

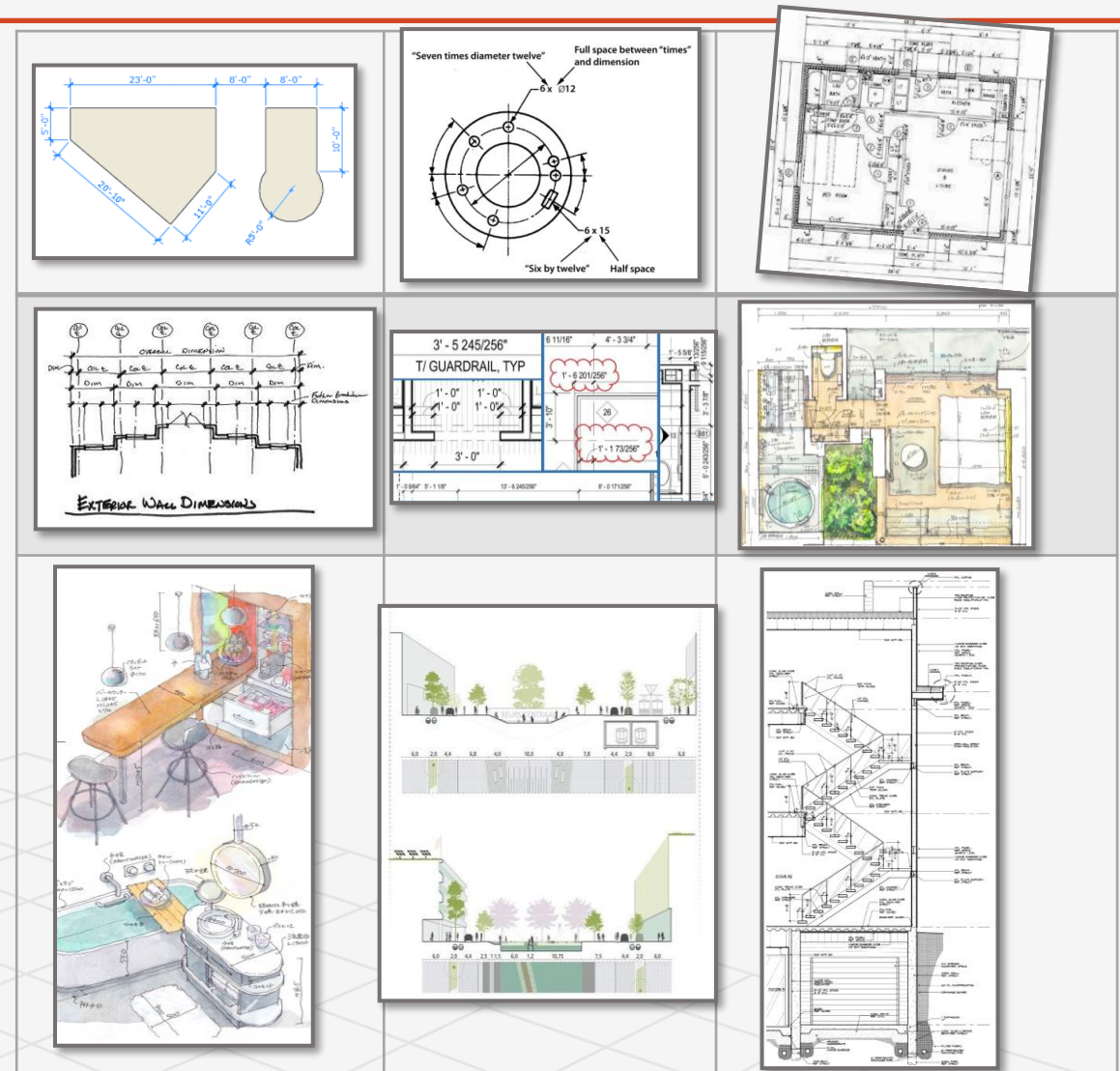
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Department of Urban Technics Management  
Module: WORKSHOP 1  
1st year licence

# DIMONSIONIG IN TECHNICAL DRAWING

ACADEMIC YEAR: 2023/2024

# Dimensioning, why it's important?

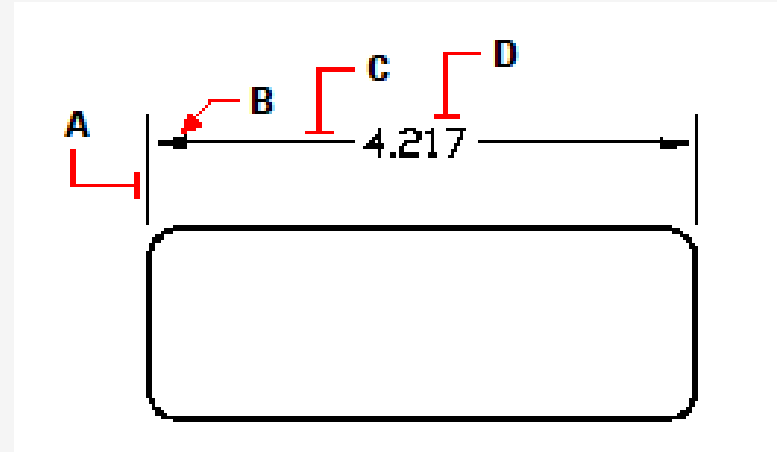
- In technical drawing, **dimensioning** refers to the process of adding measurements and annotations to a drawing to define the size and location of geometric features.
- The purpose of dimensioning is to provide all the necessary information for the production and control of the part represented in the drawing.
- Architectural dimensioning involves specifying the size and location of various elements within a building or on a site.



# The dimensioning components

Each dimension we create consists of several parts.:

- **Extension lines**, These are lines that extend from the object being dimensioned to the dimension line. They provide a clear reference for which feature the dimension is associated with.
- **A dimension line**: shows where a dimension begins and ends.
- **Arrowheads** form the termination at each end of the dimension line.
- **Dimension text** contains the measured dimension and can also include prefixes, suffixes, tolerances, and other optional text.



A ----- Extension line.

C ---- Dimension line.

B -----Arrowhead.

D ----- Dimension text.

Extension line : ligne d'attache خطوط الربط

Dimension line: ligne de cote خط الترقيم

Arrow Head : flèche الأسهم

Dimension text : la mesure (chiffres) الرقم أو الترقيم

# Types of dimensioning:

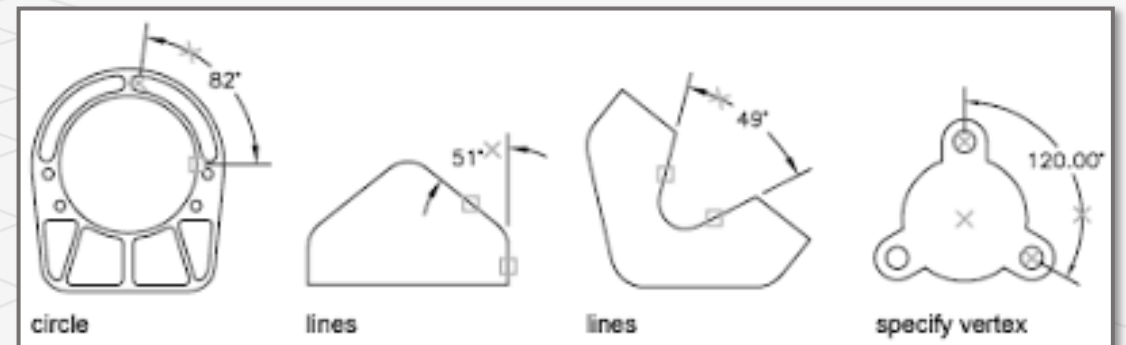
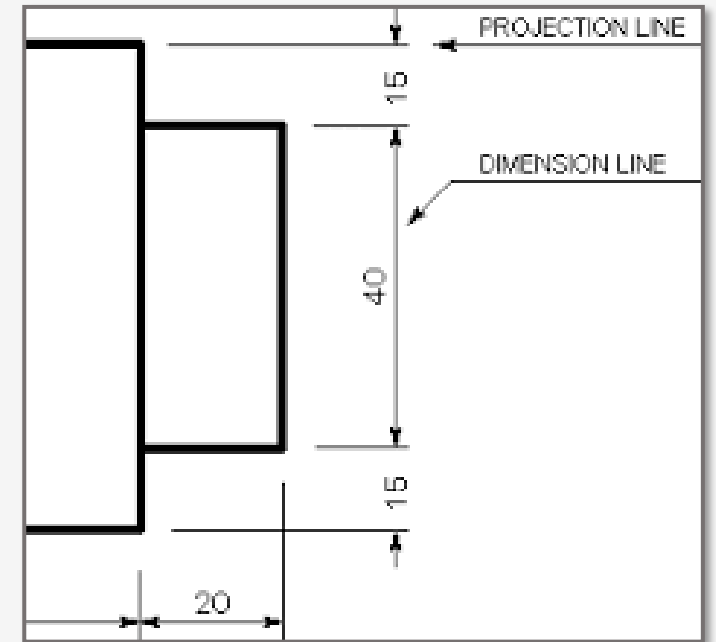
In technical drawings, there are several types of dimensioning techniques used to convey different types of information. Here are some common types of dimensioning:

## 1. Linear Dimensioning:

- **Description:** Used to measure the length of straight features.
- **Representation:** Consists of a dimension line, extension lines, and an arrowhead or other symbol.

## 2. Angular Dimensioning:

- **Description:** Indicates the angle between two lines or features.
- **Representation:** Involves dimension lines, extension lines, an arc or angle symbol, and the angle value.



# Types of dimensioning:

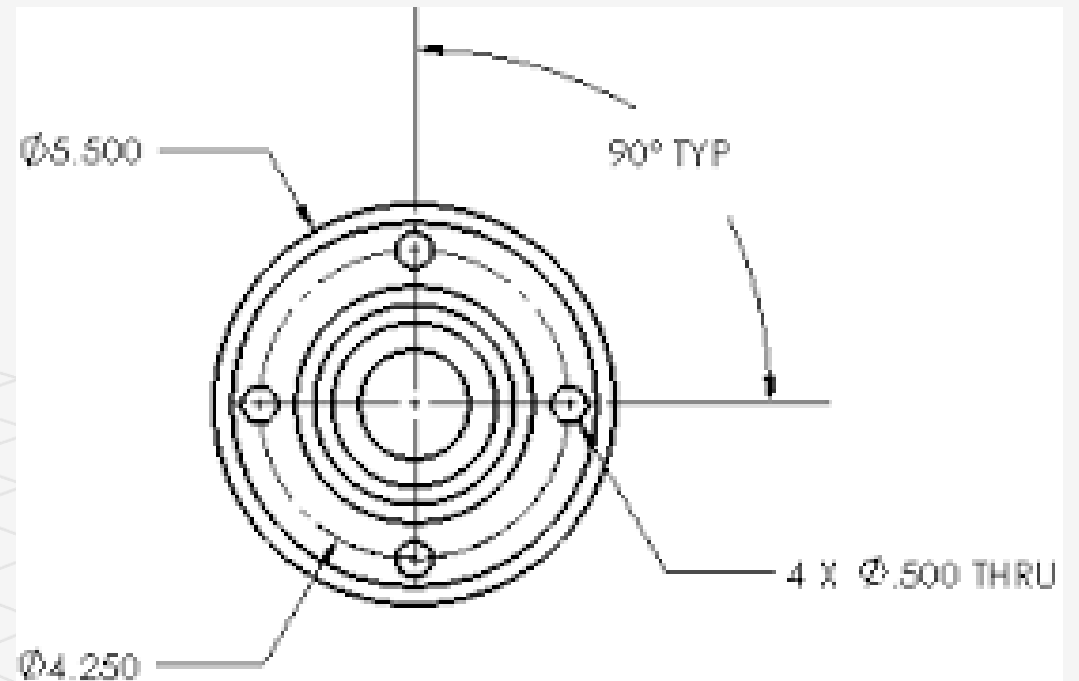
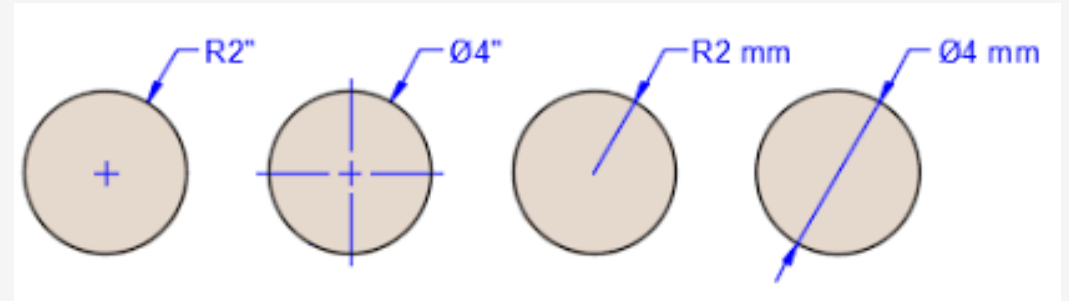
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## 3.Radial Dimensioning:

- Description:** Measures the radius of a circular feature.
- Representation:** Uses a dimension line originating from the center of the circle, with arrowheads or other symbols.

## 4.Diametrical Dimensioning:

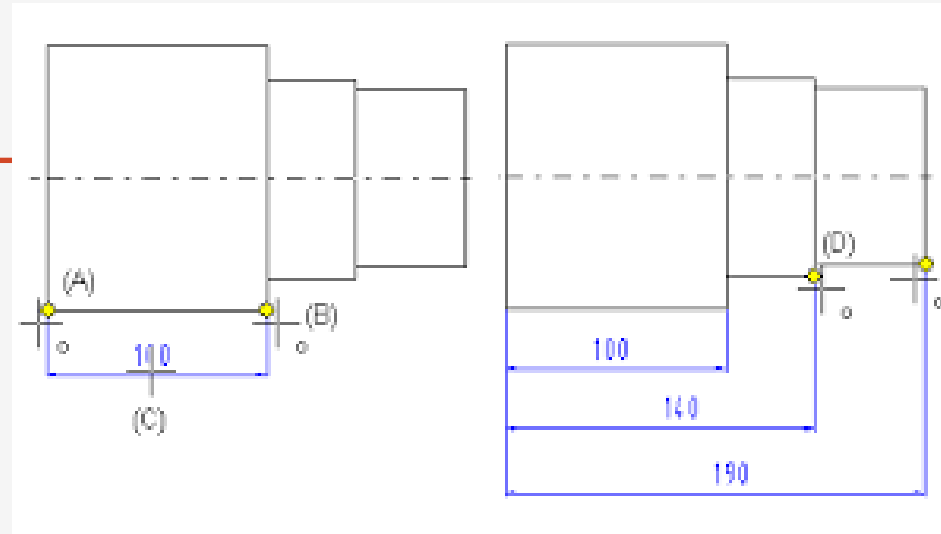
- Description:** Measures the diameter of a circular feature.
- Representation:** Employs two opposing arrowheads on either side of the circle, connected by a dimension line.



# Types of dimensioning:

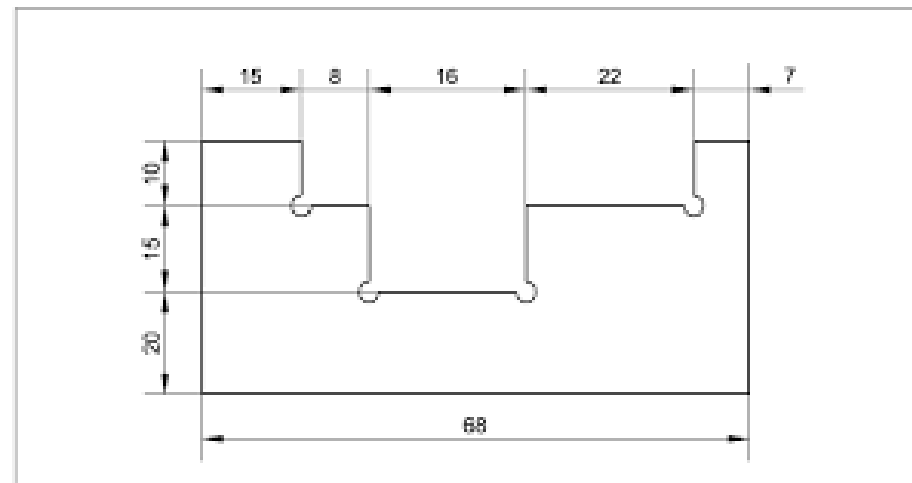
## 5. Baseline Dimensioning:

- **Description:** Dimensions are measured from a common baseline, often used when features are not aligned.
- **Representation:** Involves a series of dimension lines originating from a single baseline.



## 6. Chain Dimensioning:

- **Description:** Dimensions are connected in a chain-like fashion, useful for detailing a series of features with consistent spacing.
- **Representation:** Involves dimension lines that link sequentially from one feature to the next.



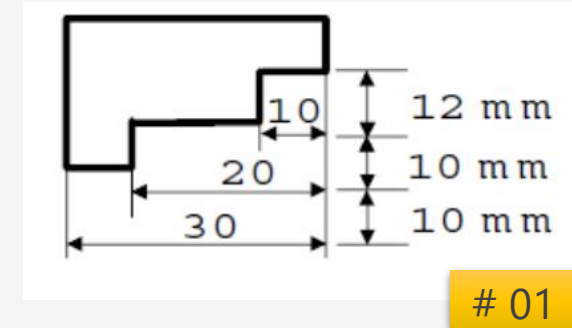
These dimensioning techniques are employed based on the specific requirements of the drawing and the nature of the features being dimensioned. The goal is to provide clear and accurate information for the manufacturing or construction of the object.

# SOME RULES!

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## #Rule 01:

Dimension lines are to be drawn maintaining a gap of 12 mm from the object line and a gap of 10 mm between adjacent dimension lines.

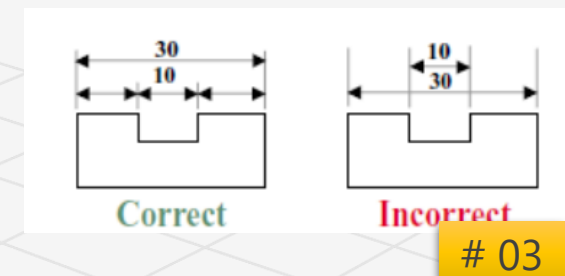
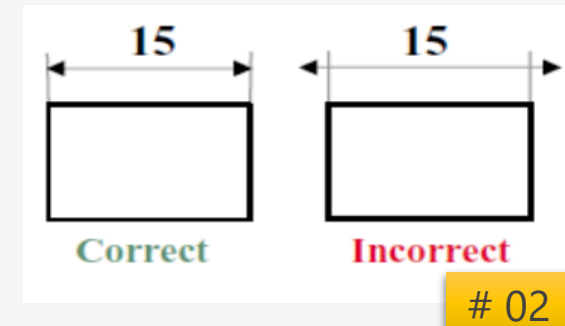


## #Rule 02:

Dimension lines should not cross extension lines.

## #Rule 03:

The overall dimensions should be placed outside the smaller dimensions.



# SOME RULES!

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## #Rule 04:

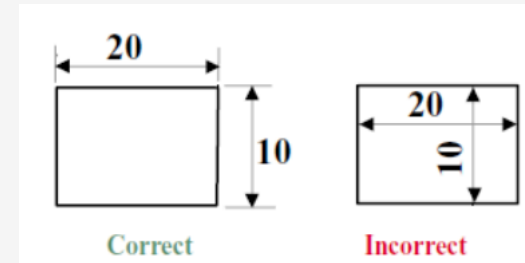
Avoid indicating dimensions inside a drawing.

## #Rule 05:

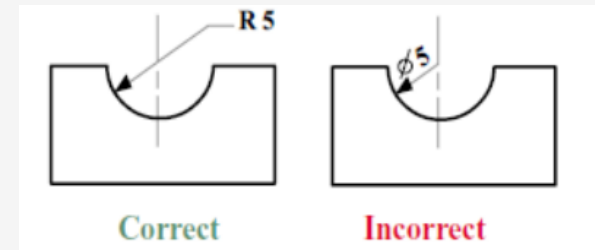
The radius of an arc should always be indicated with the abbreviation R placed before the dimension.

## #Rule 06:

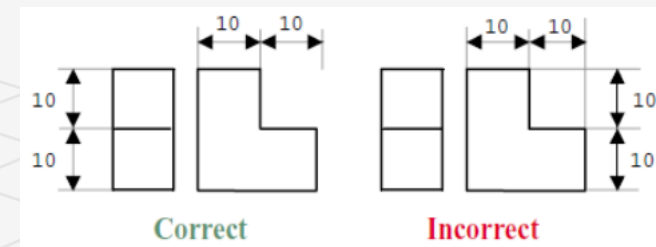
Extension lines should not cross each other or dimension lines unless this can be done without making the drawing more complicated.



# 04



# 05



# 06



# SOME RULES!

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## #Rule 07:

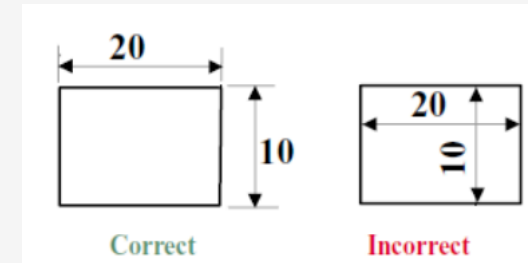
Avoid dimensioning of hidden lines if possible.

## #Rule 08:

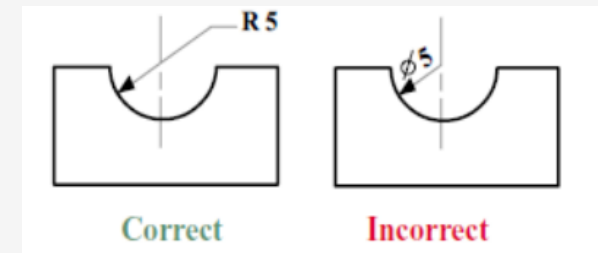
Always show the angles outside the space representing an object.

## #Rule 09:

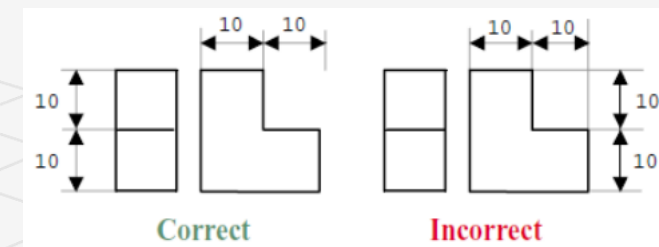
The center line should never be used as a dimension line.



# 04



# 05



# 06

# SOME RULES!

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## #Rule 10:

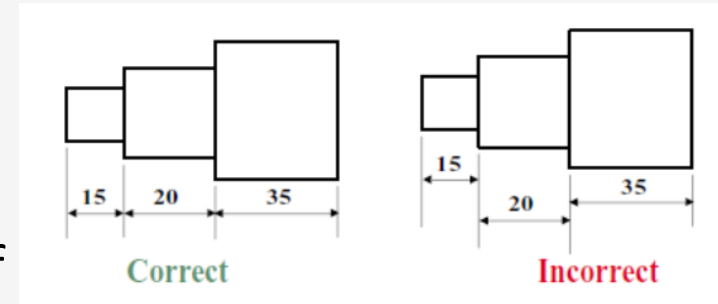
When a number of dimensions are indicated on one side of a drawing, they should appear on a continuous line.

## #Rule 11:

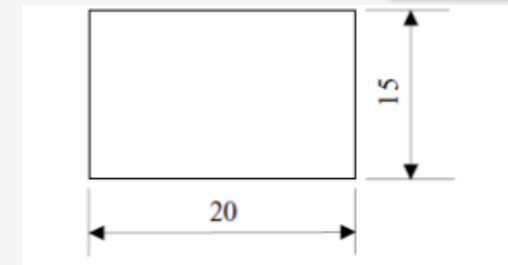
In the aligned system, the dimensions must be readable when the drawing is viewed in its normal upright position or from its right-hand side.

## #Rule 12:

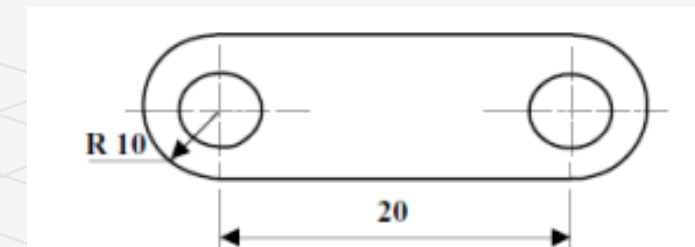
In a drawing of a part with circular ends, the center-to-center dimension is given instead of an overall dimension



# 10



# 11

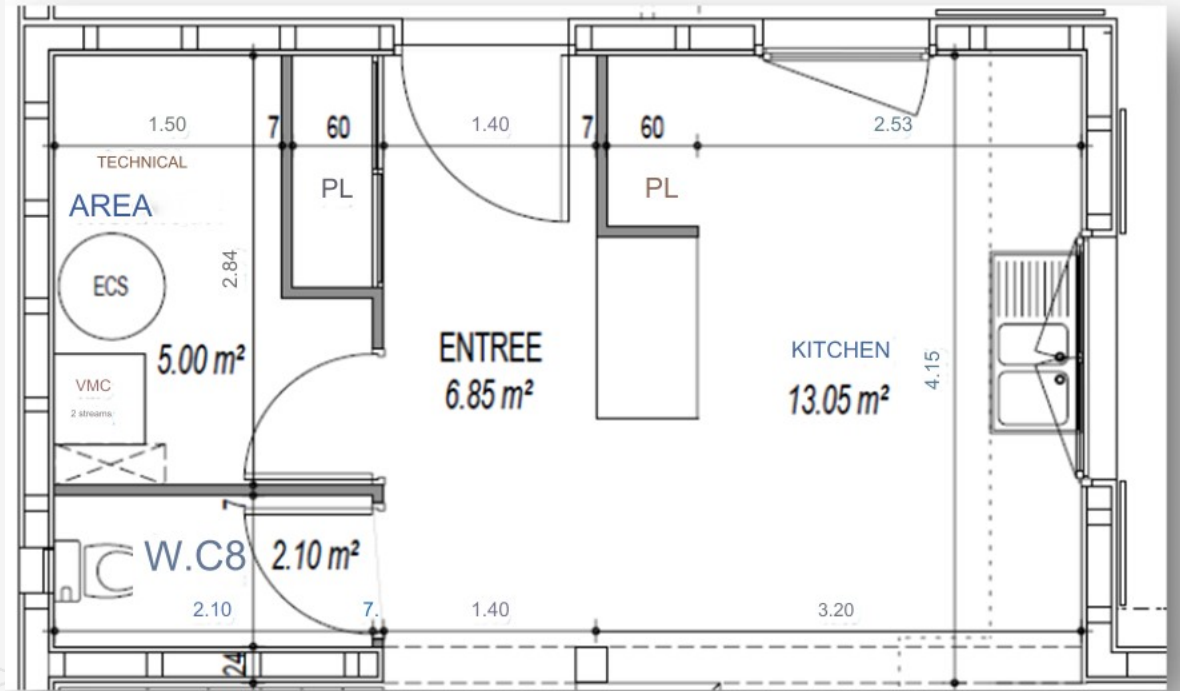


# 12

# Position of dimensions

Dimensions defining interior elements of the building will be placed inside the drawing and dimensions defining elements placed on exterior walls will be placed outside the drawing.

- **Internal dimensioning:** Are indicated:
  - the total thicknesses of the exterior walls, partitions and distribution partitions,
  - the dimensions of the doors and passages,
  - the dimensions of each room and the cupboards,
  - and possibly the installation dimensions of the sanitary appliances (sink axis For example).



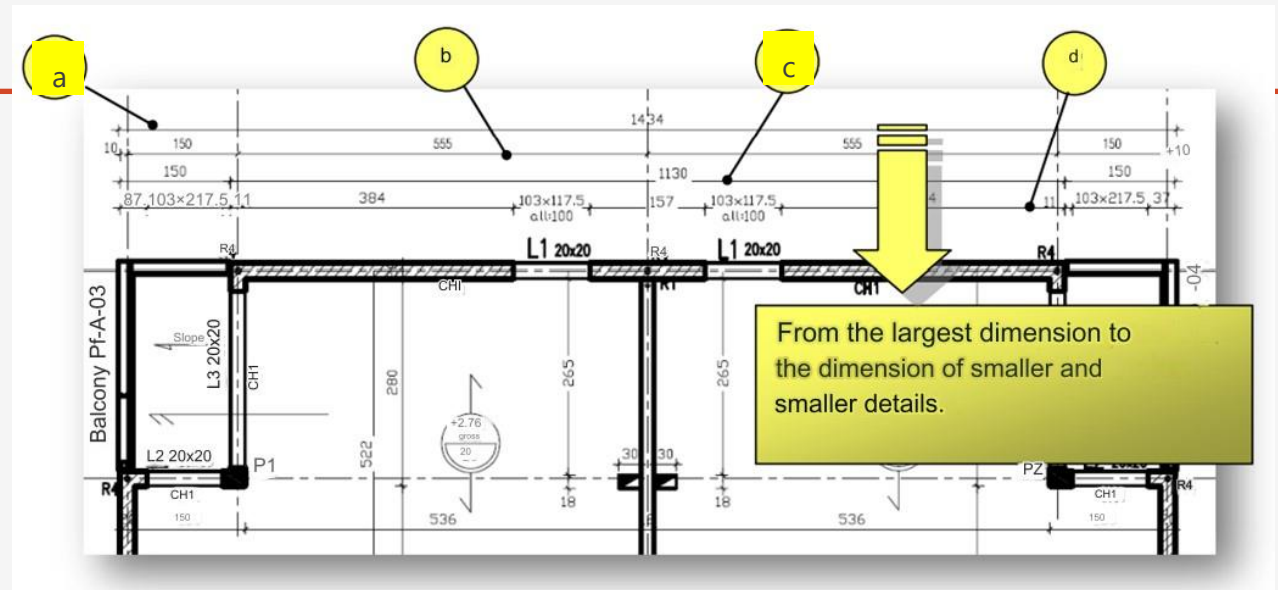
Ground floor plan

# Position of dimensions

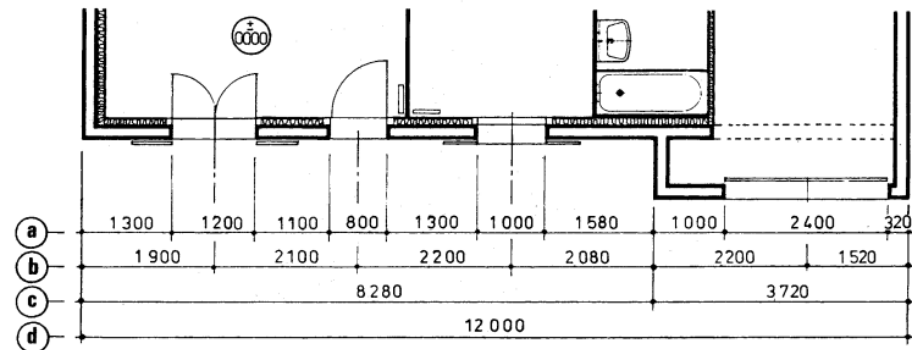
## External dimensioning:

4 dimension lines are placed in the following order:

- 1<sup>st</sup> line (marker a): Total rating of the facade or building.
- 2<sup>nd</sup> line (marker b): Rating of the main parts of the building.
- 3<sup>rd</sup> line (marker c): Axis to axis dimension of the bays.
- 4<sup>th</sup> line (marker d) closest: Rating of piers and openings..



- **Cotation extérieure** : 4 lignes de cotes sont placées dans l'ordre suivant :
  - 1<sup>ère</sup> ligne (repère a) : Cotation des trumeaux et des baies,
  - 2<sup>ème</sup> ligne (repère b) : Cotation d'axe en axe des baies,
  - 3<sup>ème</sup> ligne (repère c) : Cotation des parties principales du bâtiment,
  - 4<sup>ème</sup> ligne (repère d) : Cotation totale.



# Position of dimensions

- Rating of levels:**

The finished upper level of a floor is marked in a thin line circle and is expressed in meters followed by three decimal places

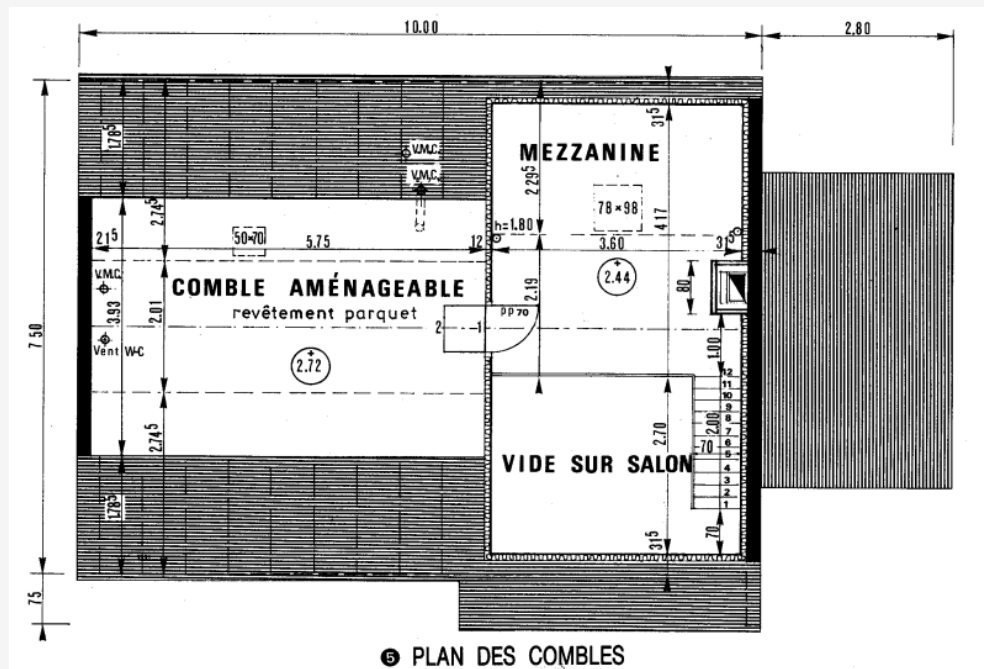
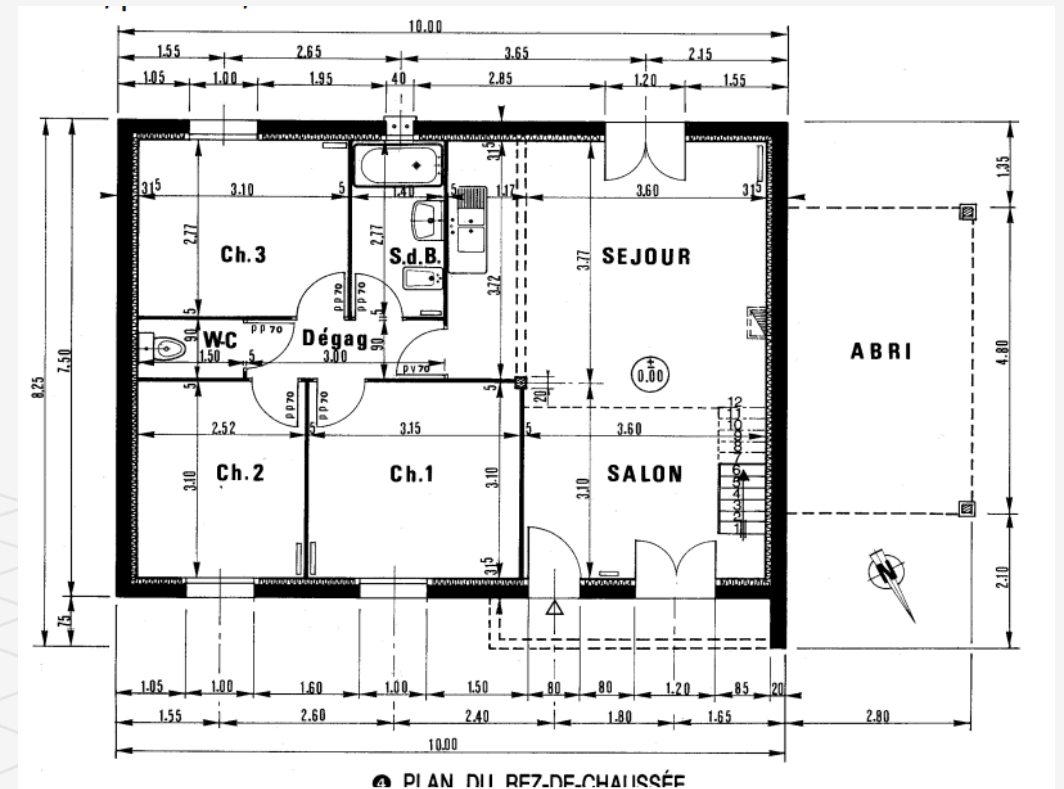


Figure 4 : PLAN DES COMBLES



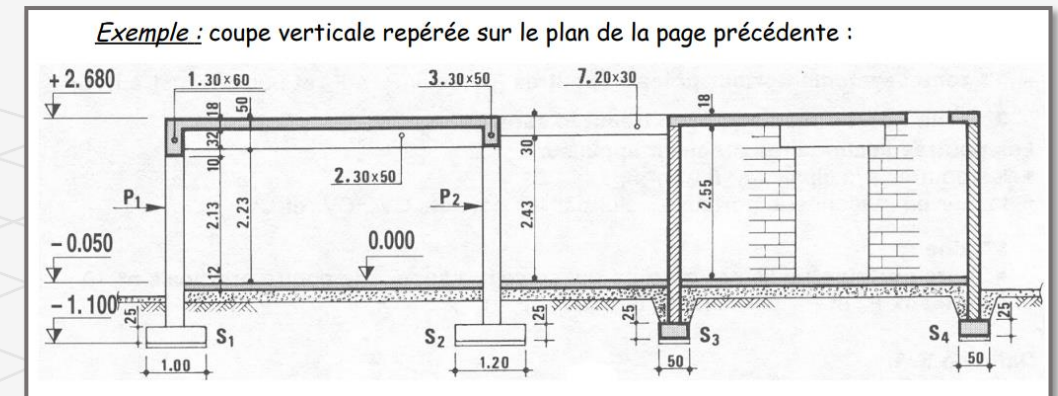
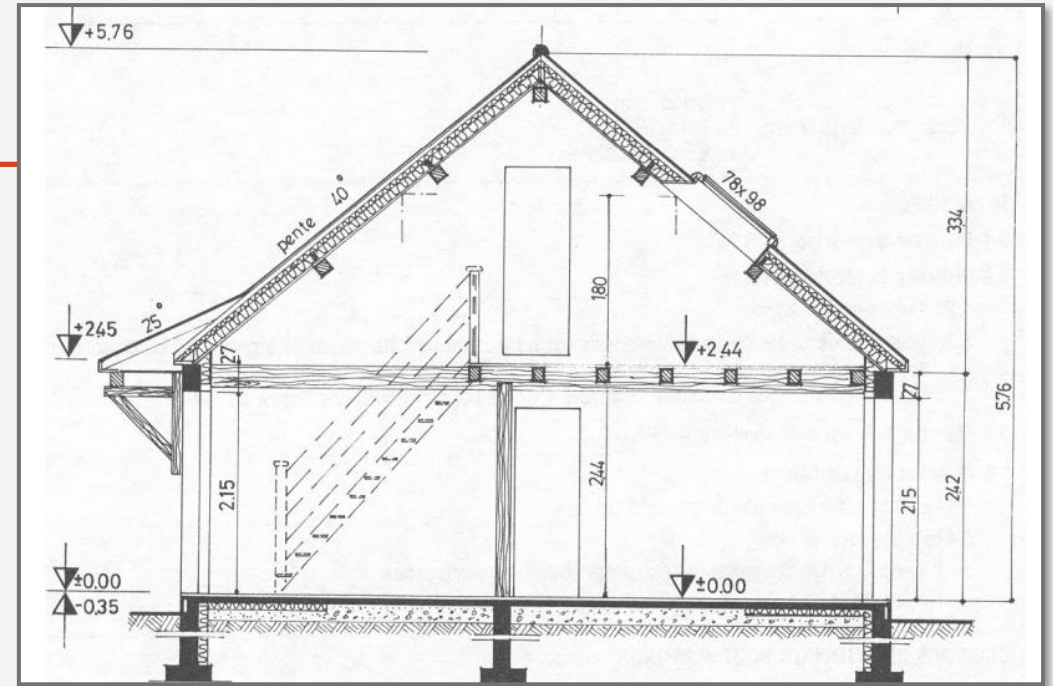
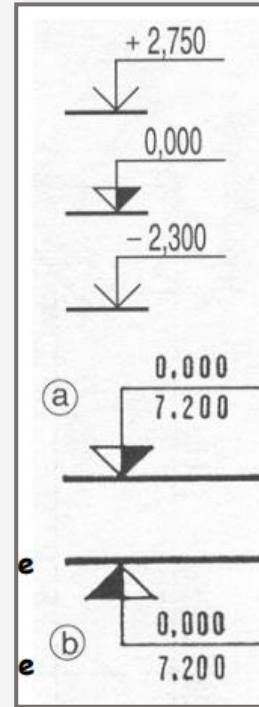
• Internal dimensioning: there are 3 dimension lines;  
**Partial dimension** lines in the case of a window/door.

**Indication** of finished floor thickness.  
Dimension line (possible) from **finished floor to finished floor for the floors**.

Indication of levels Level dimensions define the altitude of certain parts of the construction in relation to a single origin, called reference level or original level.

This reference level most often corresponds to the level of the finished ground floor.

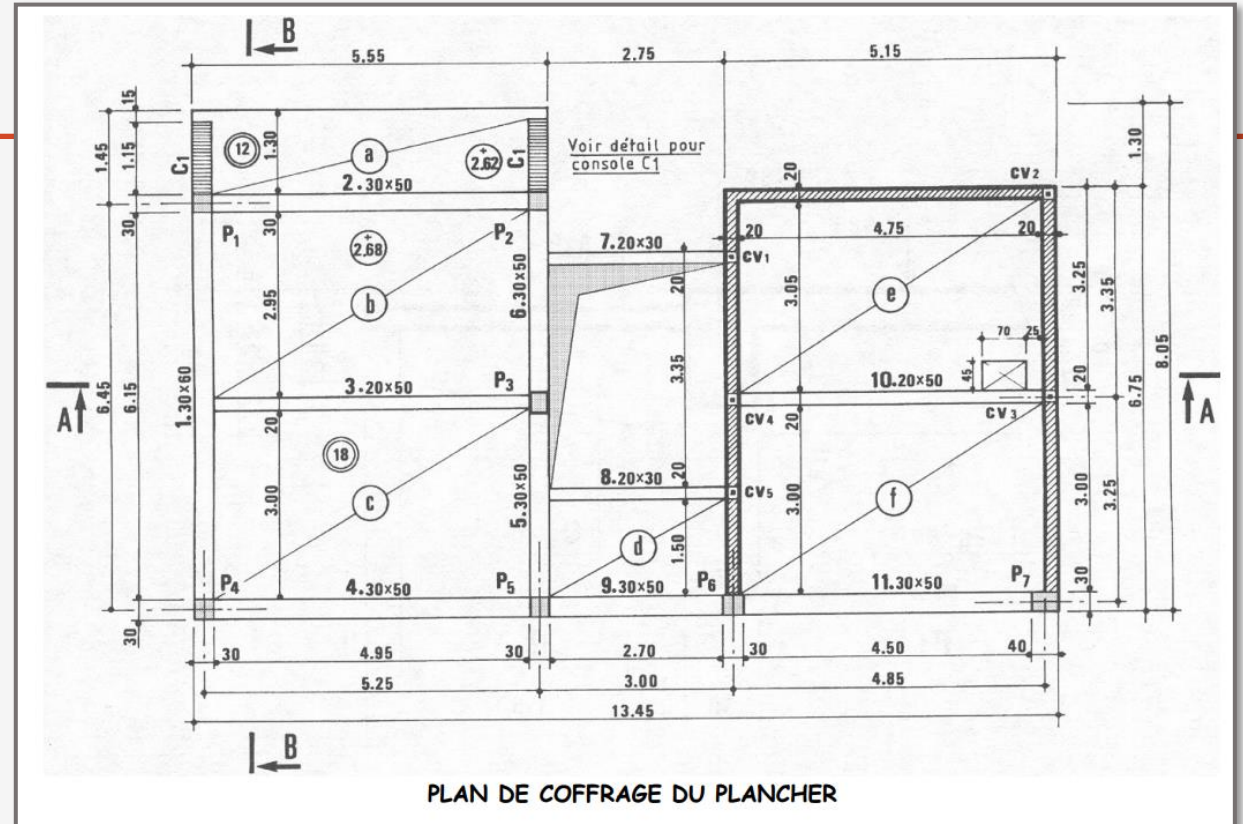
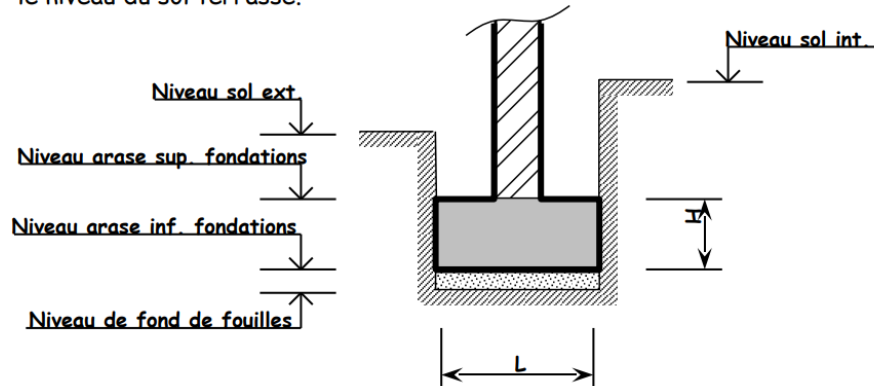
The levels are assigned a + sign if they are located above the reference level and a - sign if they are located below the reference level.



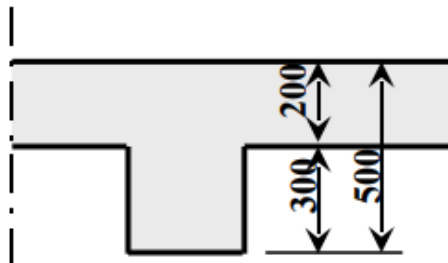
## 2°/Cotation des coupes verticales

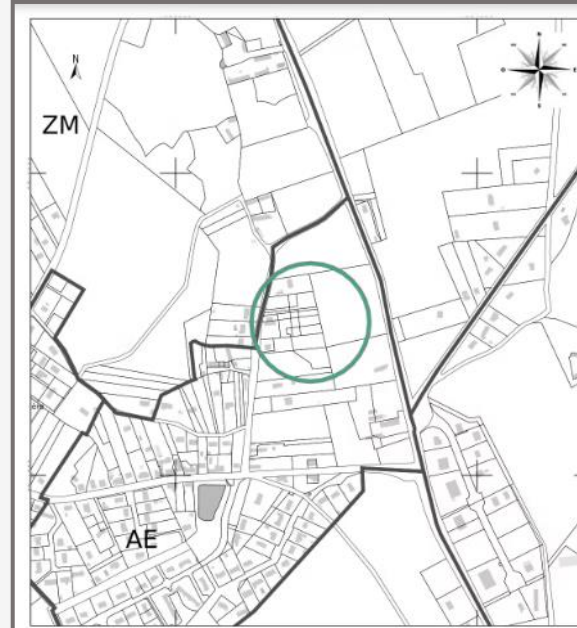
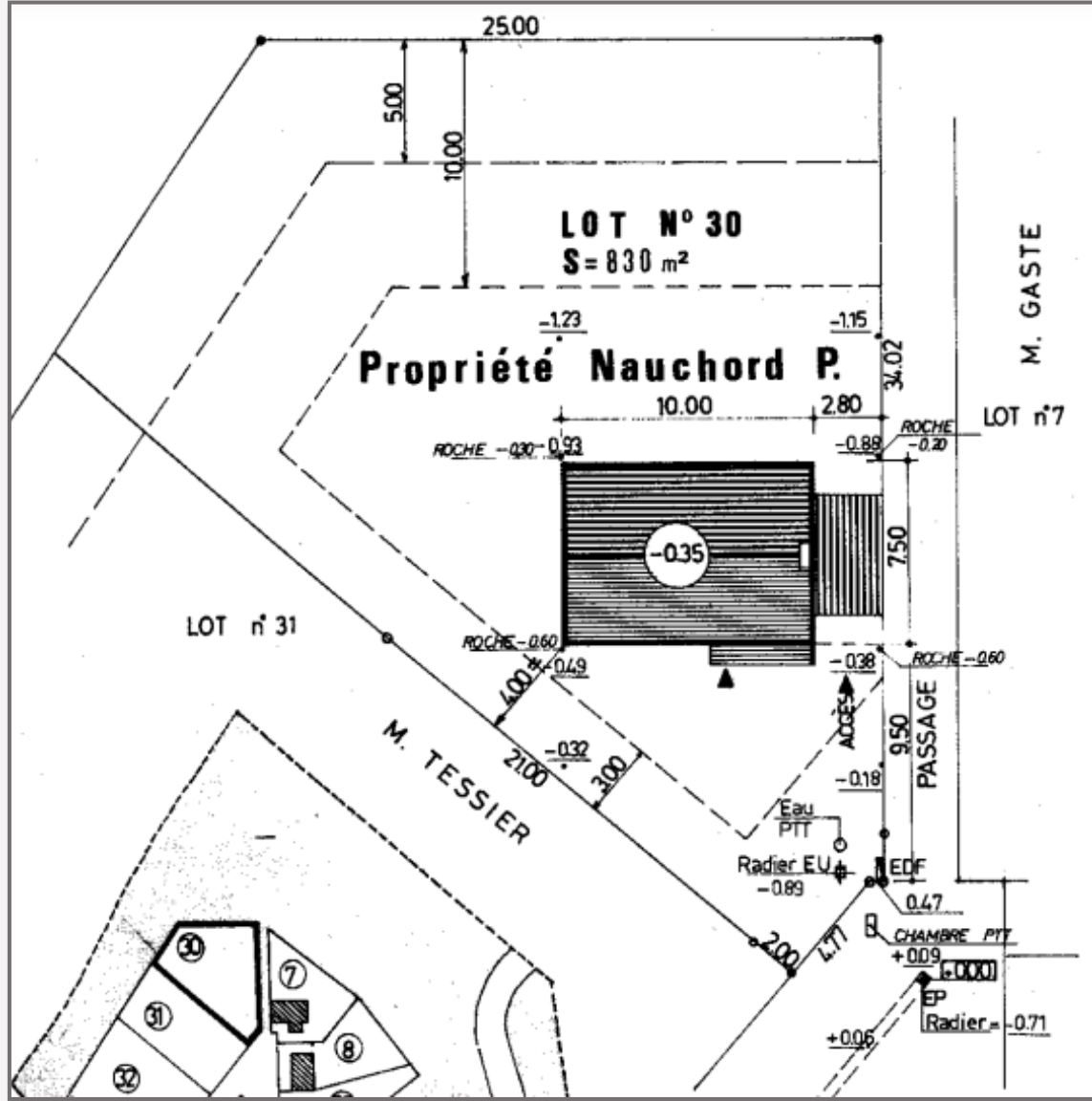
Sur les coupes figurent :

- Le niveau de fond de fouille,
- la section de la fondation (sa hauteur si la largeur est cotée sur le plan),
- les niveaux inférieur et supérieur des semelles.
- le niveau du sol terrassé.

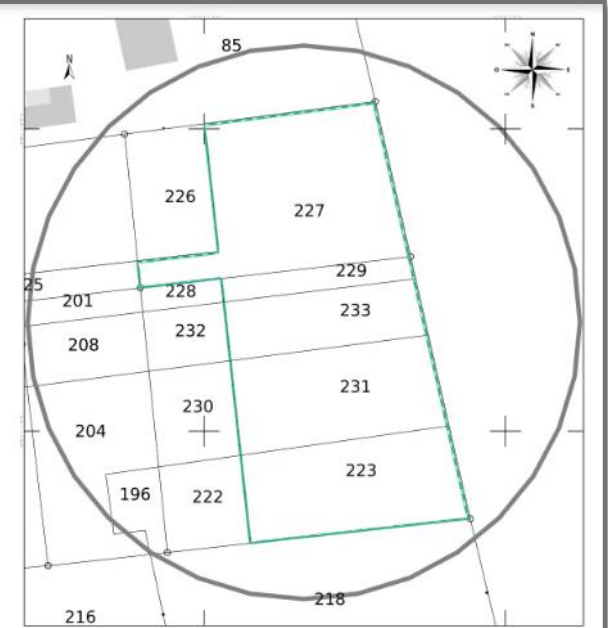


Remarque 1 : la hauteur de la poutre comprend la hauteur de la retombée + la partie de la poutre située dans la dalle





Plan de situation au 1/5000<sup>ème</sup>



Plan de situation au 1/500<sup>ème</sup>



