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SUBJECT & CODE : SITE SURVEYING AND ANALYSIS(21ENG27).

SITE SURVEYING & ANALYSIS.

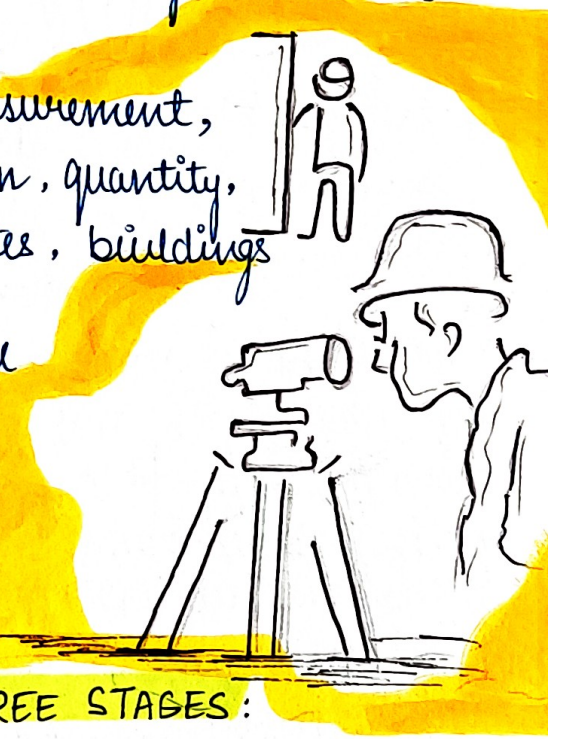
MODULE-1

- **INTRODUCTION,**

i) A site survey is detailed inspection and analysis of a specific location gathering critical information about its physical features, dimensions, boundaries and existing conditions.

ii) Surveying is also defined as taking a general view of, by observation, measurement, determing the boundaries, sizes, position, quantity, the condition, value etc. of land, estates, buildings farms, and mines etc.

iii) Another school of thought defines the surveying as the act of making the, measurements of the relative position of natural and manmade features on earth surfaces.



- **THE PROCESS OF SURVEYING IS MAINLY IN THREE STAGES:**

1) Taking a general review → This part of the defination is important as it indicateds the need to obtain an overall picture of what is required before any type of survey work is undertaken In land surveying, this is achieved during the reconnaissance study.

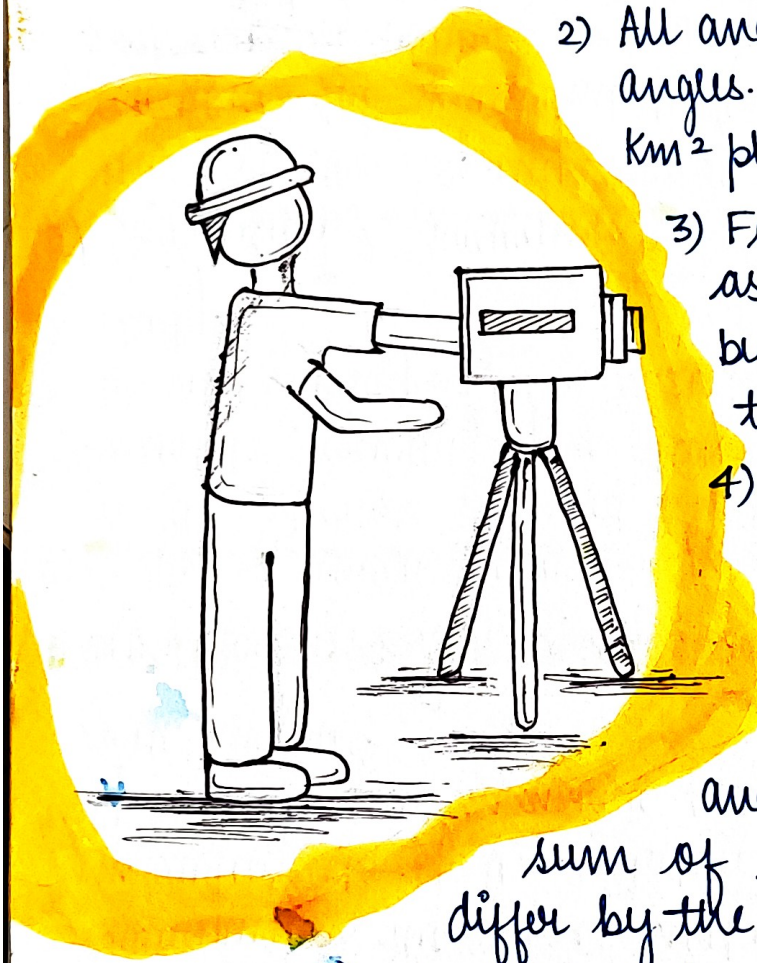
2) Observation & Measurements → This part of the defination denotes the next stage of any survey, which in land surveying are in constitutes the measurements to determine the relative position and sizes of natural and artificial features on land.

3) Presentation of Data → The data collected in any survey must be presented in a form which allows the information to be clearly interpreted and understood by others.

TYPES OF SURVEYING,

1) Plane surveying →

1) Plane surveying is a method where the Earth's surface is treated as a flat plane for surveying purposes, suitable for small areas where Earth's curvature is negligible.



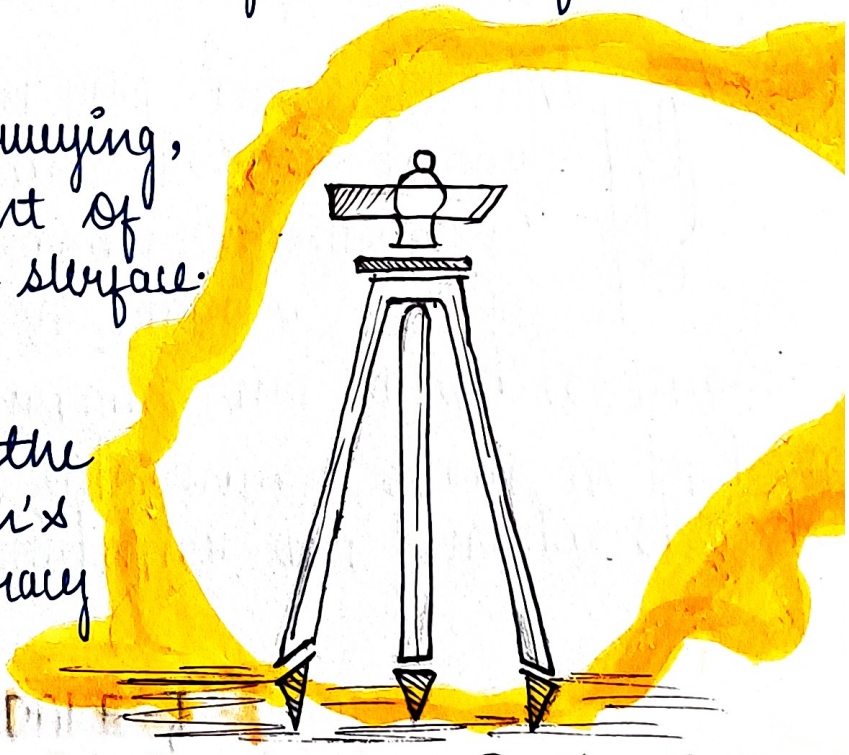
2) All angles are considered as a plane angles. For small areas less than 250 km^2 plane surveying can safely be used.

3) For most engineerings projects such as canal, railways, highway, buildings, pipelines, etc constructions this type of surveying is used.

4) It is worth noting that the all difference between an arc distance of 18.5 km and the subtended chord lying in the earth surface is 17 mm. Also the sum of the all angles of plane triangle and the sum of angles in the spherical triangle differ by the 1 seconds for a triangle on the earth's surface having an area of 196 km^2.

2) Geodetic surveying →

1) It is the branch of surveying, which takes into account of true shape of the earth surface. (Spheroid)

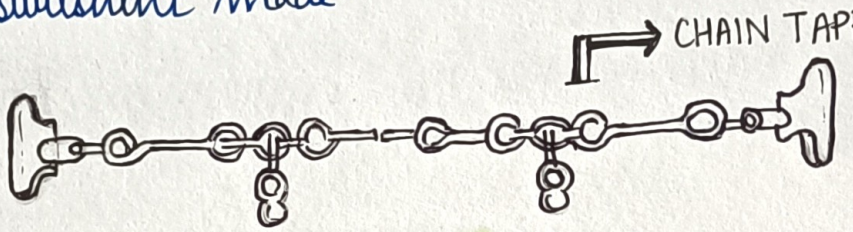


2) This method measures the large areas of the earth's surface with high accuracy and precision.

o CLASSIFICATION BASED ON INSTRUMENTS USED,

1. Chain / Tape survey
2. Compass survey
3. Plane table survey
4. Theodolite survey

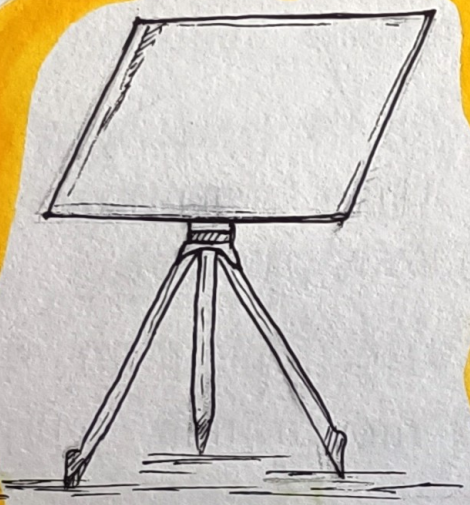
1) Chain / Tape survey → This is the simple method of taking the linear measurement using a chain or tape with no angular measurement made.

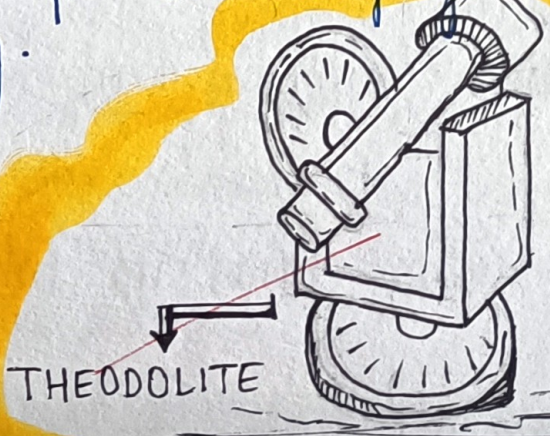


2) Compass survey → Here horizontal angular measurements are made using magnetic compass with the linear measurement made using the chain or tape.

3) Plane table survey → This is a quick survey carried out in the field with the measurements and drawings made at the same time using the plane table.

4) Theodolite Survey → This are use to, the theodolite survey instruments to measure the horizontal and vertical angles for precise surveying and mapping.





° CLASSIFICATION BASED ON THE SURFACES AND THE AREA SURVEYED,

1) Land Survey →

Land surveys are done for object on earth surface. It can be subdivided into :-

a) TOPOGRAPHIC SURVEY :- This is depicting the (hills, valleys, mountains, rivers etc) and manmade features (roads, houses, settlements) on the surface of the earth.

b) CADASTRAL SURVEY :- It is used to determining property of boundaries including those of fields, houses, plots of the house etc.

c) ENGINEERING SURVEY :- Is used to accure the required data for the planning, design and execution of engineering projects like roads, bridges, canals, dams, railways, buildings, etc.

d) CITY SURVEY :- The survey involving the construction and development of towns including rodds, drainage, water supp sewage network etc. are generally reffered to as city surve

2) MARINE OR HYDROGRAPHIC SURVEYS →

i) Those are the surveys of large water bodies for the all navigation, tidal monitoring, the construction of harbours etc.

ii) This are done on the large water bodies like oceans, lake rivers, etc.

3) ASTRONOMICAL SURVEYS →

i) Astronomical surveys uses the observation of the heavenly bodies (sun, moon, stars etc) to fix the absolu locations of places on the surfaces of the earth.

o CLASSIFICATION ON THE BASIS OF PURPOSE

1) ENGINEERING SURVEY

2) CONTROL SURVEY:- Control survey uses geodesic methods to establish widely spaced vertical and horizontal controls points.

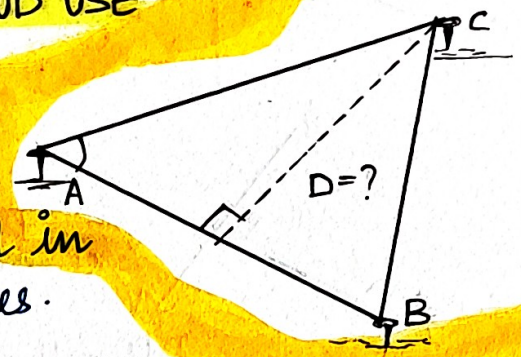
3) GEOLOGICAL SURVEY: Geogical survey is used to determine the all structure and arrange of rock strata. Generally, it enables to know the composition of the earth.

4) MILITARY OR DEFENCE, survey is carried out to map places of military and strategic importance.

5) ARCHEOLOGICAL survey is carried out to discover and map the ancient / relics of antiquity.

o CLASSIFICATIONS BASED ON THE METHOD USE

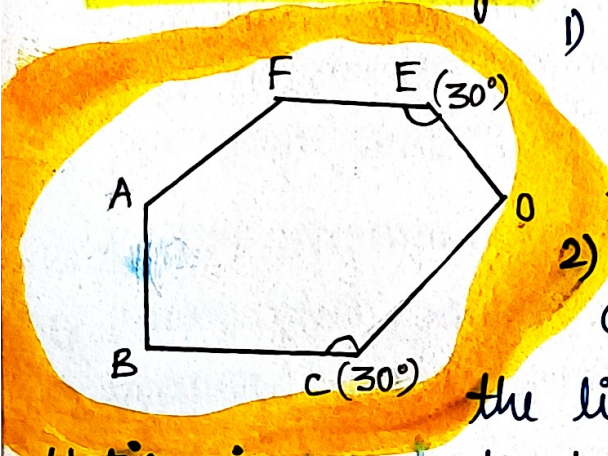
1) Triangulation survey →



i) In order to make the survey, the manageable, the area to be surveyed in first covered with series of triangles.

ii) Lines are first run round and perimeter of the plot, then the details fixed in lines to established. The process is called as the triangulation.

2) Traverse survey →



i) If the bearings and distance of a place of a known point is known. It is possible to establish position.

2) In the process, positions of that point on ground, positions of points linked with the lines linking them emerge. The transverse station is each of the points of the transer, while traverse leg the straight line between consecutive stations.

3) Traverse may either be open or closed.

o BASICS PRINCIPLES OF SURVEYING,

1) Working from the whole to the part.
2) Locating points by measurements from at least two reference.
3) Accuracy and Precision
4) Minimizing Errors.
5) Proper measurements.

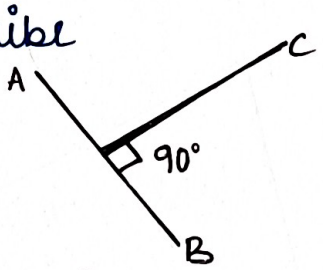
→ The main purpose of surveying from the whole to the part is to localize the errors as working the other way round would magnify the errors and introduce distortions in the survey.

→ This principle, involves covering the area to be surveyed with large triangles.

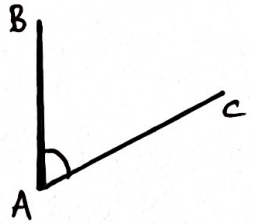
o USING MEASUREMENTS FROM TWO CONTROL PARTS TO FIX OTHER POINTS,

1) Using points A and B as the centres ascribe arcs and fix (where they intersects).
2) Draw a perpendicular from D along AB to point C.
3) To locate C, measures distance AB and use your protactor to measure.
4) To locate C, angle of triangle ABC can be measured.

1)



2)



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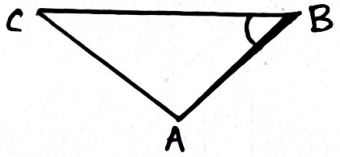


o OBJECTIVES,

1). After studying units, you should identify equipments and the instruments used.
2) Discribe the principles and procedures of chain surveying like fixing and survey station.
3) Explain errors and obstacles in chain surveying and, records the measurements in field book.

∘ INTSRUMENTS,

1) Chains
2) Tapes
3) Arrows
4) Wooden Pegs
5) Plumb Bob
6) Ranging Rods
7) Line Ranger

∘ There are various measure's instruments,

→ Direct measurements :- Chain & Tapes.
→ Optical measurements :- Tachometry, triangulation, telemeter, etc
→ Electronic Devices :- Geodimeter, Distomat, EDM, etc.

→ Operation involves in chain surveying,

a) Marking the stations
b) Ranging
c) Measurement of survey lines
d) Offset measurements.

MODULE - 2

• RANGING,

The process of fixing or establishing intermidiate points to facilitate measurement of the survey lines are called as the Ranging. The intermediate points are located by means of ranging rods, offset rods and ranging poles.

1) Ranging out survey lines.

- While measuring the survey lines, the chain or the tape has to be stretched along the survey line along that joins two terminal stations. When the line to be measurement measured has a smaller length compared to the chain, then the measurement goes smooth. If the length of the line is the greater, the survey line have to be divided by certain and intermidiate points, before conducting the chaining process. This process is called ranging.

The process of ranging can be done by two method,

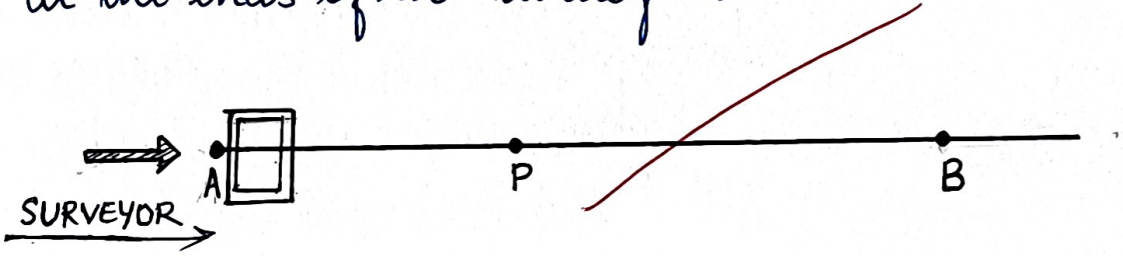
1) Direct Ranging
2) Indirect Ranging

1) DIRECT RANGING

- Direct ranging is ranging conducted when the intermediate points are intervisible. Direct ranging can be performed by eye or with the help of an eye instrument.

Eyes (Ranging by eye).

As shown in fig, A and B are the two intervisible points at the ends of the survey line.



→ The assistant then takes the ranging rods and established at a point in between AB, almost in line with AB. This is fixed at a distance not greater than one chain length from point A. The surveyor can give signals to the assignstant to move transverse till the rod is in line with A and B. In this way other intermidiate points are determined.

Setting out perpendicular offset,

a) Swinging or 3-4-5 method
b) Using cross staff
c) Using optical square or Prism square

ANGLE MEASUREMENT

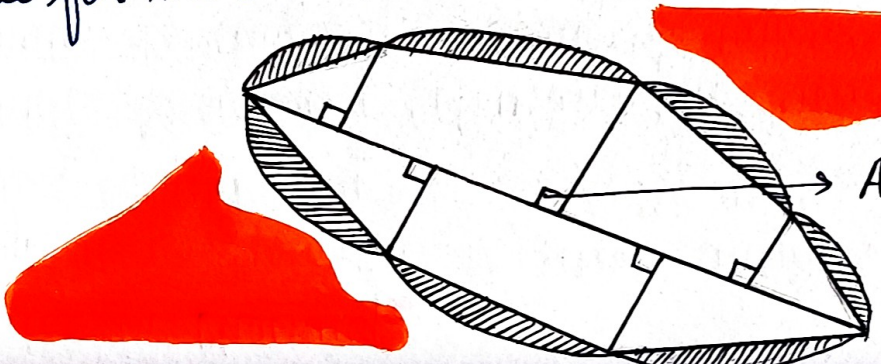
- The Surveyors Compass,

→ The standard surveyors compass is a hand held device which shows the bearing of line relative to magnetic north.

→ A graduated card incorporating a bar magnets rests on a low-friction pivot ; prisms or mirrors and sights are arranged so that the graduations on the card may be read with making a sighting on the distant point.

→ Bearings may read from 0.5° (or 1 part in 120, when the angle is converted to radius)

→ Damping is incorporated, and there is usually a locking device for the card whilst the instrument that not in use.



→ Angles (measures)

• Obstacles in Chaining,

Through it is disirable to select stations are so to avoid obstacles, occastionally the obstacles are;

1) Obstacles to ranging (chaining free - vision obstructed)
2) Obstacles to chaining (Chainig obstructed - vision)
3) Obstacles to both ranging and chaining.

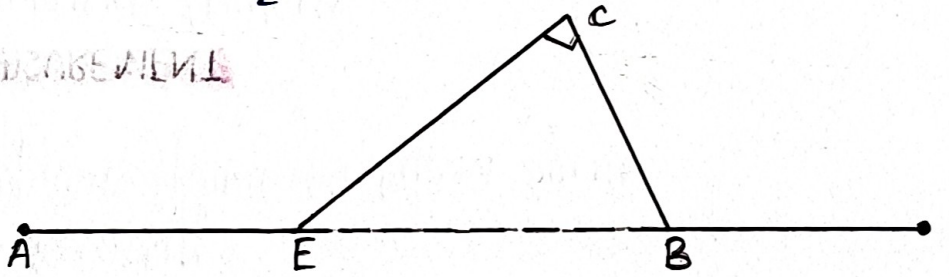
1) Obstacles to Ranging,

These obstacles are further classifed into the categories:

a) Both ends of the line are visible from some intermidiate point, Intervening ground is an example of such obstacles. By reporting to reciprocal ranging this diffcutly can be olercome.

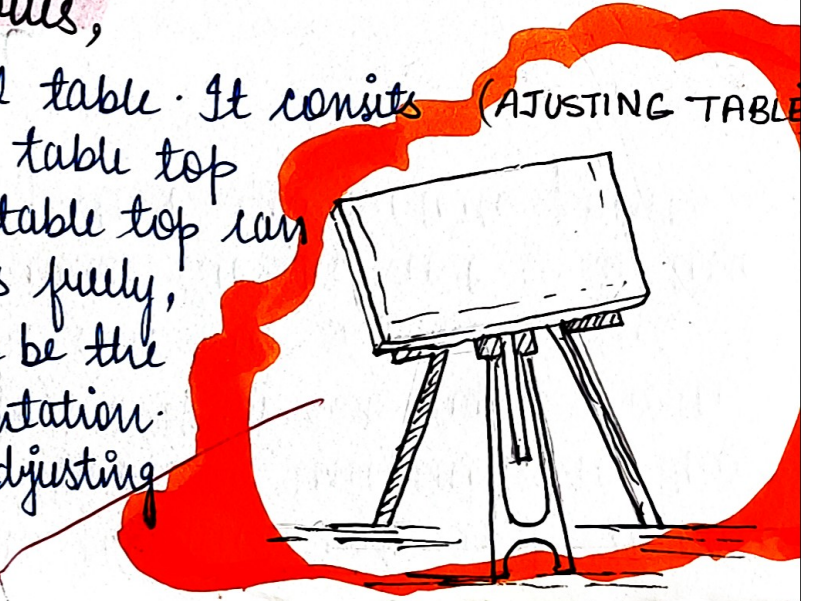
b) Both the ends of the line may not be visible from the intermidiate points on the ground line. But may be visible from a point slightly away from the line.

$$[EB = \sqrt{EC^2 + EB^2}]$$



• Plane table and its Accessories,

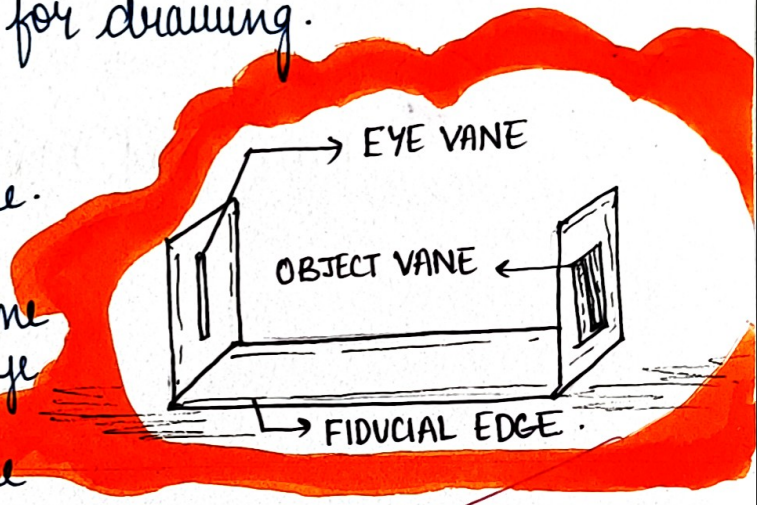
The mostly commonly used table. It consits of a well seasoned wobden table top mounted on a tripod. The table top can rotate about the vertical axis freely, Whenever necessary table can be the clamped in the desired orientation. The table can be levelled by adjusting tripod legs.



The following accessories are required to carry out plane table;

1) Alidade
2) Pluming fork with plumb bob.
3) Spirit level
4) Trough compass
5) Drawing sheets and accessories for drawing.

1) Plane Alidade,



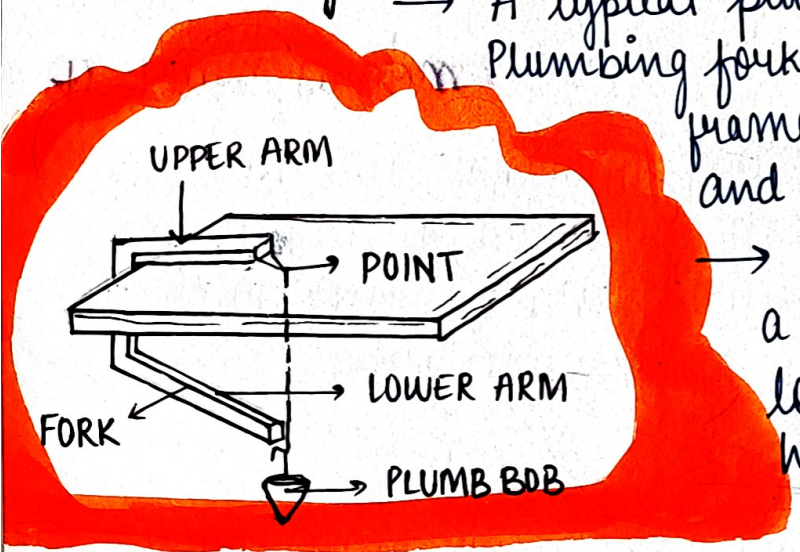
→ Shows a typical plane adidade.

→ A sight vane is provided at each end of the ruler. The vane with narrow slit serves as eye vane and other with wide vane and having a thin wire at its centre serves as object vane.

→ The two vanes are provided with hinges at the ends of the ruler so that when not in use they can be folded on the ruler.

→ Plain alidade is not suitable in surveying hills areas as the inclination of line of sight in this case is limited.

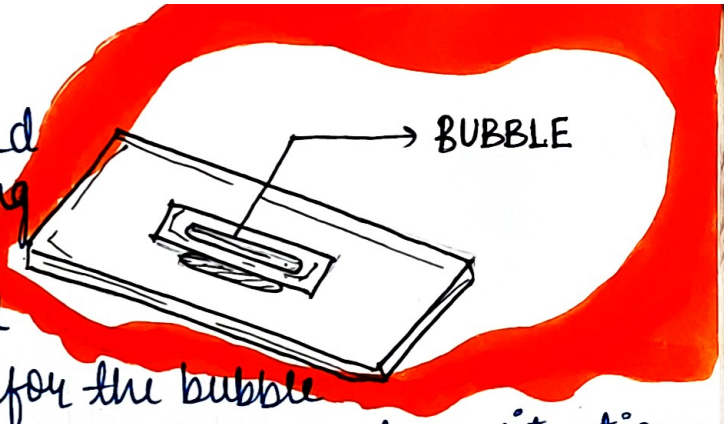
2) Plumbing Fork and Plumb bob,



→ A typical plumbing fork with a plumb bob. Plumbing fork is U-shaped material metal frame with upper horizontal arm and a lower arm.

→ The upper arm is provided with a pointer at the end while the lower arm is provided with a hook to suspend plumb bob.

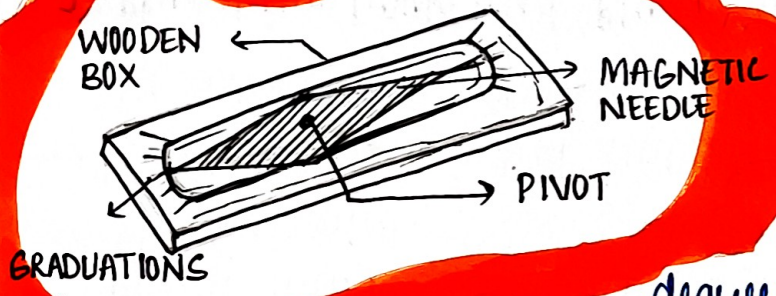
3) Spirit Level,



→ A flat based spirit level is used to level the plane table during surveying.

→ To get perfect level, spirit level should show central position for the bubble tube when checked with its positions in any two situations in any two manually perpendicular direction.

4) Tough Compass,



→ It consits of 80 - 150 mm long and 30 mm wide box carrying freely suspended needle at its centre.

→ At the ends of the needle the graduations are marked on the box to indicate zero to five degrees on either sides of the centre.

Methods of Plane Table,

1) Radiation
2) Intersection
3) Traversing
4) Resecting

Advantages and Limitations of Plane Table Survey,

- Advantages are,

1) Possibilities of omitting measurements is eliminated.
2) The surveyor can compare the plotted work in the field and then there only.
3) Irregular objects are plotted more accurately, since they are seen while plotting.
4) Booking errors are eliminated.

5) Local attractions do not influence the plotting.
6) No general great skills is required to produce satisfactoring maps.
7) Method is fast.
8) No costly instruments are required.

- **Limitations are,**

1) Survey cannot be conducted in wet weather and rainy days.
2) Plane table is cumbersome and heavy to cover.
3) It needs many accessories.
4) It is less accurate.
5) Reproduction of map to different scale is difficult.

MODULE-3

° LEVELLING,

Levelling is a branch of surveying object of which is,

1) To find the elevation of the given points, with respect to a given or assumed datum.
2) To establish the points at a given elevation or at the different, elevations with respect to a given or assumed datum.

The first operation, is required to enable the works to be designed while the second operation is required in the setting out of all kinds of engineering works. Levelling deals with measurements in a vertical plane.

Level Surface,

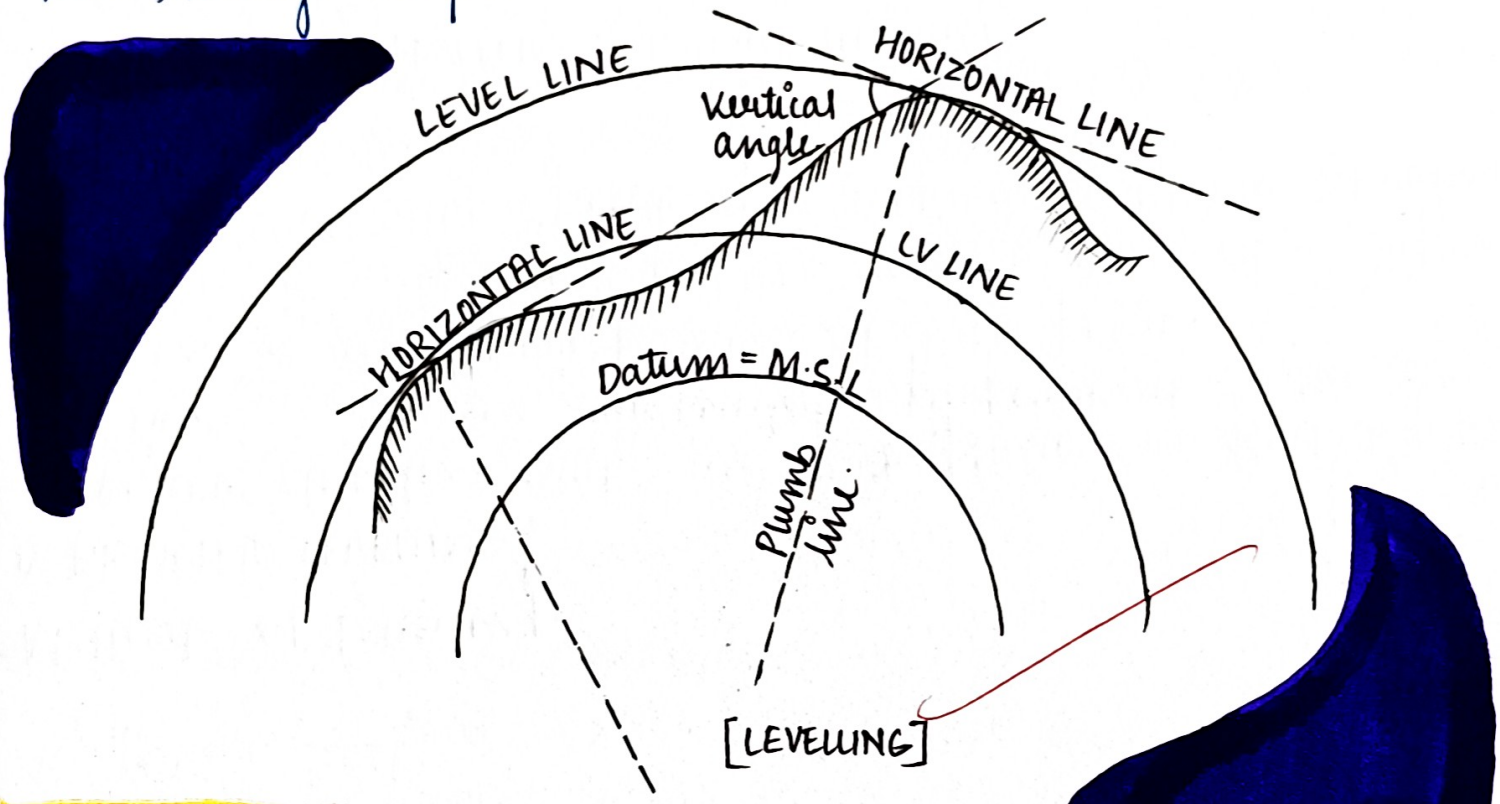
A level surface is well defined as a curved surface which at each point is perpendicular to the direction of gravity at the point. The surface of a still water is a truly surface. Any surface parallel to the mean spheroidal surface of the earth. Therefore; a level surface.

Level line,

A level line is a line lying in a level surface. It is, therefore, normal to the plumb line at all points.

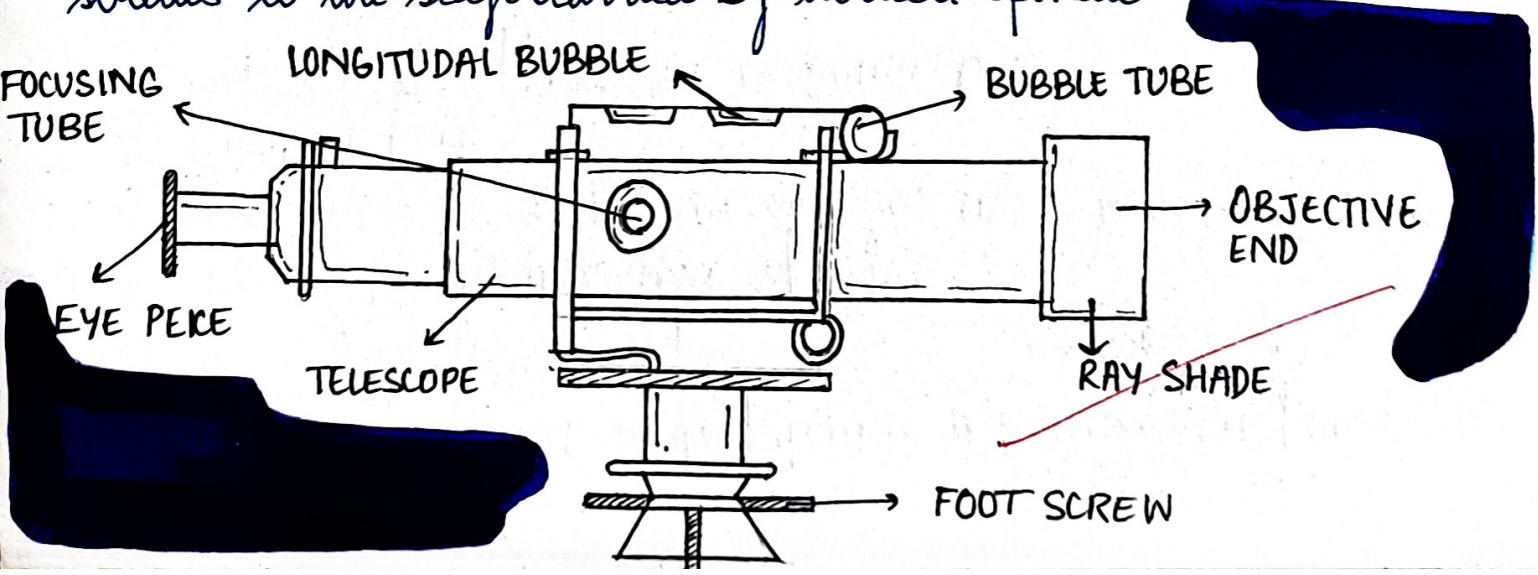
Horizontal Plane,

Horizontal plane through a point is a plane tangential to the level surface at the point. Therefore, perpendicular to the plumb line through the point.



DUMPY LEVEL,

The dumpy level originally designed by Gravatt, consits of a telescope tube firmly secured in two collars fixed by applying screws to the stage carried by vertical spindle.



Levelling Instruments,

- The purpose of a level is to provide a horizontal plane, a level consists of following parts;

1) A telescope to provide line of sight.
2) A level tube to make the line of sight horizontal.
3) A levelling head
4) A tripod to support the instruments.

- There are following chief types of levels:

1) Dumpy level
2) Wye (or Y) level
3) Reversible level
4) Tilting level.

Methods of Levelling,

1) BIOMETRIC LEVELLING,

→ Biometric levelling make use of the phenomena that difference in elevation between two points is proportional to the all difference in atmospheric pressures at these point.

→ A biometric may be used and the readings observed at different points would yield a point upon measures of relative elevations of those points.

2) TRIGNOMETRIC LEVELLING, (Indirect Levelling)

→ Trignometric or indirect levelling is a process of levelling in which the elevations of points are computed from the vertical angles and horizontal distances measured.

→ In modified form is called stadia levelling, commonly used in mapping, both directions.
Between the points are directly computed from the manned.

3) SPIRIT LEVELLING, (Direct Levelling)

→ It is the branch of levelling in which the vertical distance with respect to a horizontal line may be used to determine the relative distance in elevation between two adjacent points.

→ A horizontal plane of sight tangent to level surface at any point is readily established by means of a spirit level or a level vial.

→ This method is also known as Direct levellings. It is the most precise method of determining elevations and the one most commonly used by engineers.

– The advantages of the dumpy level over the Wye level are:

1) Simpler construction with fewer movable parts.
2) Fewer adjustments to be made.
3) Longer life of the adjustments.

I) WYE LEVEL,

→ The essential difference between the dumpy level and the Wye level is that in that former case the telescope is fixed to the spindle while in the Wye level, the telescope is carried in two vertical 'Wye' supports.

→ The Wye consits of curved clips. If the clips are raised, the telescope can be rotated in the Wyes, or removed and turned end to end.

II) SELF-READING STAFF,

→ There are usually three forms of self-reading staff:

a) Solid staff
b) Folding staff
c) Telescope staff (Sopwith pattern)

Folding Levelling staff in Metric Units,

a) The staff may be folded to 2m length.
b) The two pices may be detached from one another, when required, to facilitates easy handlings and manipulation with one pice, and
c) When the two portions are locked together, the two pieces become rigid and straight.

→ A circular bubble, suitable cased of 25-minutes sensitivity is fitted at the back. The staff has fittings for a plummet to test and correct the back bubbles. A brass is screwed on to the bottom brass cap. The staff has two folding handles with spring acting locking device or an ordinary device.

Horizontal lines,

It is straight line tangential to the level line at a point. It is also perpendicular to the plumb line.

Vertical lines,

It is line normal to the level line at a point. It is commonly considered to be the line defined by a plumb line.

Datum,

Datum is any surface to which elevations are referred. The mean sea level affords a convient datum world over, and elevation are commonly given as so much above or below sea level.

Vertical Angle,

Vertical angle is an angle between two intersting lines in a vertical plane. Generally, one of these lines is horizontal.

Mean Sea Level,

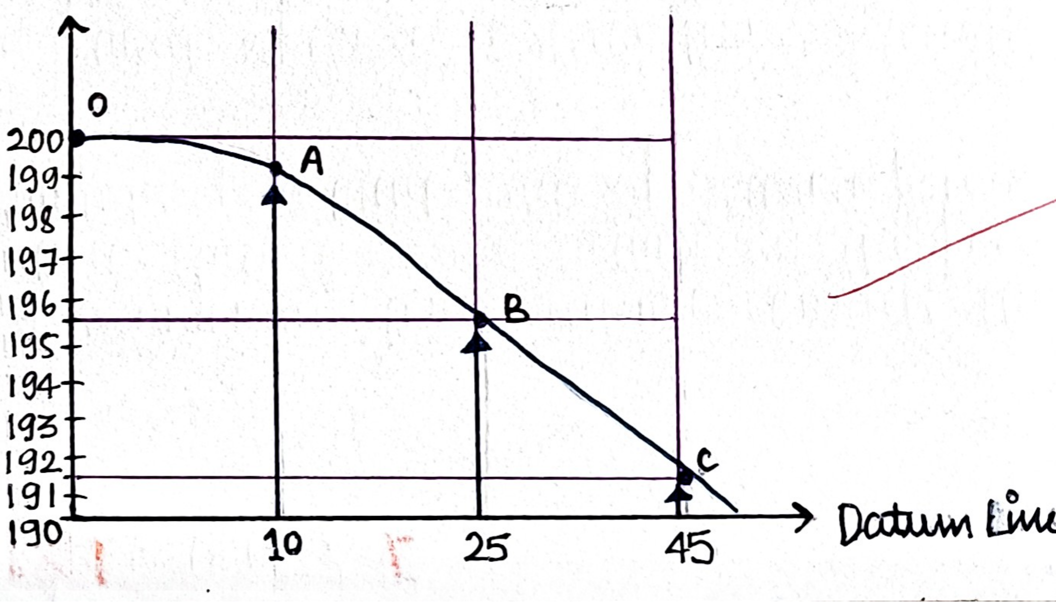
Mean sea level is the average height of the sea level of sea at all stages of the tides. At any particular place it is derived by averaging hours.

PROBLEM - 01

Height of the instrument method → [RL. 200m]

Stn.	Dist.	BS	IS	FS	HI	RL	Remarks.
A	0	0.105			201.105	200m	
	10			1.915		199.19	
B		0.895			198.17	197.275	
	25			2.255		195.915	
C		0.530			194.19	193.66	
	45			2.290		191.9	
		Σ= 2.53m		Σ= 6.43m			

[Horizontal = 0.5cm = 1m
Vertical = 1cm = 5m]



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MODULE-4

• CONTOURS,

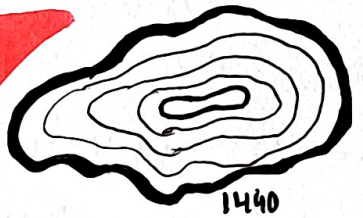
1) A contour line is a imaginary lines which connects the points of equal elevation. Such lines are drawn on the plan of an area after establishing reduced levels of several points in the area.

2) A numerical value placed upon a contour line to denote its elevation relative to a given datum, usually mean sea level is called contour value. The contour lines in an area are drawn keeping difference in elevation of between two consecutive lines constant.

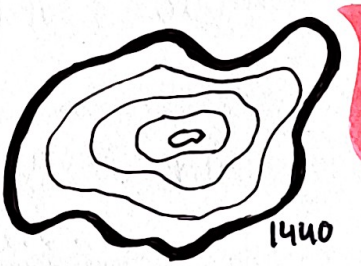
3) Alternatively, a contour or a contour line may be defined as the line of intersection of a level surface with the surface of ground. This means every point on a contour line has the same altitude as that of the assumed intersting surface. The process of tracing contour lines of the earth is called contouring and the map upon which these lines are drawn are called as contour maps.

4) A contour map therefore, gives an idea of the attitudes of the surface features as well as their relative positions in plan.

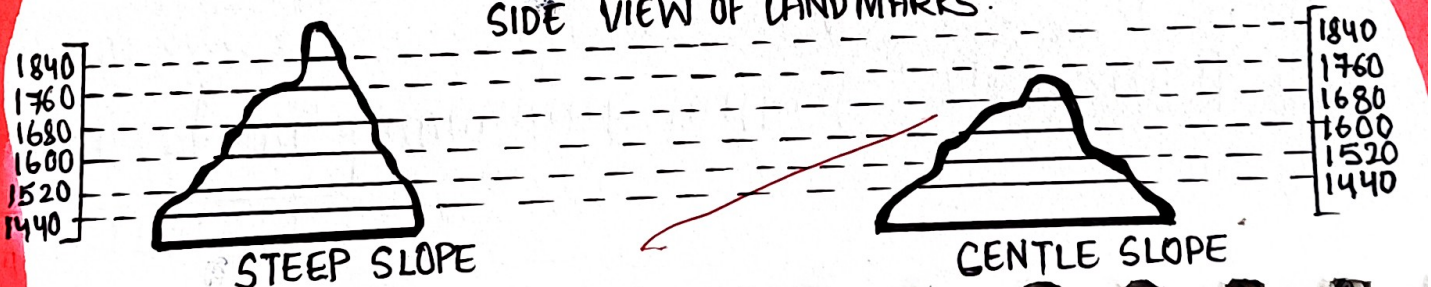
5) Thus a contour map serves the purpose of both, a plan and a section. 2 contour interval and Horizontal Equivalent



WHAT WE SEE ON THE MAP!



SIDE VIEW OF LAND MARKS.



Characteristics of Contours,

1) Contour lines must close, not necessarily in the limits of the plan.
2) Widely spaced contour indicates flat surface.
3) Closely spaced contour indicated steep ground.
4) Equally spaced contour indicates uniform slope.
5) Irregular contours indicates uneven surface.

Methods of Contour:

- There are mainly two methods,

1) DIRECT METHOD,

- This method, the contours to be located are directly traced out in the field by locating and making a number of the points on each contour.
- These points are then surveyed surveyed and plotted on plan and the contours down through them.
- This method is the most accurate but very slow and tedious as a lot of time is wasted in searching points of the same elevation for a contour. This is suitable for the small areas and where great accuracy is required.

2) INDIRECT METHOD,

- This method, the points are located and surveyed are not necessarily on the contours lines but the pot lines (spot level) means the R.L of a point on the surface of the all ground, are taken along the series of line laid out over the area.
- The spot level of the several representatives points are representing hills, depression, ridge and valley lines, and the changes in slope all over the area to be contoured and are also observed.

- Their positions are then plotted on the plan and the all contours drawn by inspiration.
- This method of contouring is also known as the contouring by spot level.

Interpolation of Contours,

- This process of spacing the contours proportionally between the plotted ground points is termed as interpolation of contours. This becames the necessary in the case of indirect contouring as only the spot levels are taken in this method.
- There are three methods of interpolation,

1) By Estimation,

→ The positions of all the contour-points between ground-points are estimated roughly, and the contours were are then drawn through these points. This is a rough method and suitable for small scales map.

2) By Arithmetical,

- This is very accurate methods and is used for small areas where accurate results are, necessary.

3) By Graphical method,

- The graphical method of interpolation are simpler as the compared to arithmetical methods and also the results obtained are accurate.

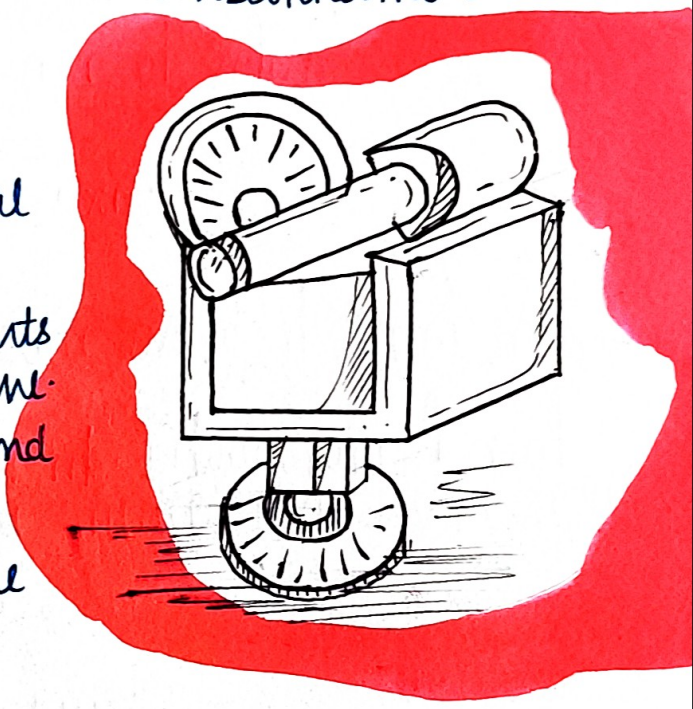
Uses of Contour Maps,

1. The suitable site can be selected for construction activities.
2. Reservoir capacity can be determined.
3. Alignment of roads, canals, transmission lines are done efficiently with the help of contour maps.
4. Nature of good ground surface may be determined.

5. Estimating the quantities of earthwork.
6. The nature of ground i.e. flat, uniformly, sloping and undulting or hilly. etc
7. It is possible to select the most suitable and economical sites for work such as the location for roads, railways canals, pipelines, dams, reservations etc. by using the contour map.
8. Estimating the volume of the reservoir storage water, volume of earthwork in cutting and embankament can be done by contuour maps.

Theodolite,

- A theodolite is a precision optical instrument for measuring angles between the designated visible points in the horizontal and vertical plane. The traditional use for bein for land surveying, but it is also used for building and infrastructure all the construction.



How to use it,

1) First, get acquainted with all parts of the theodelite.
2) Know all follow all the procedures of adjustments and operations.
3) Plan the total work in advance for ease of all activities, minimum operations, and more accuracy in work.
4) Dont overtighten the screws.
5) Read the observations, readings carefully with all the attentions and points in mind.

Adjustments of the Theodolite,

- TEMPORARY ADJUSTMENTS ⟶ To be done by the engineer, users.
- PERMANENT ADJUSTMENTS ⟶ To be done by technician mechanic

1) Temporary Adjustments,

- The temporary adjustments are those which have to be made every time the instruments is set up. Before taking any readings. Temporary adjustments of the theodolite are :-

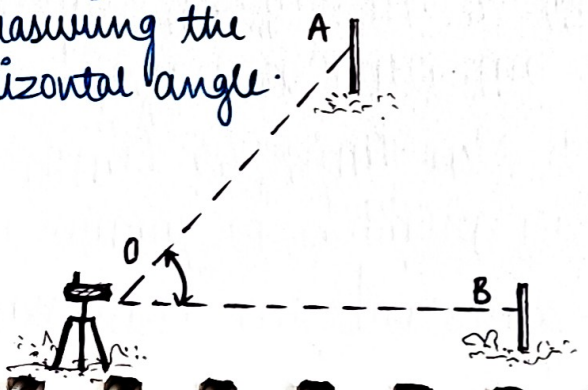
1) Setting up the theodolite
2) Theodolite levelling the instrument.
3) Focusing the eyepiele and object glass.

2) Permanent Adjustments,

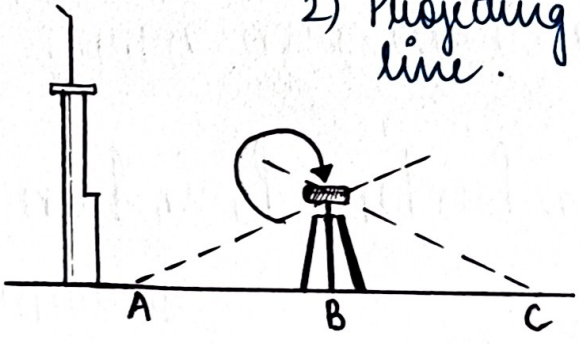
1) Permanent Adjustments are those which have to be done every time the instrument is set up. Before taking any readings.
2) When the permanent adjustments are made up, they remain for a long period.
3) Permanent adjaments are vertical axis.
4) The axis on the plane level.
5) The line of collimation on the line of sight.
6) The horizontal axis.
7) The bubble line on the altitude level.

Measurements of Vertical and Horizontal angles using the theodolite,

1) Measuring the Horizontal angle.



2) Projecting the line.

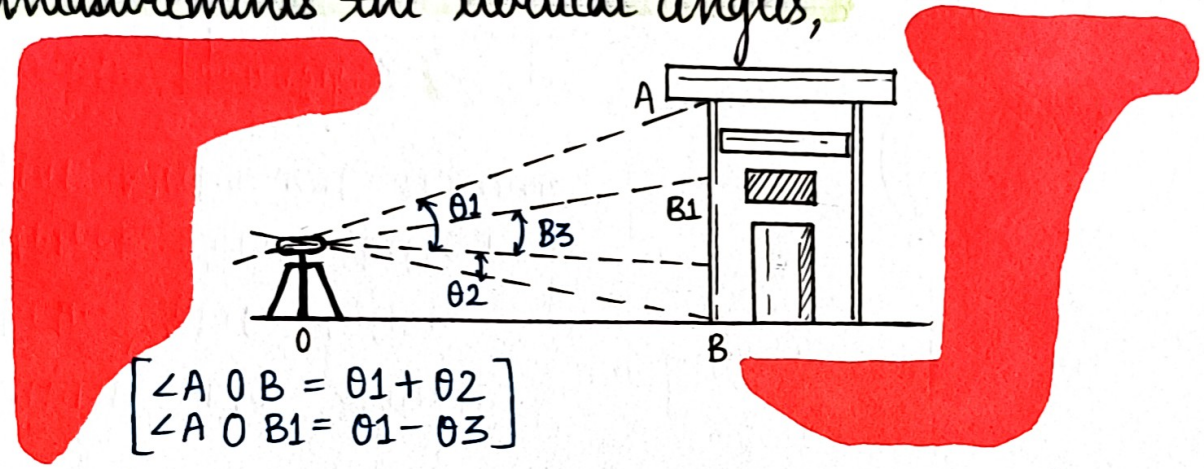


1) Direct the telescope towards the object and using the eyepiece, bring the image of the object in line with the vertical hairs of the diaphragm.

2) For the minute horizontal movement, use a tangent screw and set the line accordingly.

3) Look at the movement vertically by using the vertical clamping screw. This way, by releasing the top plate screw, rotate the telescope horizontally and take any horizonal angle at the end of any point.

To measurements the vertical angles,



$$\left[\begin{array}{l} \angle A\ O\ B = \theta 1 + \theta 2 \\ \angle A\ O\ B1 = \theta 1 - \theta 3 \end{array}\right]$$

1) Set the instrument accurately with reference to the altitude bubble.

2) Set the zero vertical over '0' and level it vernier exactly to the zero of the vertical circle by means of the vertical circle clamp and tangent screw.

3) Bring the bubble of altitude level to the centre of its run, by the means of the clip screws. The line of Collimation is thus made perfectly horizontal, while the vernier reads zero and then use it.

4) Read the both verniers. The mean of the two readings gives the value of the required angle.

5) Change the face of the instrument and repeat. The process, the mean of the two vernier readings gives the second value of the required angles.

Total Station in Surveying,

- A total station in Milestone theodolite that measures the angles and distances between points. It's the most advanced surveying instruments today, capable of measuring the horizonal and vertical angles to ± 3 angle seconds.

Working principle of the total station in surveying,

1) The entire station allows surveyors to create a map of a spot in three instead of two dimensions, as we generally the case with surveying instruments.
2) A total station is a tool used for surveying. The equipment heavily relies on geo-radar and time signals to calculate the levels and distances on the points it is set over.

Types of total station,

1) Scanning Total station
2) Robotic Total station
3) Autolook Total station
4) Total Mechanical station.

Uses and Applications,

→ The most widely used survey instruments in surveying are total stations and paired wire leveled distanced measuring equipments.

→ Surveying instruments provide an accurate understanding of any property, boundaries, and vegetations, making and surveying the backbone of real estate, engineering, and other disciplines. Due to their ease of use, these surveying systems are typically called 'stations'.

GPS in surveying,

1) GPS is very accurate navigation technology that uses satellite to establish a location on the earth's surface regardless of weather conditions.
2) It is dependant on GPS satellites far above the earth which transmit signals containing the time and location of the satellite.
3) Any ground-based receiver which receives signals from four or more GPS satellites can utilize navigation equations to calculate its location on the Earth's surface. Constant signalling can then update moving receiver's speed and direction information.

MODULE-5

SITE ANALYSIS ARCHITECTURAL GUIDE,

- Architecture site analysis, is the process of evaluating a particular locations physical, mental and social characteristics with the ambitions of developing an architectural solution that will both address and enchances its internal and the external context.

Why is and what is site analysis in Architecture?

1) Architectural site analysis is the process of researching, observing and analysing the physical, cultural, social, historical, environmental and infastructual characteristics of a site in order to inform the design of a building or space.
2) It involves collecting and presenting data about a site and its context, such as climate, topography, land use, zoning regulations, transportation, and community needs.

Why do architects use it?

→ As already touched on, a projects success is built on its relationship to its site and surroundings, and therefore, by dyault should always be bespoke to and based on its locations and local characteristics.

→ Every site has very specific solar orientations, views (good and bad) and often a very explict character and the atmosphere.

→ Each one of this areas is an opportunity to generates a meaningful conceptual approach and a way to device a buildings shape, layout, form and materiality.
Once established, further analyse of access, wind direction, site levels, vegtations and context.

What to look for during your analysis and research,

1) GENERAL,
1) Geographical locations
2) Site boundaries
3) Entrance locations and types.
4) Site security
5) Existing buildings

2) NEIGHBOURING BUILDINGS,
1) Distances
2) Heights
3) Uses
4) Vernacular
5) Site lines
6) Rights to light
7) Legal restrictions
8) Noise levels

3) LEGAL RESTICTIONS,
1) Conservation areas
2) Covenents and easments
3) Rights of way
4) SSSI (site of special scientific Interest)
5) Listing (Grade II, II*, I)
6) TPO's (Tree preservation orders)
7) Previous planning permission and Applicatoin.

4) ACCESS,
1) Public Access
2) Private Access
3) Vechicle Access
4) Existing Site Circulation routes within.

5) TOPOGRAPHY,
1) Levels
2) Gradients
3) Key features/restictions
4) Exposure

6) VIEWS,
1) Public views out
2) Public views in

7) SUN PATHS,
1) Sun Path
2) Solar gains
3) Shading

8) WIND PATTERNS,
1) Prevailing directions
2) Shelter
3) Exposure

9) PUBLIC TRANSPORT LINKS,
1) Bus's
2) Train's
3) Taxi's

10) TREES & VEGETATIONS,
1) TPO's and protected trees
2) Root protection areas
3) Items for removal
4) Items to maintain
5) Ownership.

11) ECOLOGY,

1) Protected specis
2) Protected zones
3) Impacts.

12) SITE RESISTRICTIONS,

1) Visibility
2) Light
3) Views
4) Neighbours / Adjacents conditions.
5) Pollutions
6) Flooding / Landscapes

13) HAZARDS,

1) Electricity lines, drainage Telephone lines, sub-stations
2) Derelict Buildings
3) Unfinished building works

How to read a land survey,

- Land surveys are an important part of heritage and history and without them who knows what the would look like. In fact, if it weren't for land surveys, we would not have maps. And Although you should always consult a proffesional land surveyor regarding measurements on your property, let's look at how to read a land survey.

Types of Survey Drawings,

1) BOUNDARY SURVEY.

A Boundary survey determines the boundaries of the property described in the deed documents. It shows where the property begins and ends. If you need just basic information about your property a boundary survey will sufficient.

It tells about the own boundary boudar lines and all deed documents of it.

2) ALTA SURVEY,

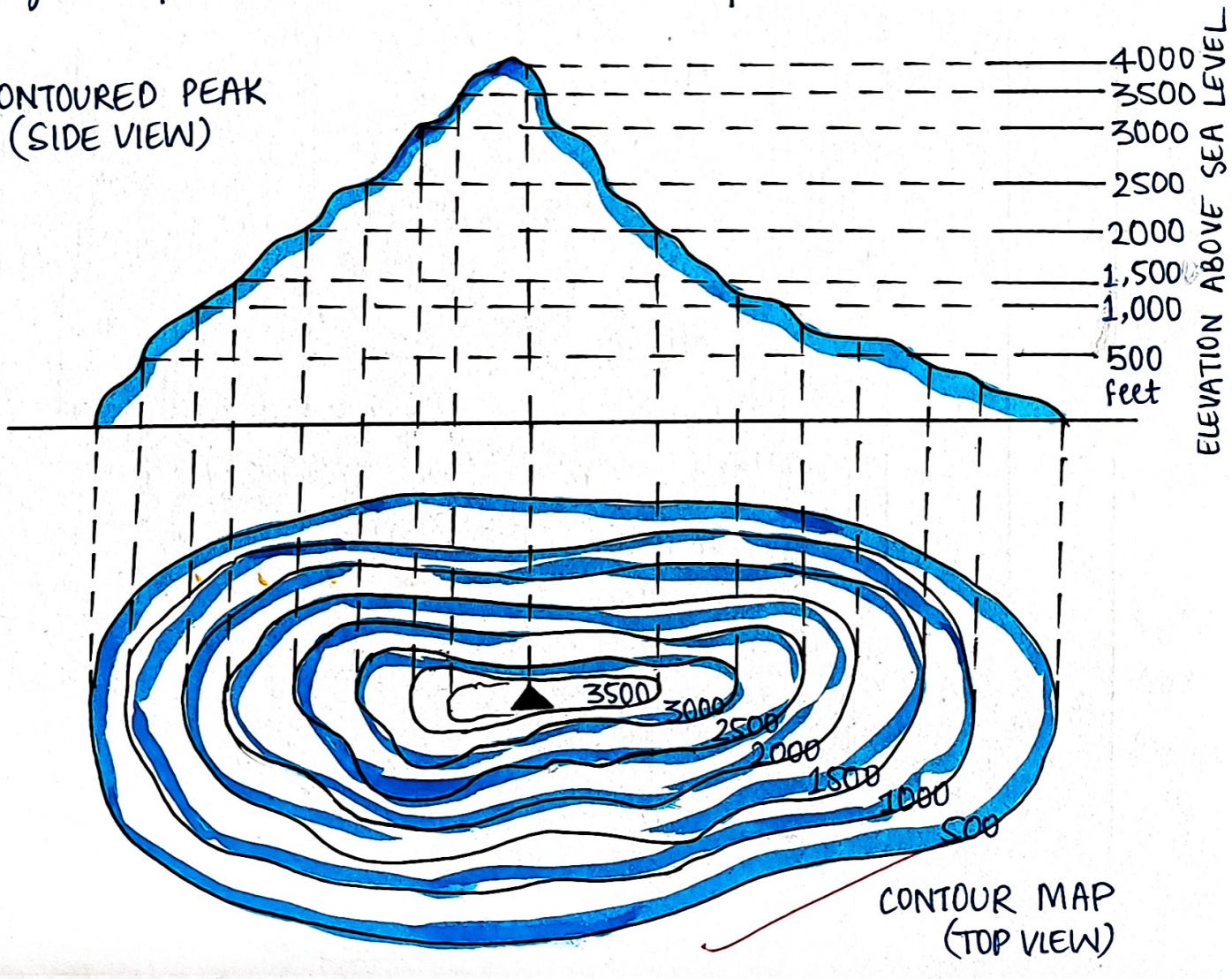
The ALTA or ACSM survey is a kind of boundary survey but it is more comprehensive. Its standard is set by the National Society of Proffestional Surveyors, which used to be an American Land Title Associations.

3) TOPOGRAPY SURVEY,

A Topographic survey is focused on the land's geographic characteristics. This is collecting all data on elevation points, contour lines, slopes, etc.

4) CONTOUR SURVEY,

Contouring means determining the elevation of various points on the land and fixing the points of the same horizontal position in the contour map.

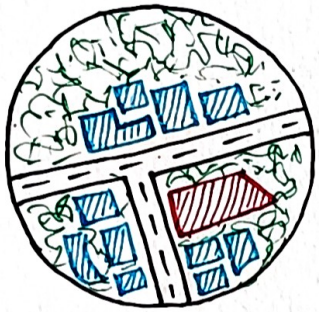


SITE ANALYSIS.

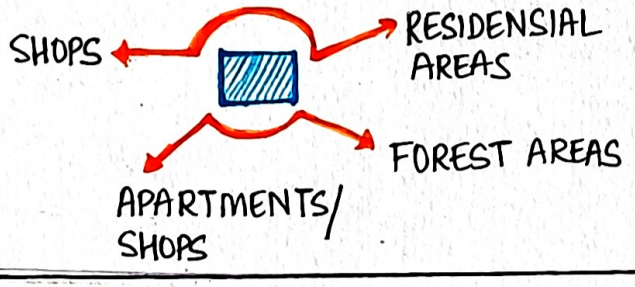
LOCATION

HSR LAYOUT, KARNATAKA (INDIA)

KEY PLAN



EXISTING BUILDING



LEGENDS

1) SUN PATH
2) VECHICULAR ACCESS
3) PUBLIC ACCESS
4) PEDESTRIAN ACCESS
5) NOICE SOURCE
6) WIND DIRECTIONS
7) OBSTRUCTIONS
8) TREES (VEGETATION)
9) SITE BOUNDARY
10) RADIAL
11) EXISTING BUILDINGS
12) NORTH
13) VIEWS

SWOT

S (STRENGTH)
1) EASY CONNECTIVITY
2) VEGETATIONS/ VIEWS, SPACES

W (WEAKNESS)
1) ALTERNATIVE ROUTES
2) NO EDU. INSTITUTES NEARBY.

T (THREAT)
1) ANIMAL TREATS FROM FOREST
2) NATURAL DISASTERS.

O (OPPURTUNITY)
1) LAND AVAILABILITY
2) LAGRE SITE WITH NATURAL VEGETATION & LANDSCAPE

LANDMARKS

- AGARA JAGANNATH TEMPLE ⟺ (3.9 KM)
- MANIPAL HOSPITAL ⟺ (4.4 KM)

CONNECTIVITY

1) TRAIN STN. ⟺ KSR JNC. (11 KM)
2) METRO STN. ⟺ INDRANAGAR (8.9 KM)
3) BUS STOP ⟺ AGARA BUS STOP (3.3 KM)
4) AIRPORT ⟺ K. AIRPORT (52 KM)

CLIMATE