Roof for various purpose such as stairs or skylight.

3) ELECTRICAL DRAWING:-

Electrical drawing Represents the electrical fixtures location of switches, fan, light and others. It also Represents the load calculation, tapping for electricity, wiring Path or other intervention such as AC and ups and its components.

4) PLUMBING DRAWING:-

plumbing Drawing give the location of sanitary, piping for water supply system, fixture and the process to connect every fixtures.

5) FINISHING DRAWING:-

Finishing drawing Represents the finish type of every component of building such as flooring, pattern, painting colours, false ceiling shapes plastering texture and elevation design. These details are sometimes giving in elevation drawing also

QUESTION NO = 02

STRUCTURE DRAWING:-

Structure drawing is the backbone of all drawing because it cover the most important function of the building i.e:- load.

A structure must have the capacity to bear all the dead and live load, so from structure drawing we can safely achieve that purpose.

GENERAL NOTE:-

General Note are part of structural drawing and they cover the codes used in design and by-laws of the building. Typically there are no details on these drawings. Stoucture notes providing information Regarding general material properties (Steel or wood grade concrete strength etc).

OR construction Requirements (Soil Compaction, Weld Procedure etc) The structure notes also provide information about design criteria (Gravity and Wind loading).

STRUCTURAL PLAN:-

The structural plan drawing shows the foundation, floor and Roof plan of the building.

These plans provide information like size and location of the structure elements present in the respective plans.

ELEVATIONS:-

Elevation shows the exterior walls of a building or structure. In elevation drawing you can find the ft^ height of building (floor and Roof elevation) and structure properties elements poesents in the

walls and that cannot be seen in plan drawings.

SECTION:

Section plan are Reference in plan view drawing and provide information about element that cannot be see in plan drawing the section usually are cut through walls or structural element that are not typical and the constructor needs to be aware off.

DETAILS DRAWING:

The details drawing provide particular information on how to construct or connect the structral elements. The details can be referenced in plan, elevation and sections.

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PLUMBING DRAWING:-

Plumbing is the system of pipes, drains fitting, valves, valves assemblies and device installed in a building for distribution of water for drinking heating and washing for the Removal of waterborne, wastes and skill trade of working with pipes, tubing and plumbing fixtures in such system

COMPONENTS OF PLUMBING DRAWING:

=) **PIPES:-**

A hollow cylindrical following certain dimensions Rules

various types of pipes are discussed below

PEX

Flexible plasting pipe.

slightly high initial cost.

Minimum maintained and fast installation process.

COPPER PIPING:-

Copper piping is most often used for supply of hot and cold tap waters, and as refrigerant line in HVAC system. (Heating, ventilatation and Air conditioning).

There are two basic type copper

1) Soft copper
2) Rigid copper.

PVC

PVC full name poly vinyl chloride. used for hot and cold potable water as well with sewage application.

vary on thier thickness and configuration depending on the application where to be used.

GALVANIZED PIPING:-

used several years Ago
used in the petroleum industries.
used for high temperature and pressure manufacturing process.

can be used to transport grey water or Non-Potable water.

BRASS:-

Brass is an alloy made of copper and Zinc.
Provide great Rust Resisting piping
Made of 67% to 85% of copper.
Generally comes in 12 foot straight lenght.

=> PIPE FITTING:-

Fitting is used in pipe plumbing system to connect straight pipe or tubing section, to adapt to different size or shapes and for other purpose, such as Regulating or Measuring fluid flow.
various common fitting are described below:

COUPLING:-

A coupling connects two pipes to each other. if the size of the pipe is not the same, the fitting

the fitting may be called the Reducing couple or Reducer or an adapter.

REDUCER:-

A Reducer allows for change in pipe size to meet a hydraulic flow Requirements of the system or to adapting to existing piping of a different size.

ELBOW:-

Installed between two lenghts of pipe or tubing to allow change of direction a 90 degree or 45.

UNIONS:-

A unions is similar to coupling except it is designed to allow quick and convenient disconnection of pipes foo maintainance or fixture Replacement

TEE:-

Available with all female thread sockets, all solvents weld sockets or with opposed solvent weld sockets

and a side outlet with female threads.
Used to either combined or splits a fluid flow.

CROSS:-

Also called four way fitting.
It has one inlet and three outlet and vice versa.
Common in fire sprinkler system due to their extra cost.

CAP:-

A cap is used like plug, except that the pipe cap screws or attaches on the male thread of a pipe.
In plumbing system that use threads the cap have female threads

BARB:-

Used to connect flexible hoses of pipe.
It has a male threaded end used to mate with the female thread.
It can be made of plastic OR Brass.