

**TISHK INTERNATIONAL UNIVERSITY  
FACULTY OF ENGINEERING  
CIVIL ENGINEERING DEPARTMENT**



# **Architecture For Civil Engineering**

**TOPIC: Lecture 1**

**Types of Drawings & Structures**

**3rd Grade- Fall Semester 2020**

**Instructor: Muhammad Rojnamachy**

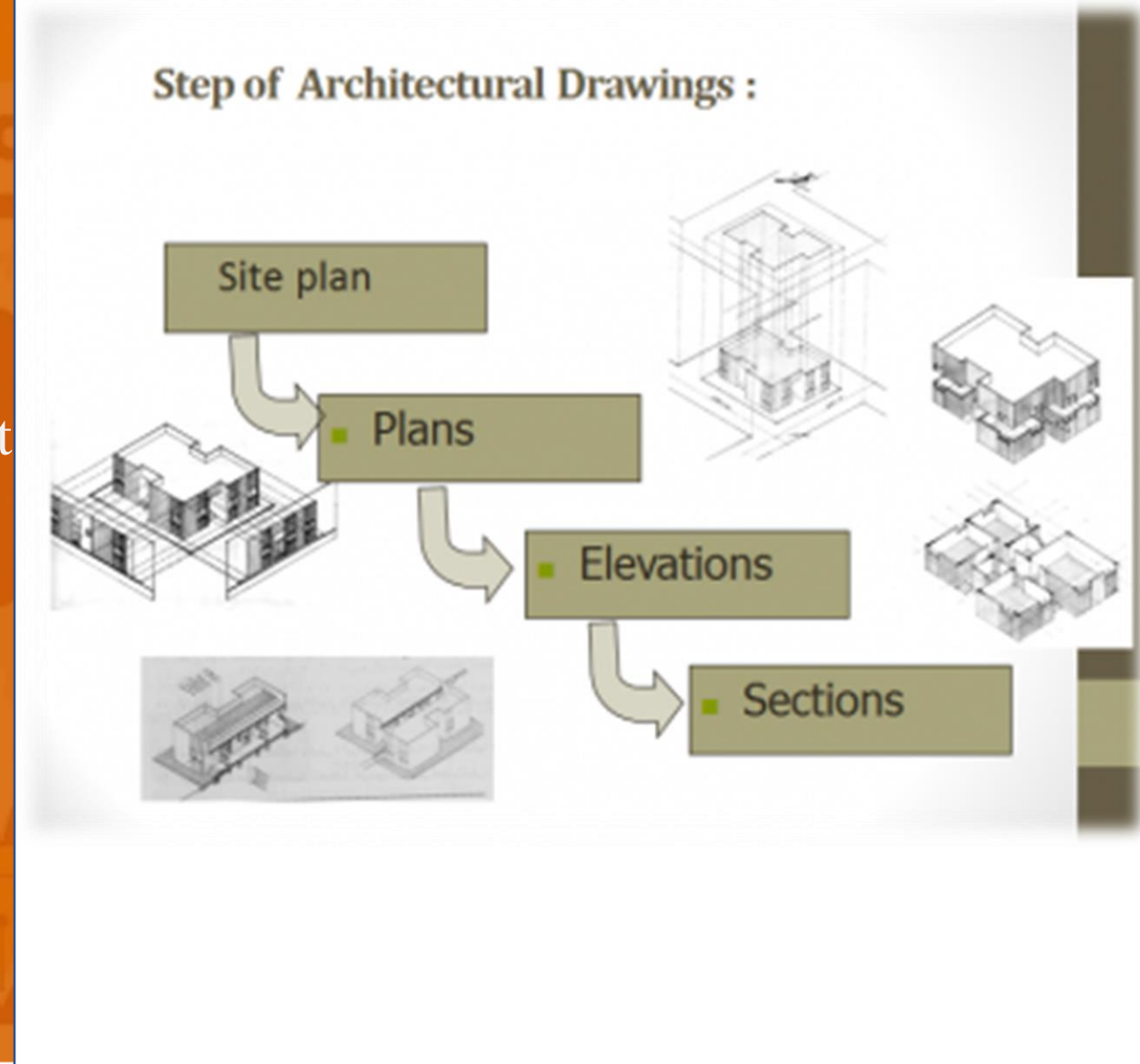


# -Types of Drawings

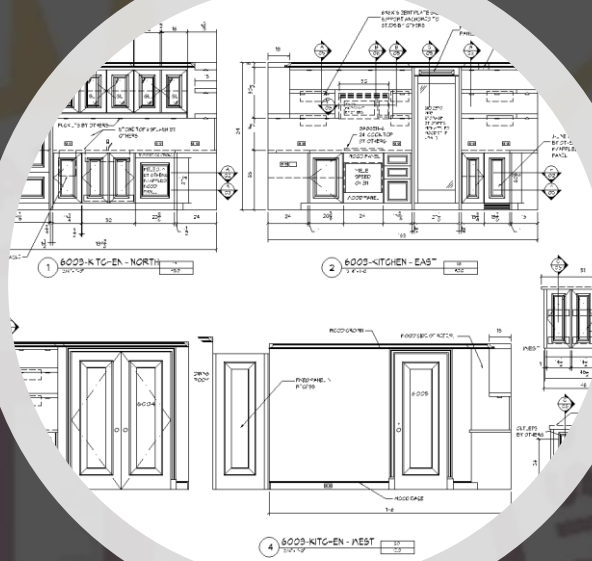
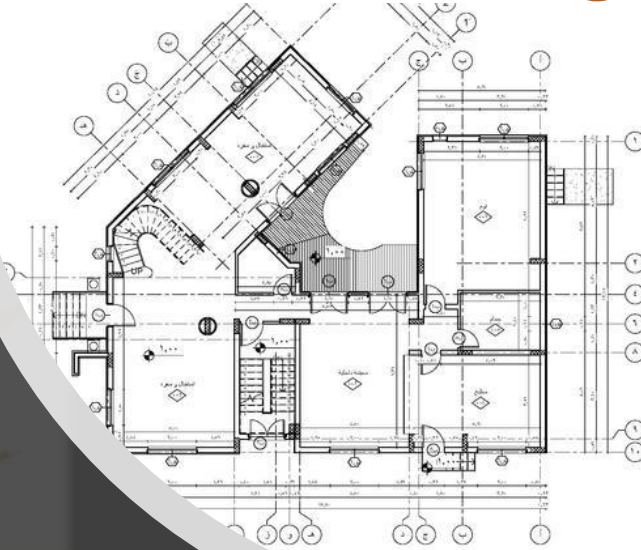
## -Introduction

-Architectural drawing is simply the technical drawing of a house, a building or any kind of structure.

- Technical drawings are graphic representations such as lines and symbols that follow specific conventions of scale and projection.
- They are used in architecture, construction, engineering, or mapping.
- It's a schematic representation of a building.



## 3-Execution Drawings



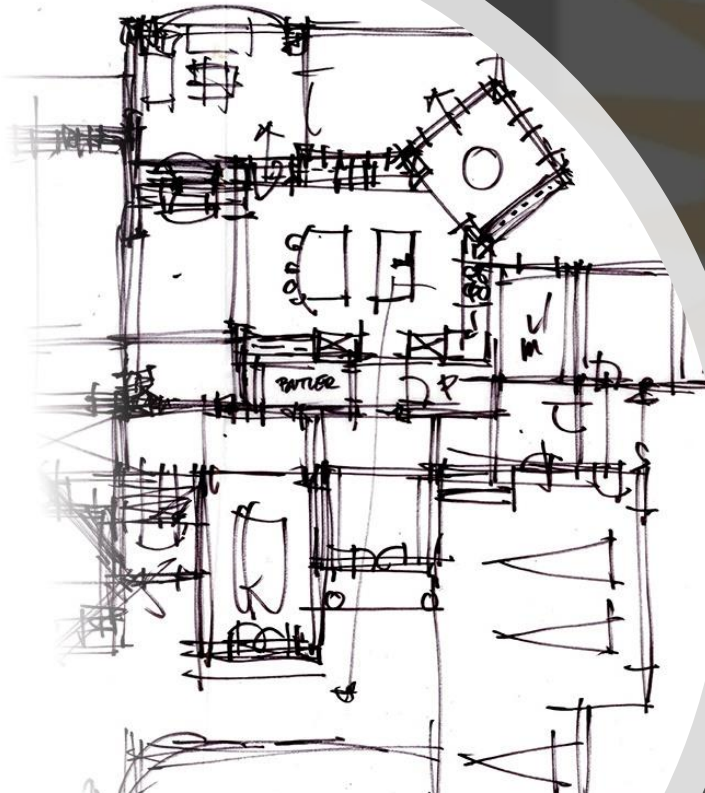
## 4-Shop Drawings

# Types of Drawings



## 5-As Built Drawings

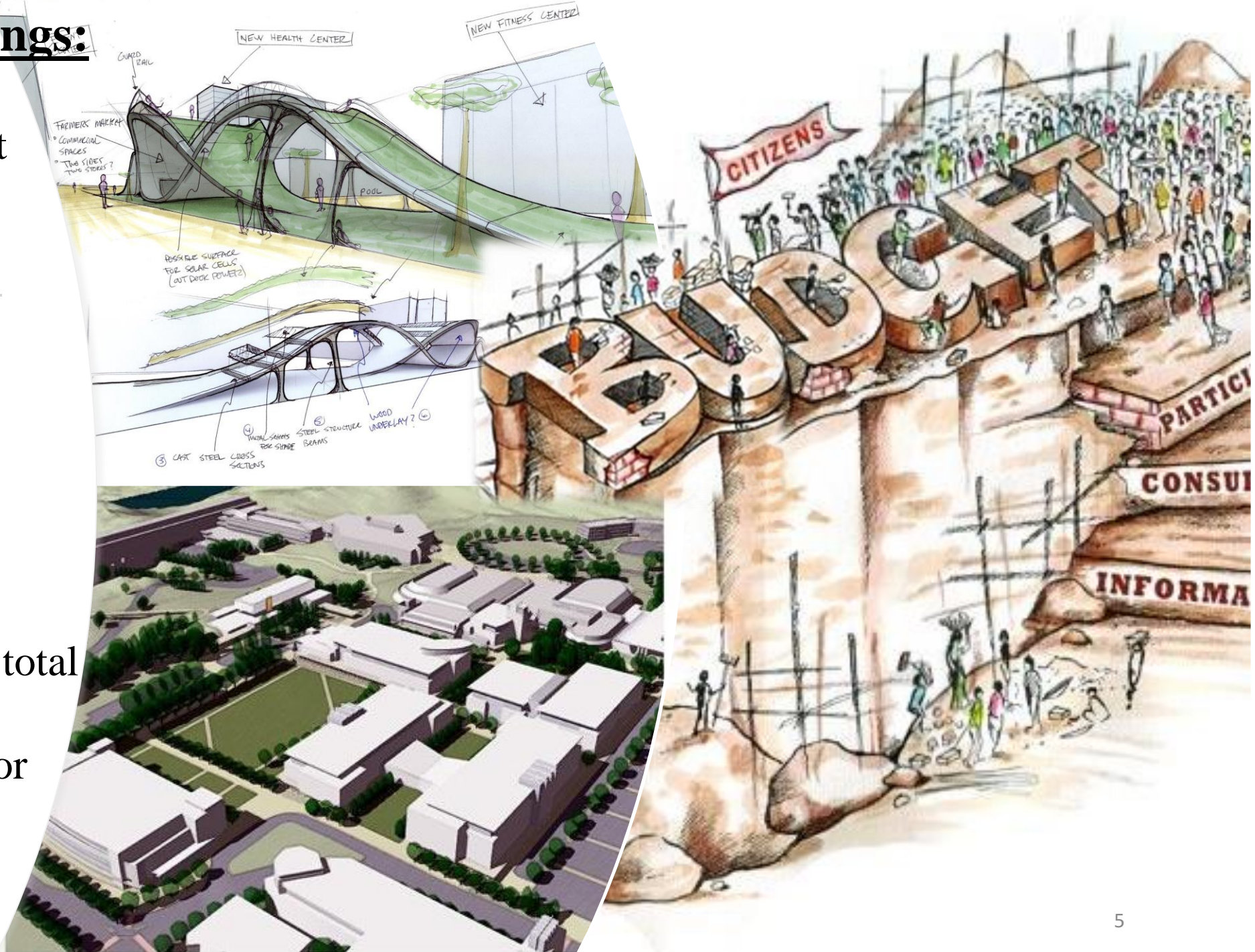
## 2-Contract Drawings



## 1-Preliminary Drawings

# 1-Preliminary Drawings:

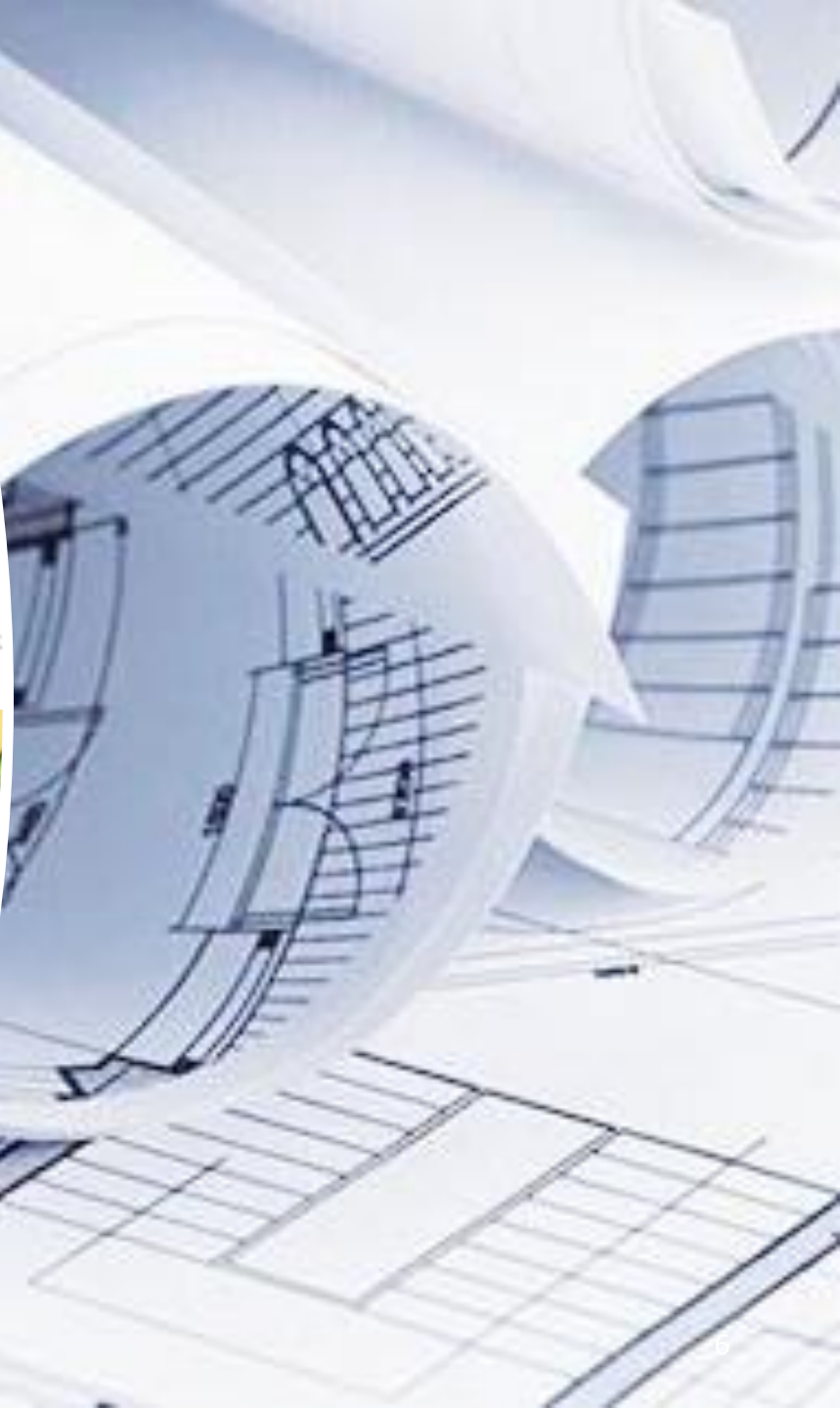
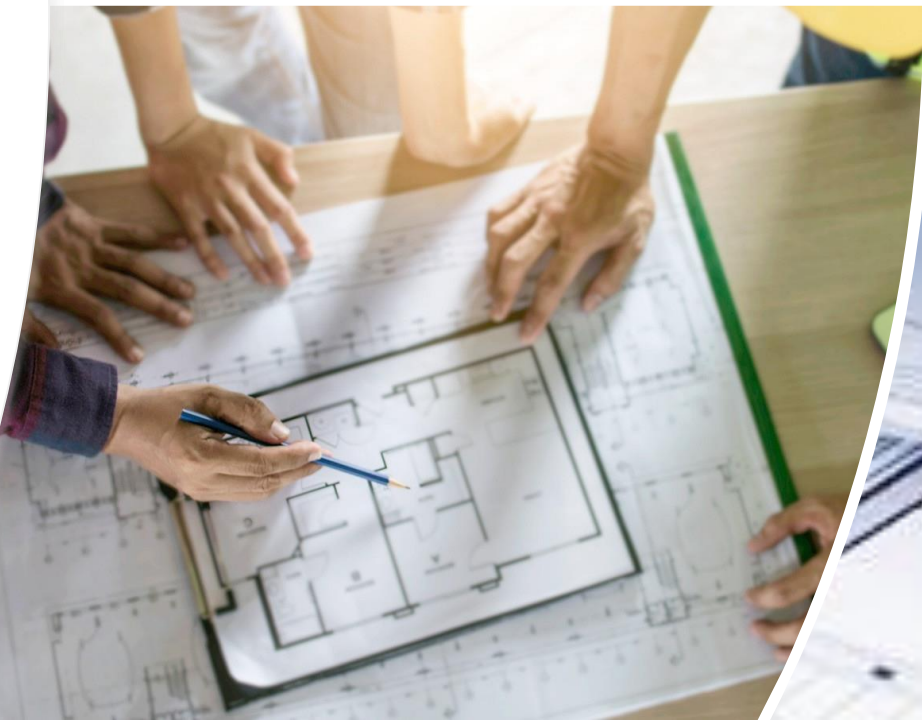
- Provide design concept schematics.
- Outline & single line drawings.
- DFR's (Diagram of functional relationship).
- Sketches or renderings.
- Always submitted for approval.
- Preliminary drawings prepared to visualize the total project to the owner.
- Preliminary drawings for preparation of a realistic budget.



## 2-Contract Drawings

- The contract drawings are used as an essential part of the contract.
- 

- Keep a set on the job with all changes and revisions posted.



### 3- Execution Drawings

- Based on the design presented in the preliminary drawings, approved by owner.

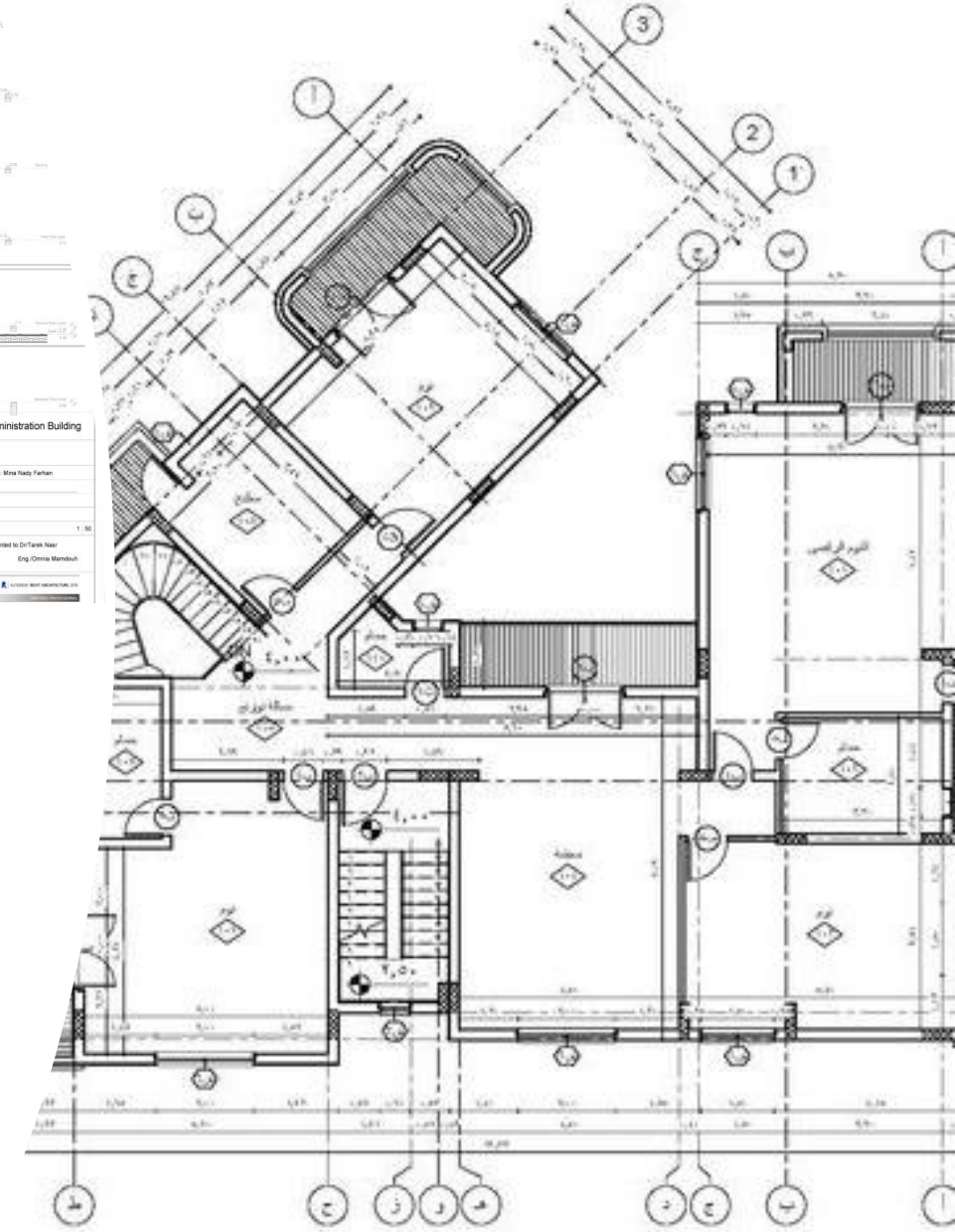
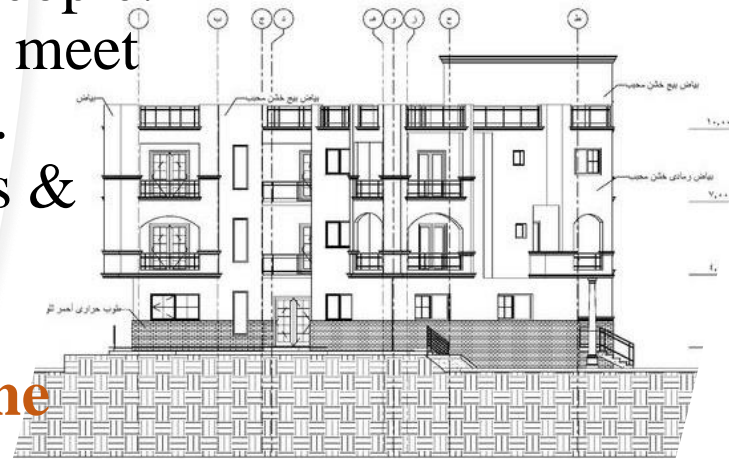
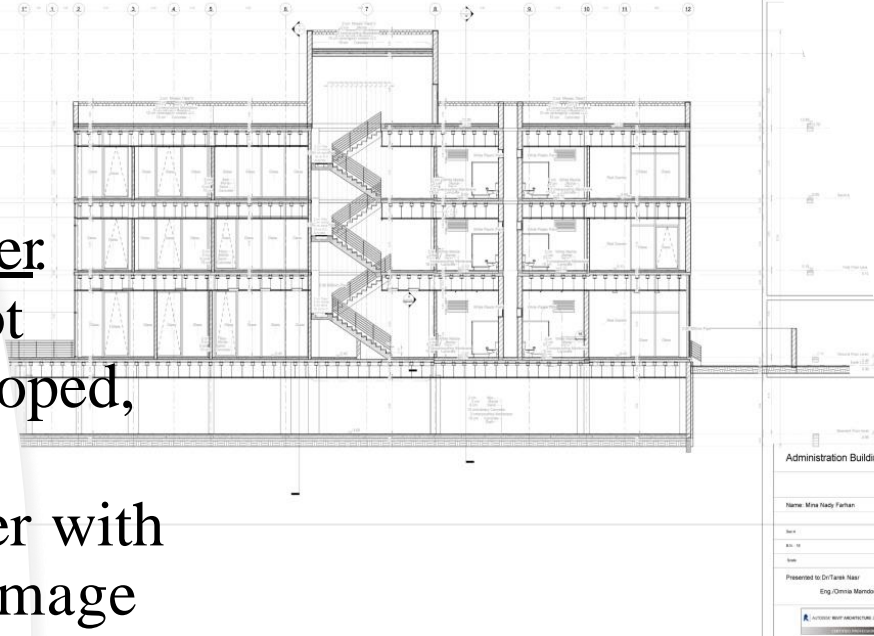
- The approved design is not changed but it is further developed, defined, and improved.

- Execution Drawings together with specifications give complete image of the project.

- Used by several groups of people.
- Hence should be prepared to meet the requirement of each group.

- Contain detailed dimensions & information that establishes:

- **Sizes, Relationships, and Location of all elements of the project**



# 4- Shop Drawings

-Shop drawings are an extension and further development of Execution drawings.

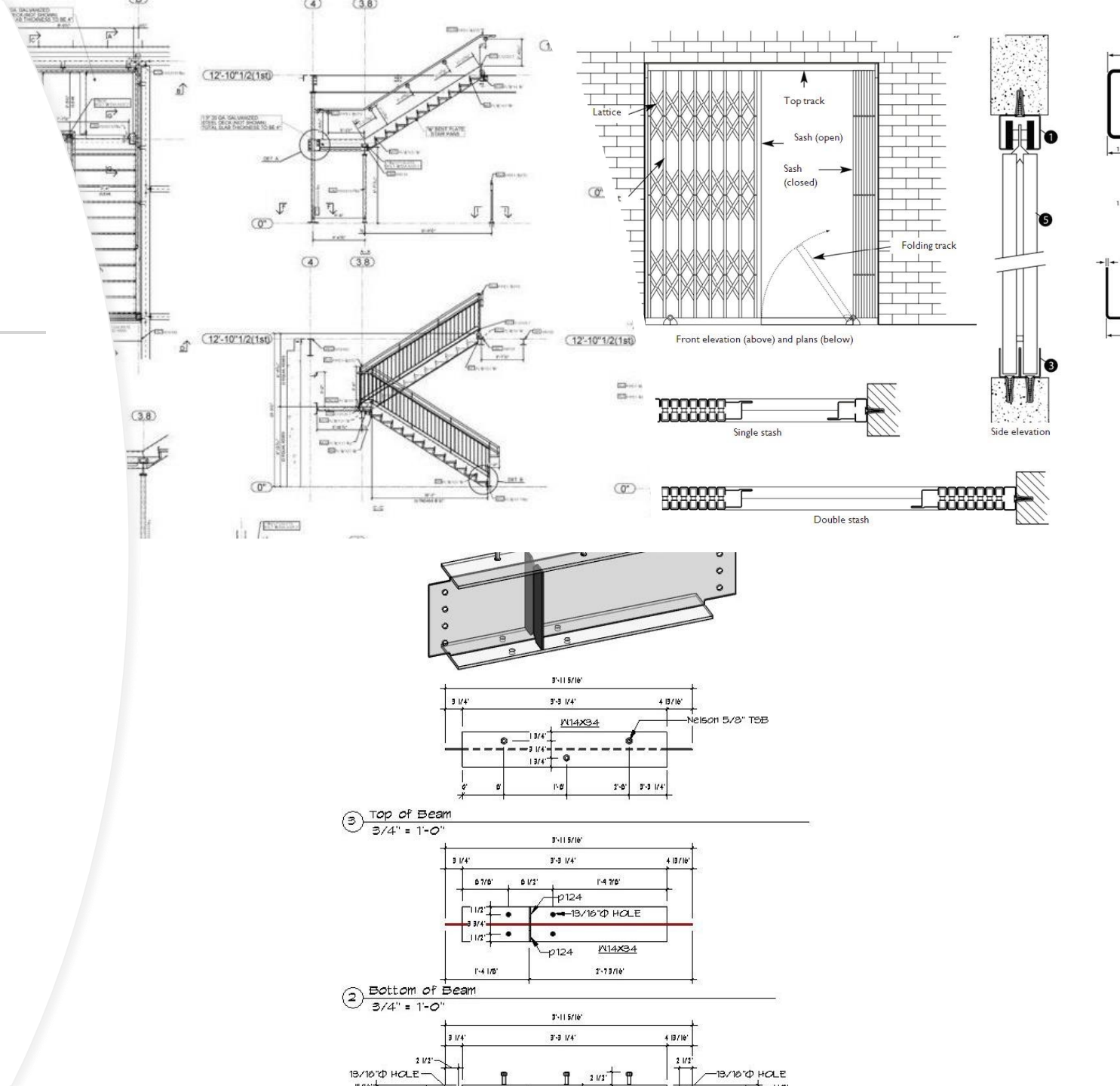
- Shop drawings do not change the intent of the Execution drawings.

- Prepared by subcontractors or

- Material suppliers.

- In some cases also by the general contractor

- Shop drawings are provided for works such as: Installation and fabrication, structural steel work, metal windows and doors, pipes and pumps and etc.....





# 5- AS Built Drawings

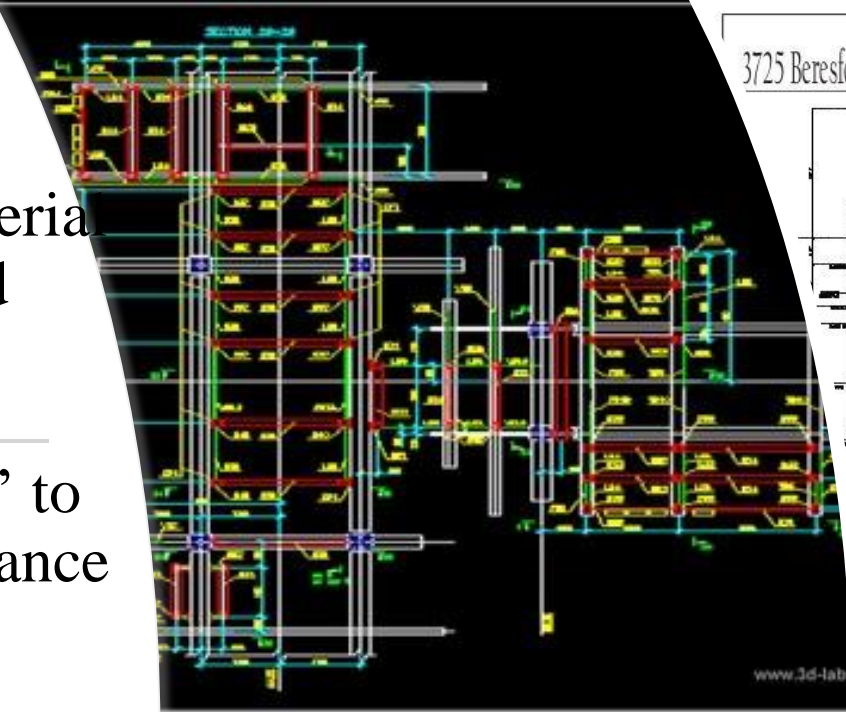
- Most specifications require that the contractor refrain from ordering material until the shop drawings are approved officially. (IN WRITING)

- Usually these are “location drawings” to which the owner may refer for maintenance and repairs.

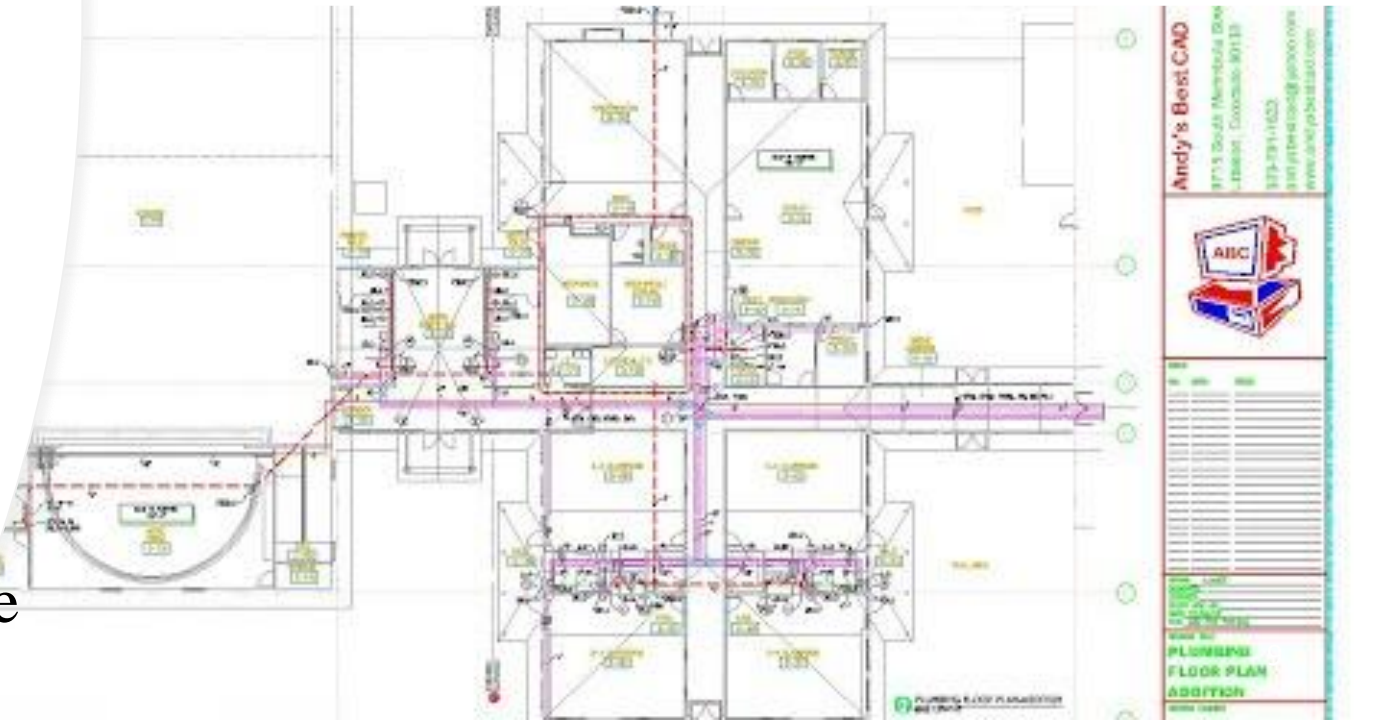
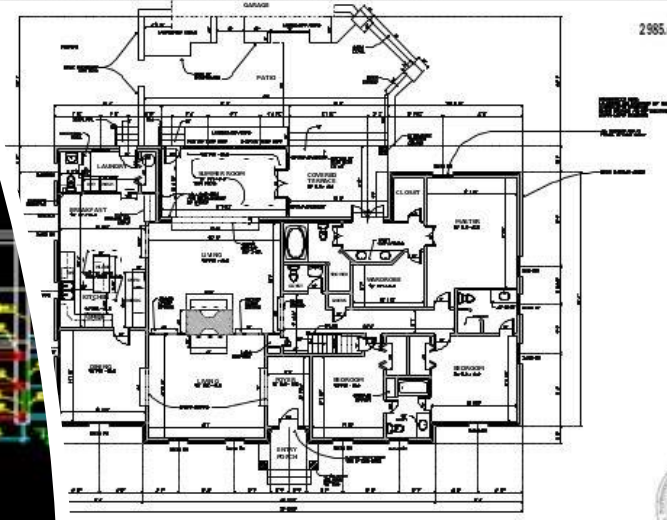
- Execution drawings show ”proposed” locations for pipes, valves, manholes, etc....., as built drawings show “actual” locations, of installations.

- Usually general contractor or sub-contractors prepare as-built drawings.

- Requirement for as-built drawing, should be included in bidding documents.



3725 Beresford Road, Charlotte, North Carolina, 28211



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1711 South Memorial Drive  
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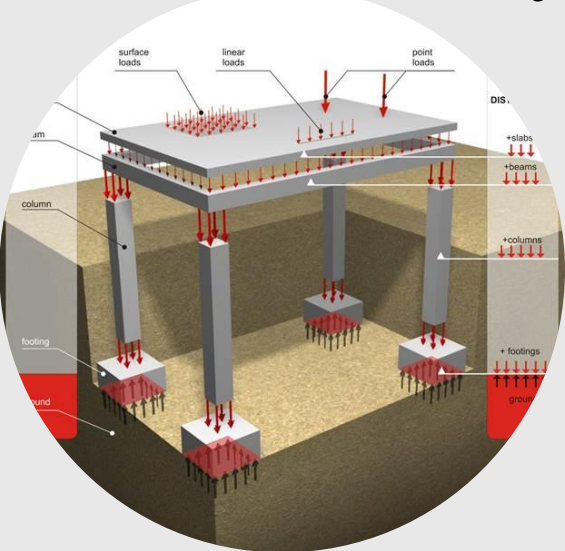


NO.	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
1	PLUMBING FLOOR PLAN ADDITION				
2					
3					
4					
5					
6					
7					
8					
9					
10					

# 1-Wall Bearing System



# 2- Skeleton Structure System



# Types of Structures

# 3-Shell System



# 4-Cables System



# 5- Tent System

# 1-Wall Bearing System

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- This type of **system** uses **walls** to carry the vertical and lateral loads of the structure down to its foundation.
- Materials used for this **system** include but not limited to wood, concrete, and brick



# 2- Skeleton Structure System

1

**Beam and column System**

2

Frames

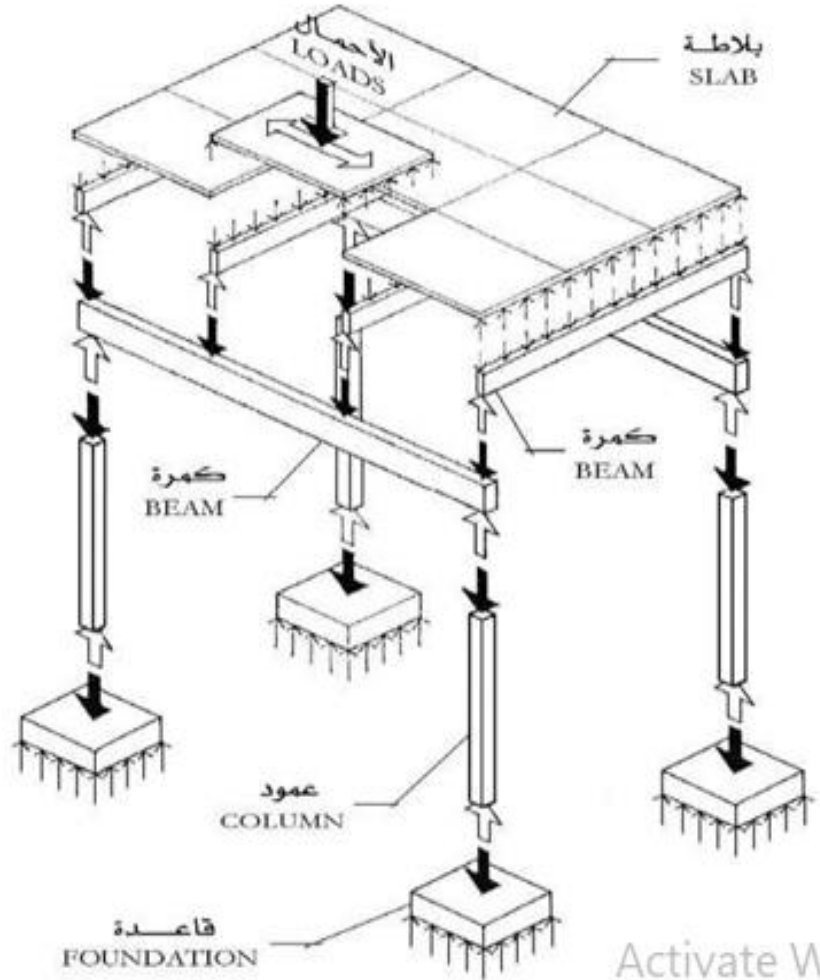
3

Trusses

4

Arches

The load of the slab is transferred to the columns or walls through the beams, down to the foundation, and then to the supporting soil below .



Activate Wi

## 2- Skeleton System

1

Beam and column  
System

is a building technique with a skeleton frame of vertical columns and horizontal beams, constructed in a rectangular grid to support the floors, roof and walls of a building which are all attached to the frames .

2

Frames

3

Trusses

4

Arches



# 2- Skeleton Structure System

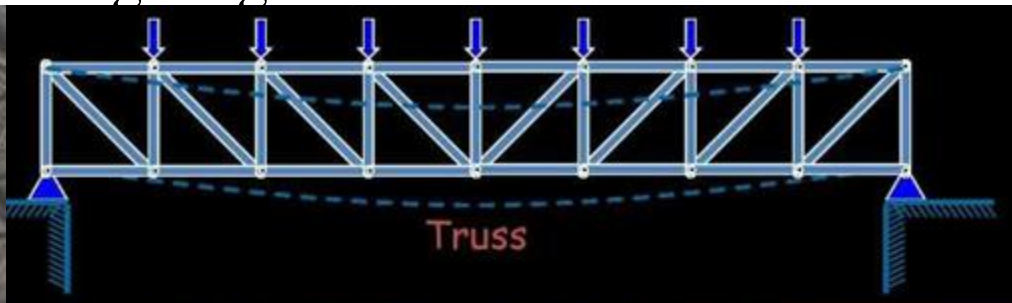
1 Beam and column System

2 Frames

3 **Trusses**

4 Arches

Trusses are composed of straight members connected at their ends by hinged connections to form a stable configuration. Because of their light weight and high strength, are among the most commonly used to span of long lengths .



## 2- Skeleton Structure System

1

Beam and column  
System

A structure, forming the curved, pointed, or flat upper edge of an open space and supporting the weight above it, as in a bridge or doorway .

2

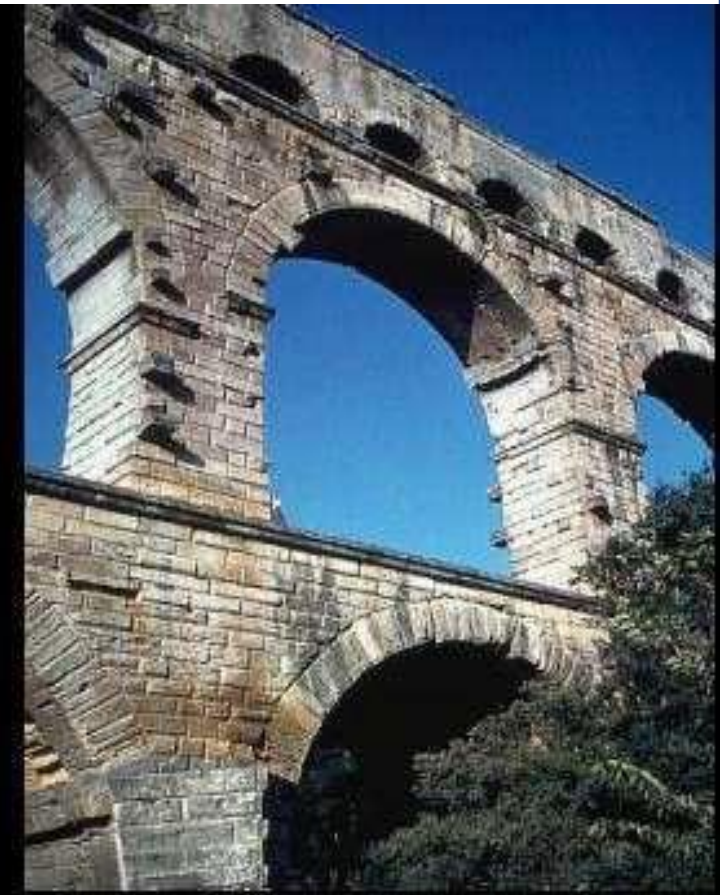
Frames

3

Truss

4

Arches



# 3- Shell System

1 **Shell**

2 **Folded**

3 **Domes**

**-Shell** structures can be made of such materials as:

- Reinforced thin-shell concrete,
- Glass
- Steel
- Glass & Steel
- Plastic





## 4- Tent System

- A **Tent** is a shelter, consisting of sheets of fabric or other materials draped over or attached to a frame of poles and/or ropes .
- Some tents styles are free-standing, whole others are attached to the ground .
- Modern tents are usually made of fire-resistant materials.



## 5- Cables System

- A **Cable** structure is a type of structure that utilizes tensioned cables to support or transmit the major loads of the structure.
- In conventional structures, concrete columns are usually used to support the self-weight of the structure as well as the downward loads but there are cases where this system is undesirable.

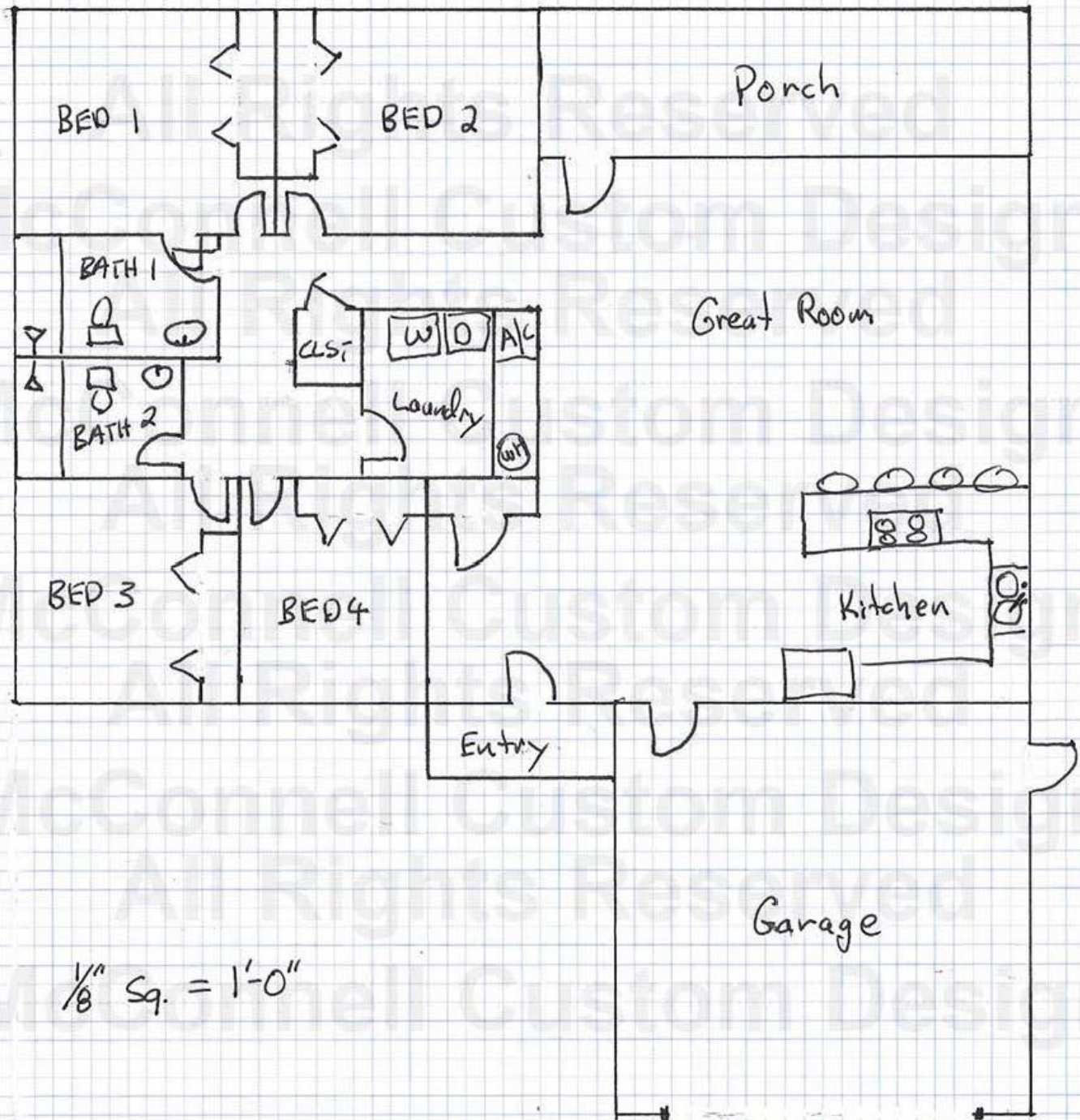


# Homework

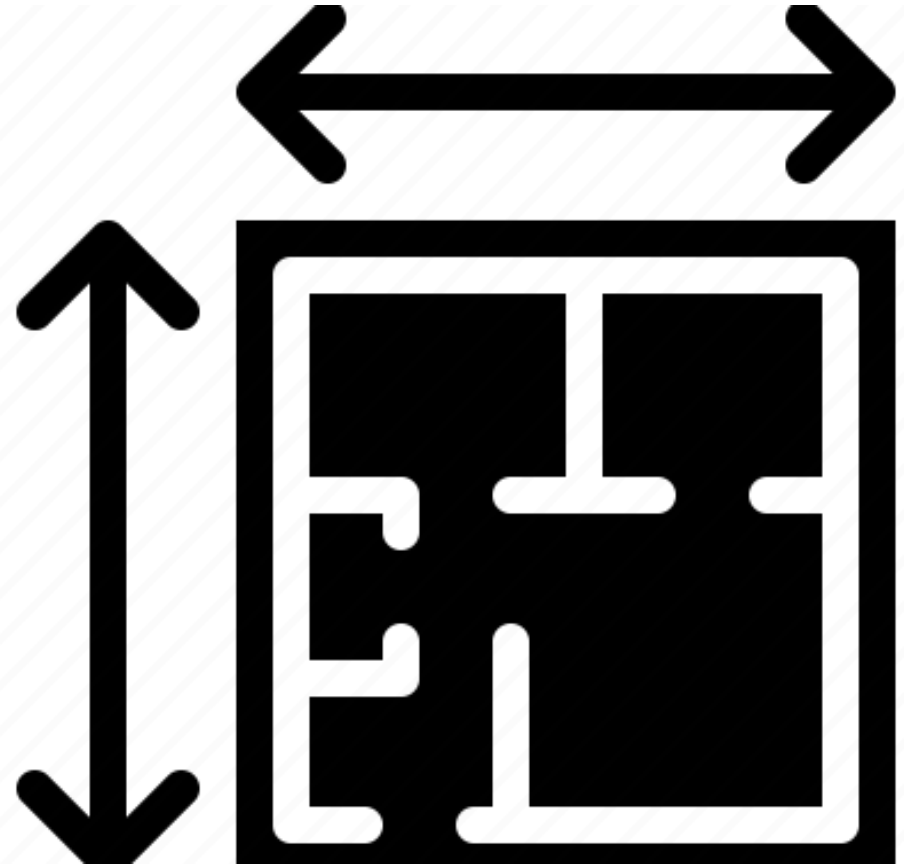
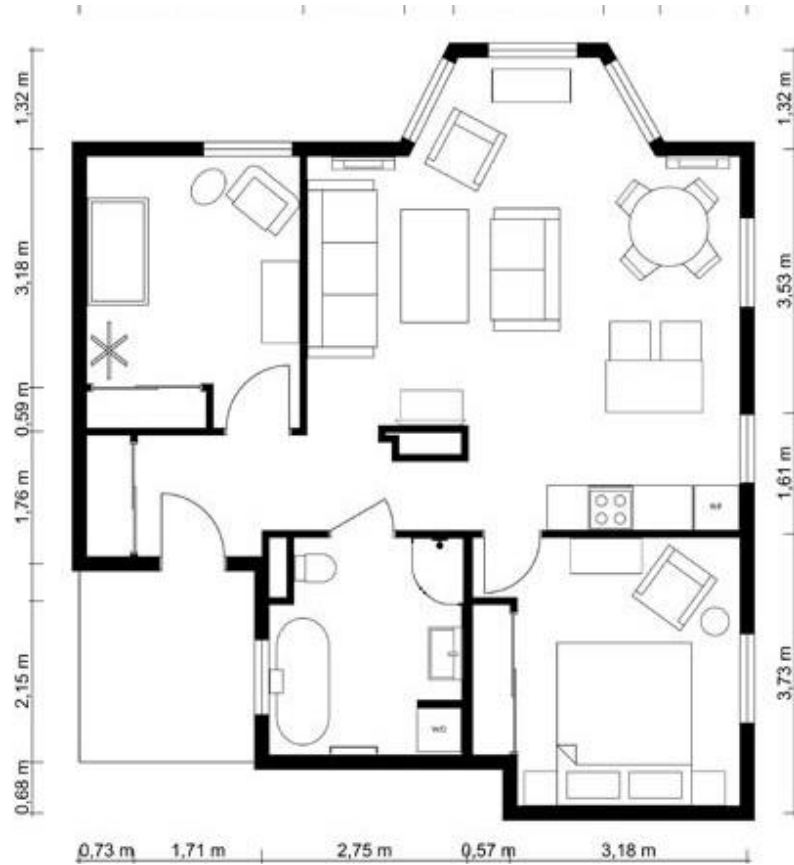
• Draw your Home / Apartment spaces (Plan) as single lines, that could specify all the spaces with their areas in to actual dimensions showing all the points below :

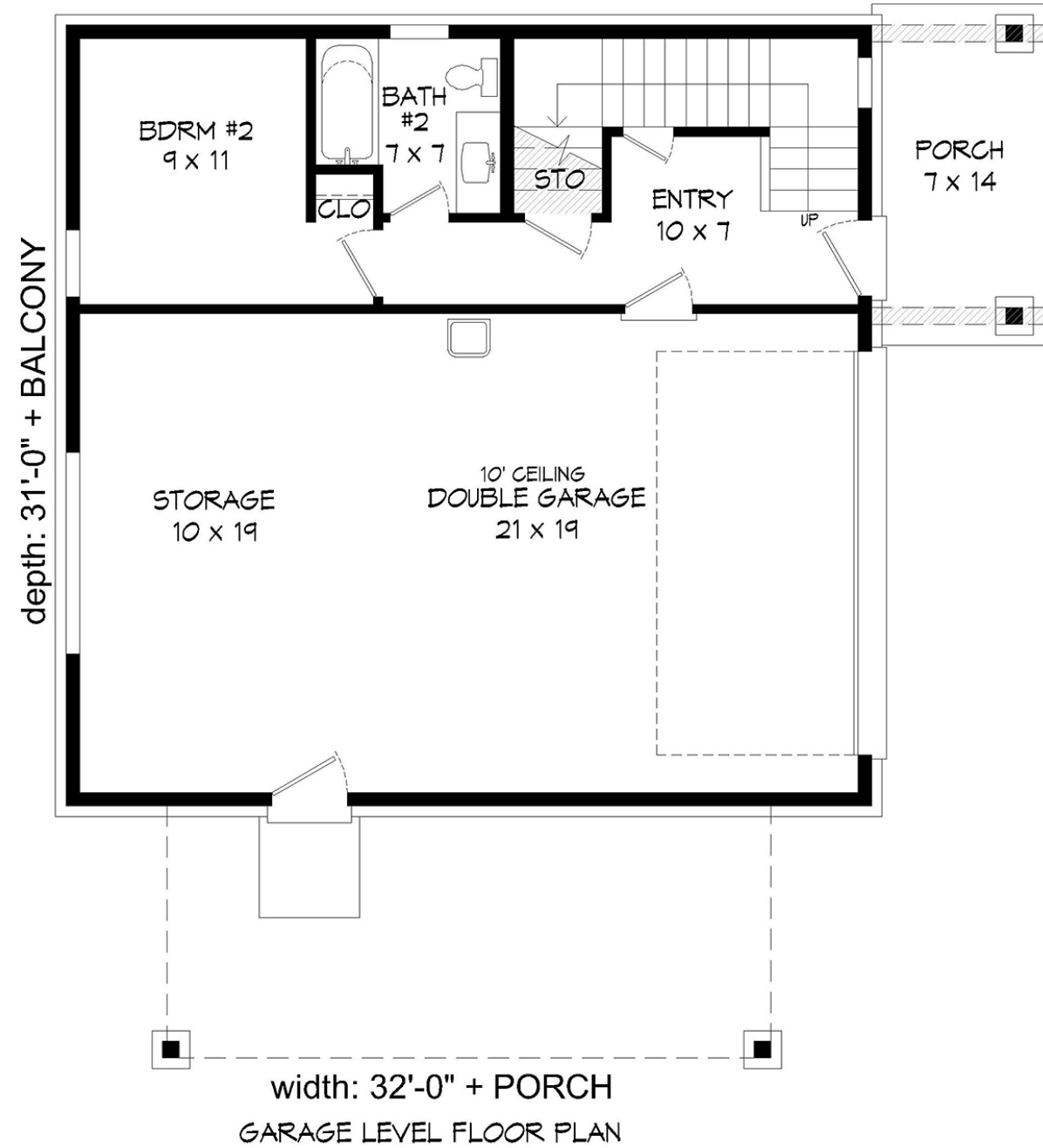
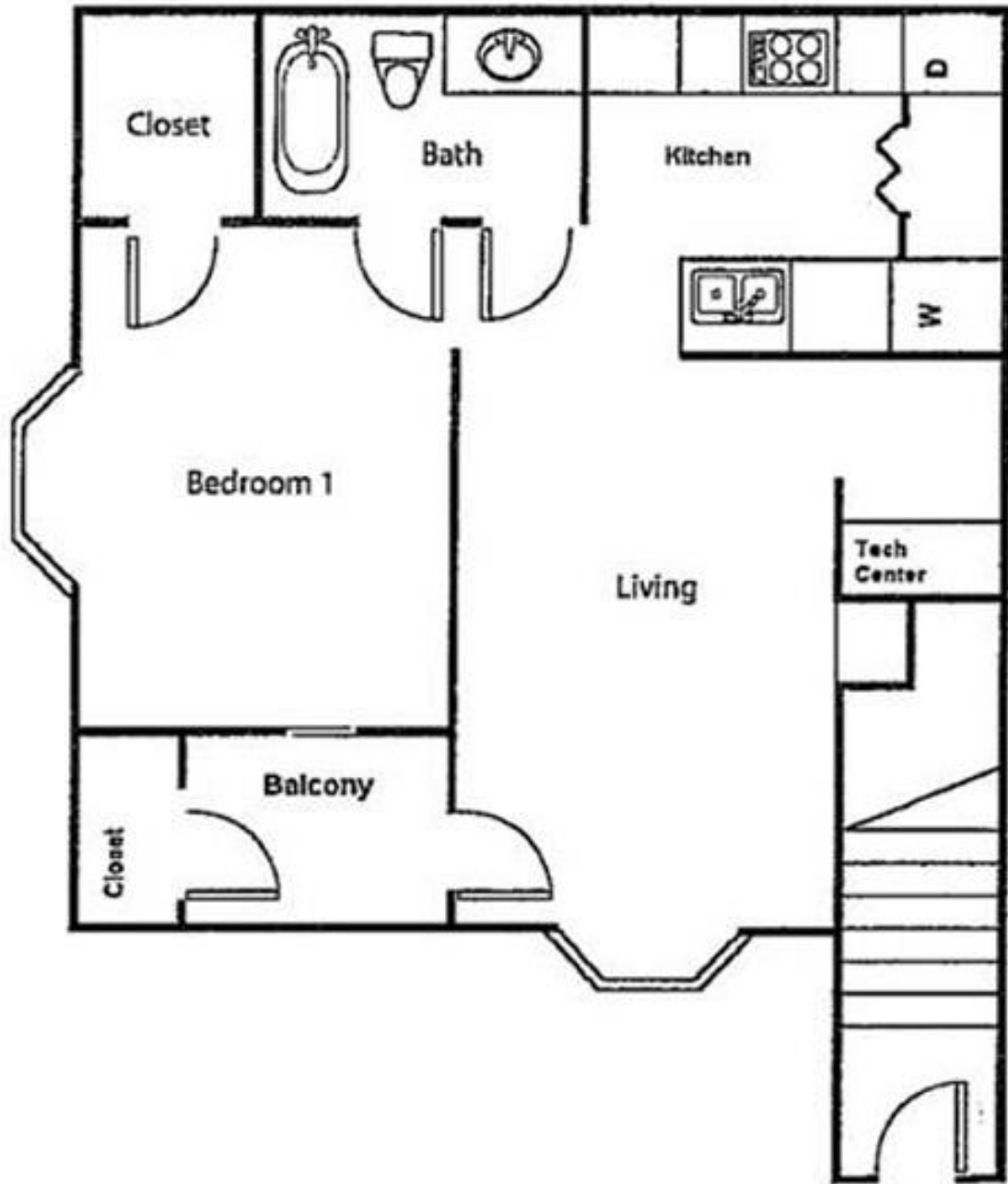
- Walls
- Doors & Windows
- Staircase

• In Autocad



# Examples





width: 32'-0" + PORCH  
GARAGE LEVEL FLOOR PLAN

The background features a large, faint watermark of the Tishk International University logo. The logo is circular with a sunburst border. Inside the circle, the text "TISHK INTERNATIONAL UNIVERSITY" is written along the top arc, and "TIU" is written in large, bold letters in the center. Below the circle, the text "SULAIMANI" is on the left and "2014" is on the right. At the bottom of the logo is a stylized fountain pen nib. The entire background is a solid orange color.

Thank you