Presentation on
EXTENSIVE SURVEY PROJECT
(18CVEP68)
for
Sixth Semester B.E. Students

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COURSE OBJECTIVES

- Understand the practical applications of Surveying
- Use of Total station and other Measurement Equipment
- Work in teams and learn time management, communication and presentation skills

COURSE OUTCOMES

- ✓ Apply the principles of surveying, hydrology, hydraulics and irrigation in new tank project and restoration of an existing tank project
- ✓ Apply the principles of surveying and environmental engineering in water supply and sanitary project
- ✓ Apply principles of surveying and highway engineering in highway project

COURSE OUTCOMES

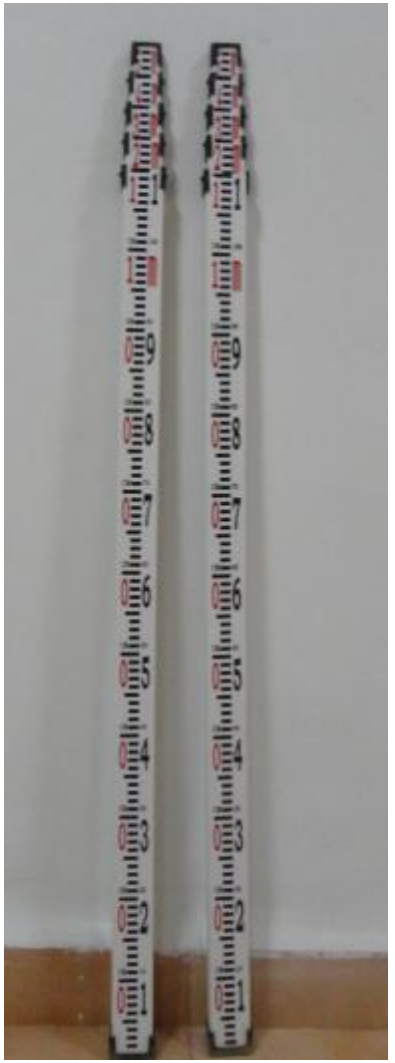
- ✓ Show a typical town-layout indicating the components such as roads, residential areas, commercial areas, recreational areas as per the regulations of the town planning department
- ✓ Demonstrate total station and Application of CAD software in Civil engineering projects
- ✓ Function effectively as an individual and as a team member

PROJECTS FOR THE EXTENSIVE SURVEY CAMP

1. NEW TANK PROJECT
2. WATER SUPPLY AND SANITARY PROJECT
3. HIGHWAY PROJECT
4. RESTORATION OF AN EXISTING TANK
5. TOWN / HOUSING / LAYOUT PLANNING

SURVEYING INSTRUMENTS

Dumpy Level



Levelling Staff

SURVEYING INSTRUMENTS

Ranging Rods

Tape

Flag Posts

Arrows

Cross Staff

SURVEYING INSTRUMENTS

Prismatic Compass

SURVEYING INSTRUMENTS

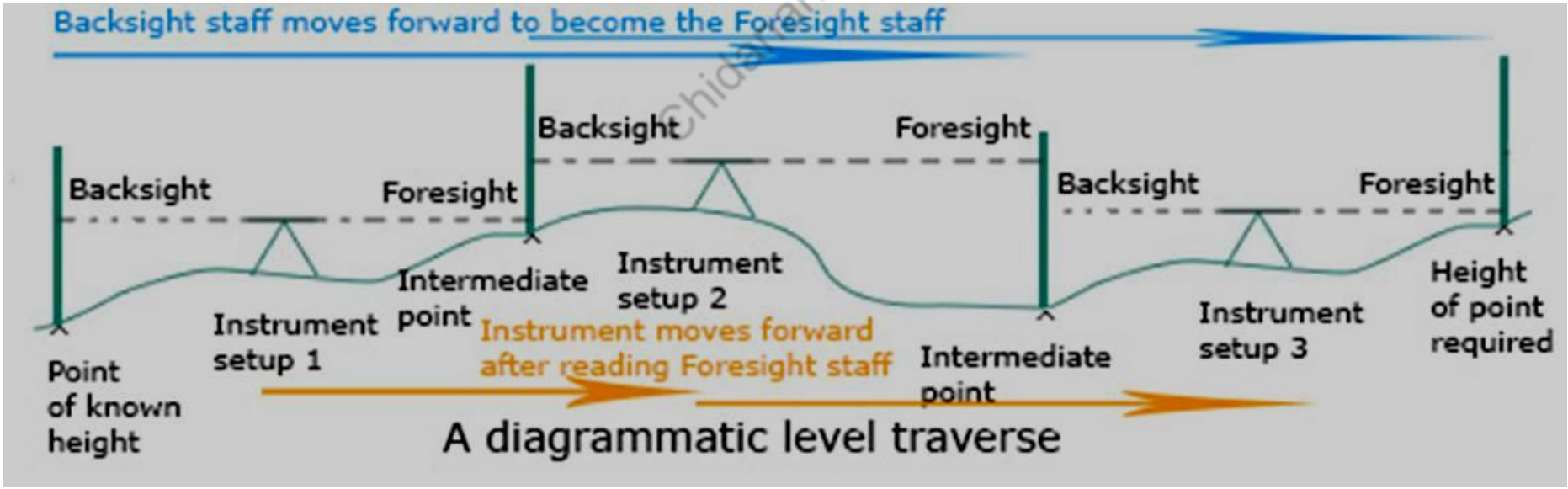
Total Station

SURVEY WORK

1. Fly Levelling

Carrying Levels from PBM to establish TBM.

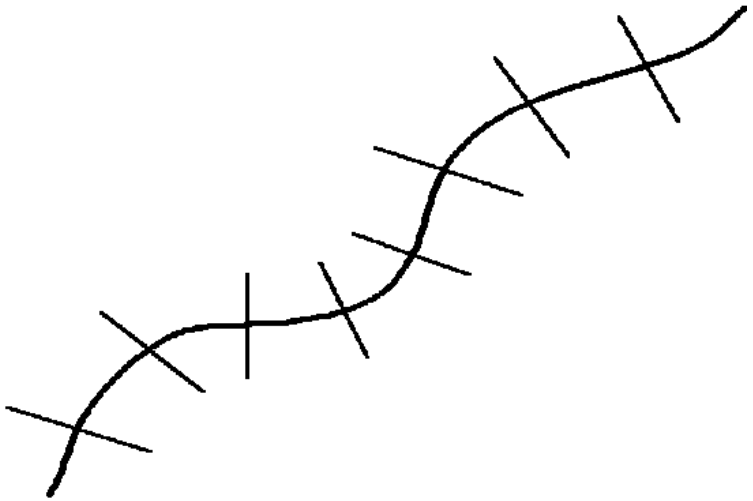
Only BS and FS are taken.

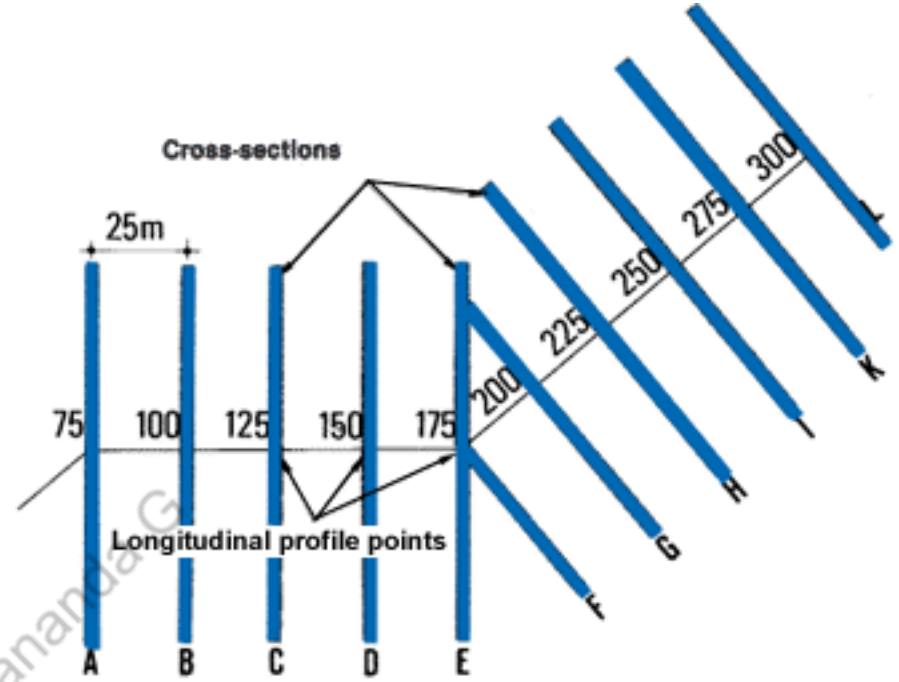


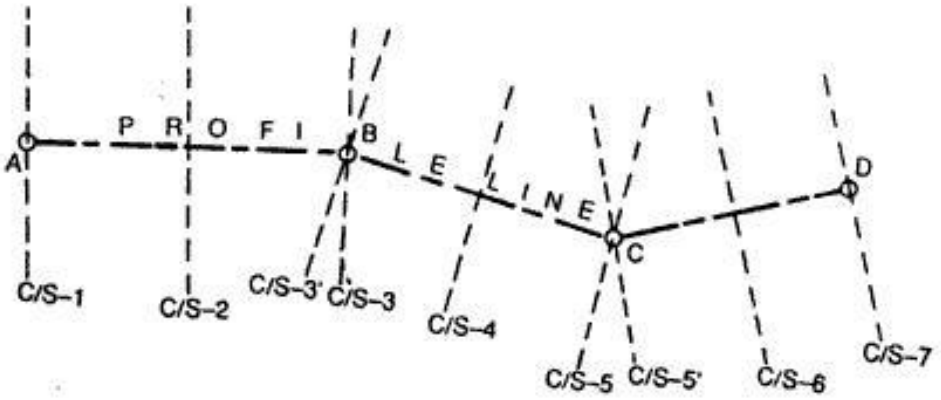
SURVEY WORK

2. Longitudinal Sectioning (LS) and Cross Sectioning (CS)

- **LS at suitable intervals along the proposed alignment**
- **CS at suitable intervals across the proposed alignment on it's either side.**





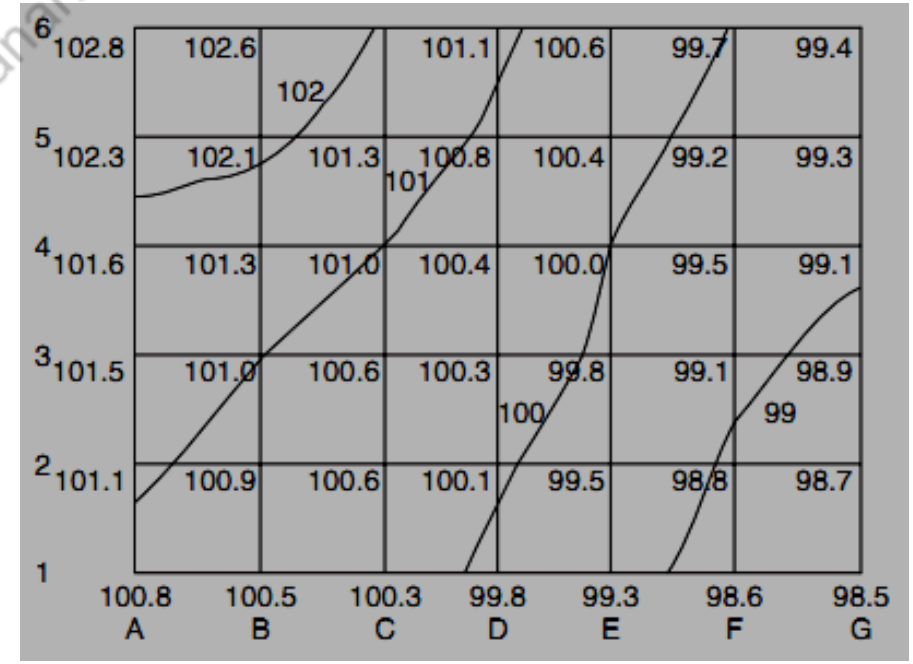


LS and CS

SURVEY WORK

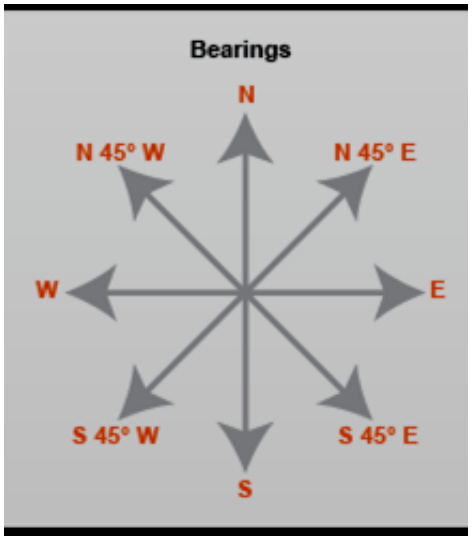
3. Block Levelling (BL)

Formation of rectangular block of required dimension, dividing them into grids and taking levels at the corners of grids

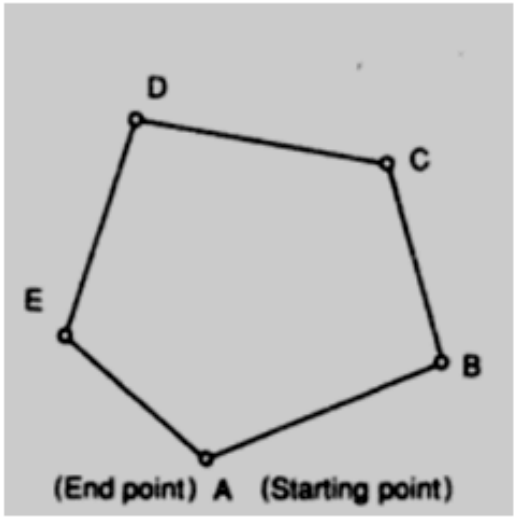


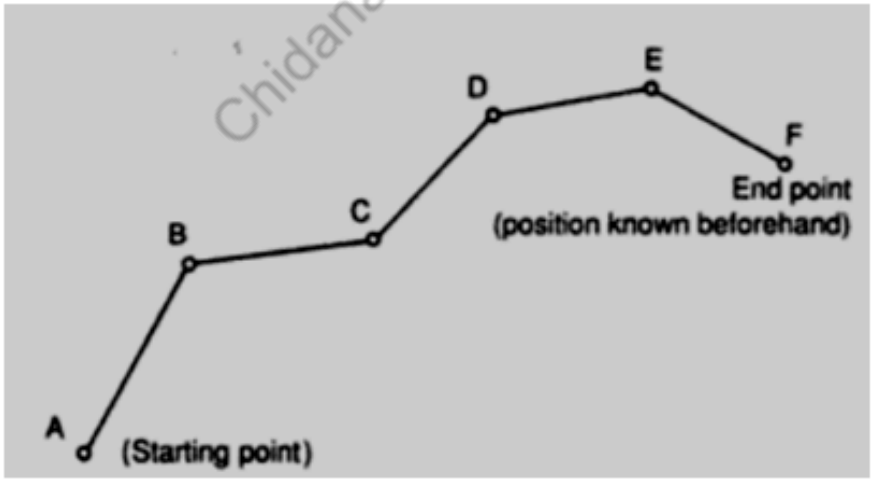
SURVEY WORK

4. Bearing of a line



It is taken when there is change in alignment

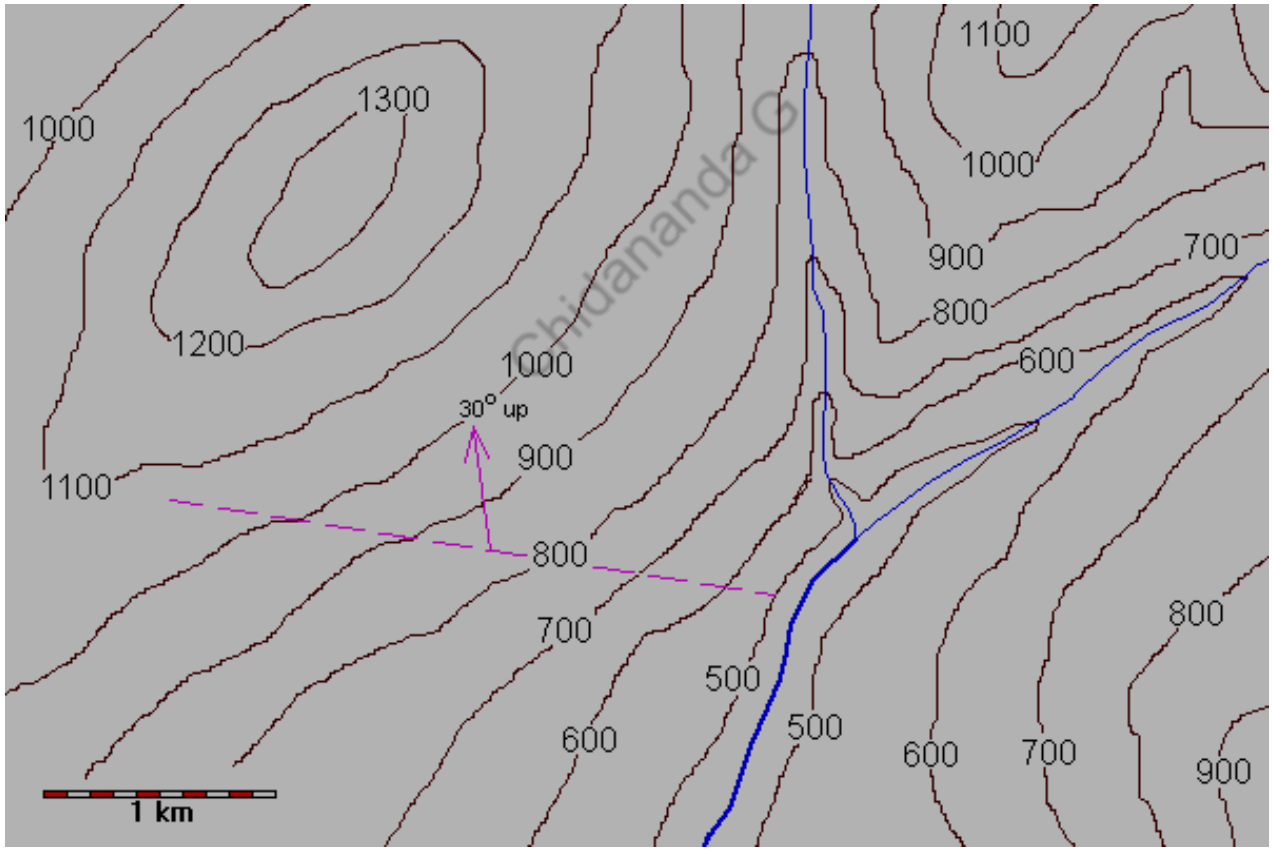




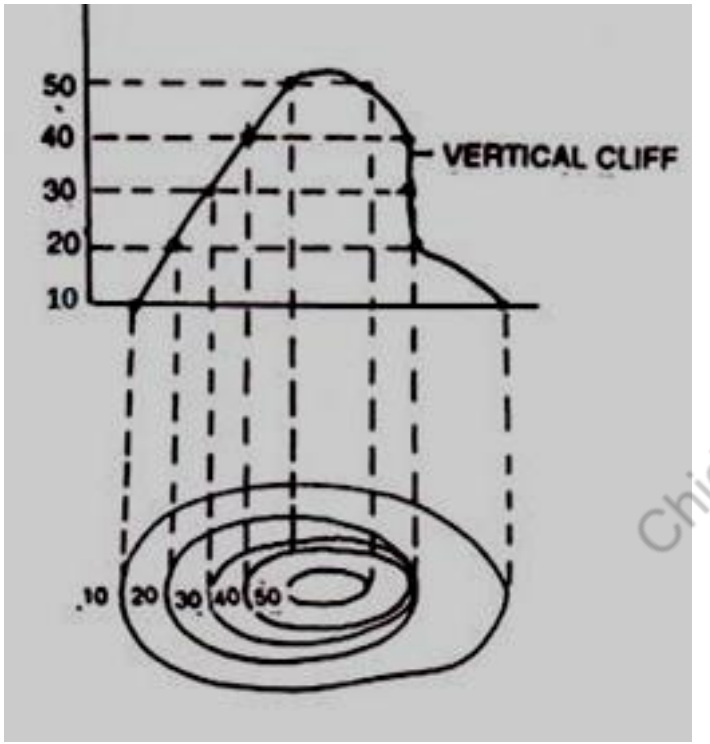
SURVEY WORK

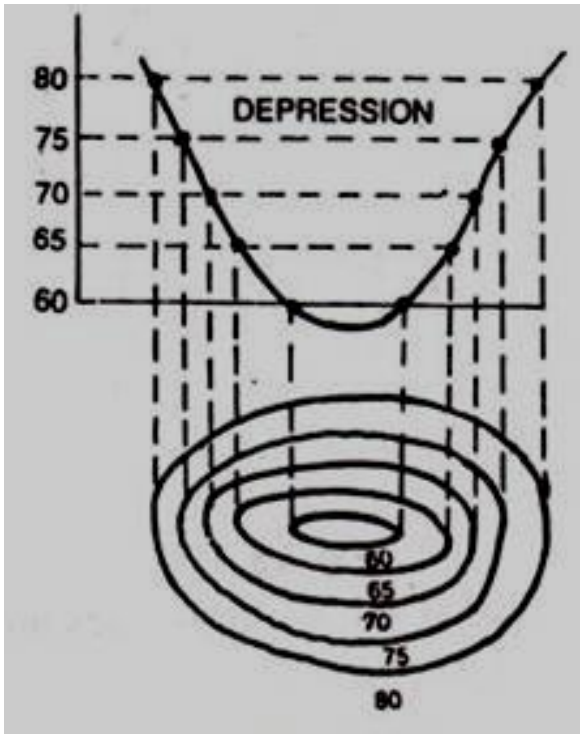
5. Contours

Line joining points of Same RL



SURVEY WORK





CONTOURS

1. NEW TANK PROJECT

Survey work includes

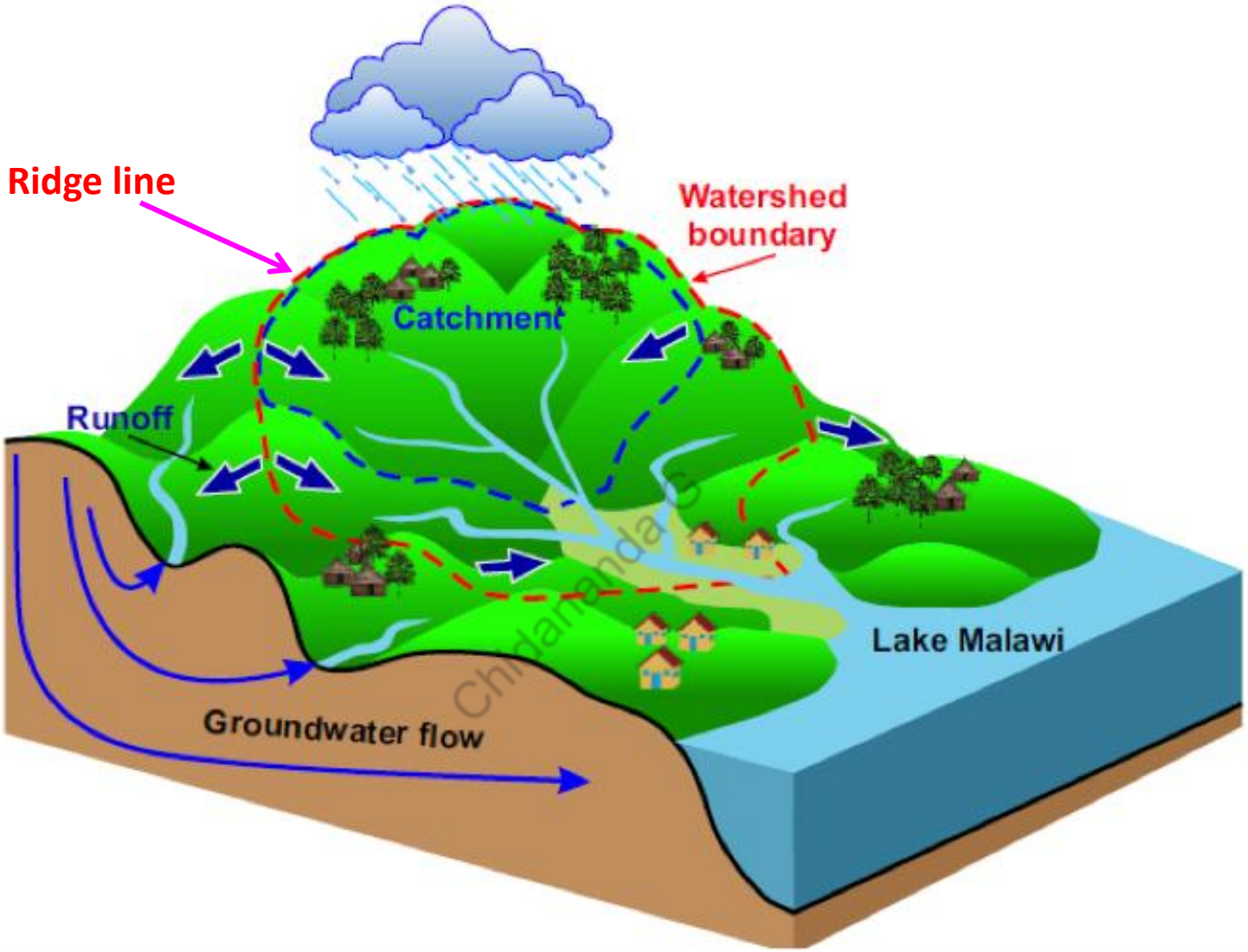
a) LS and CS of the proposed bund line

b) Capacity contours (CC)

c) BL for the waste weir

d) BL for the tank sluice

e) Canal Alignment (CA)

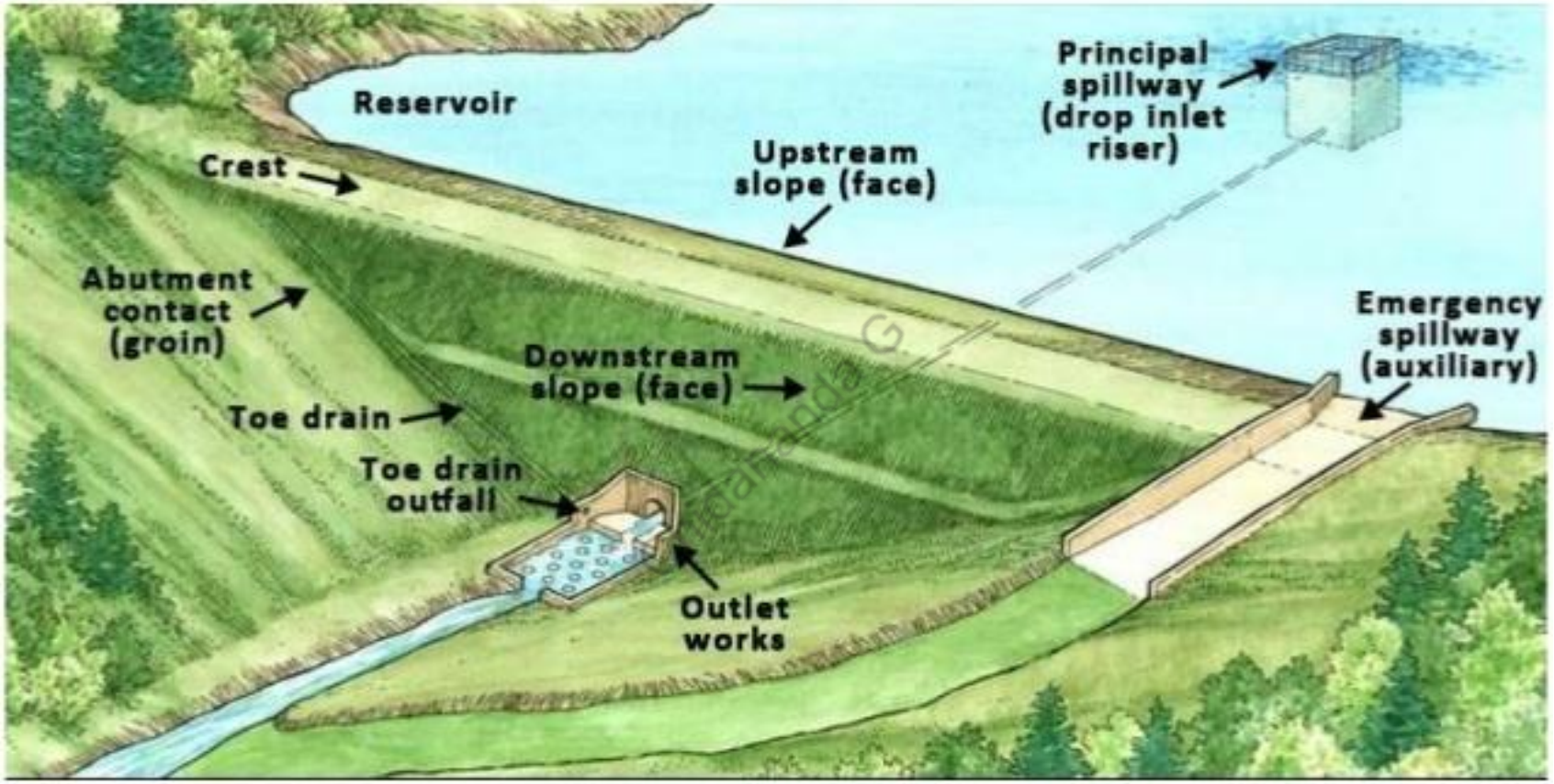


Catchment Area

Typical View of Valley across which New Tank will be Constructed

Typical View of Earthen Dam

Typical View of Earthen Dam



Typical View of Earthen Dam

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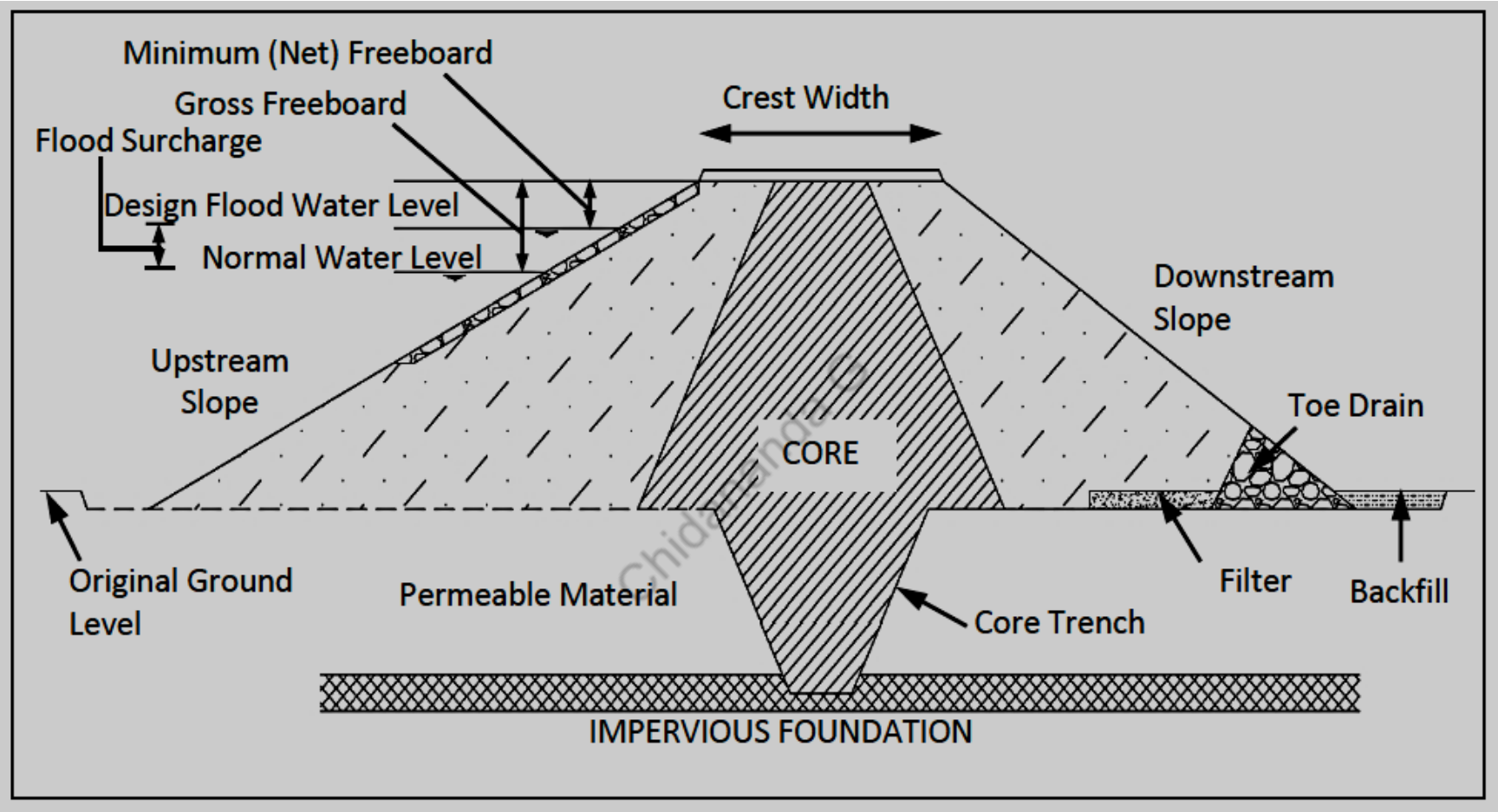
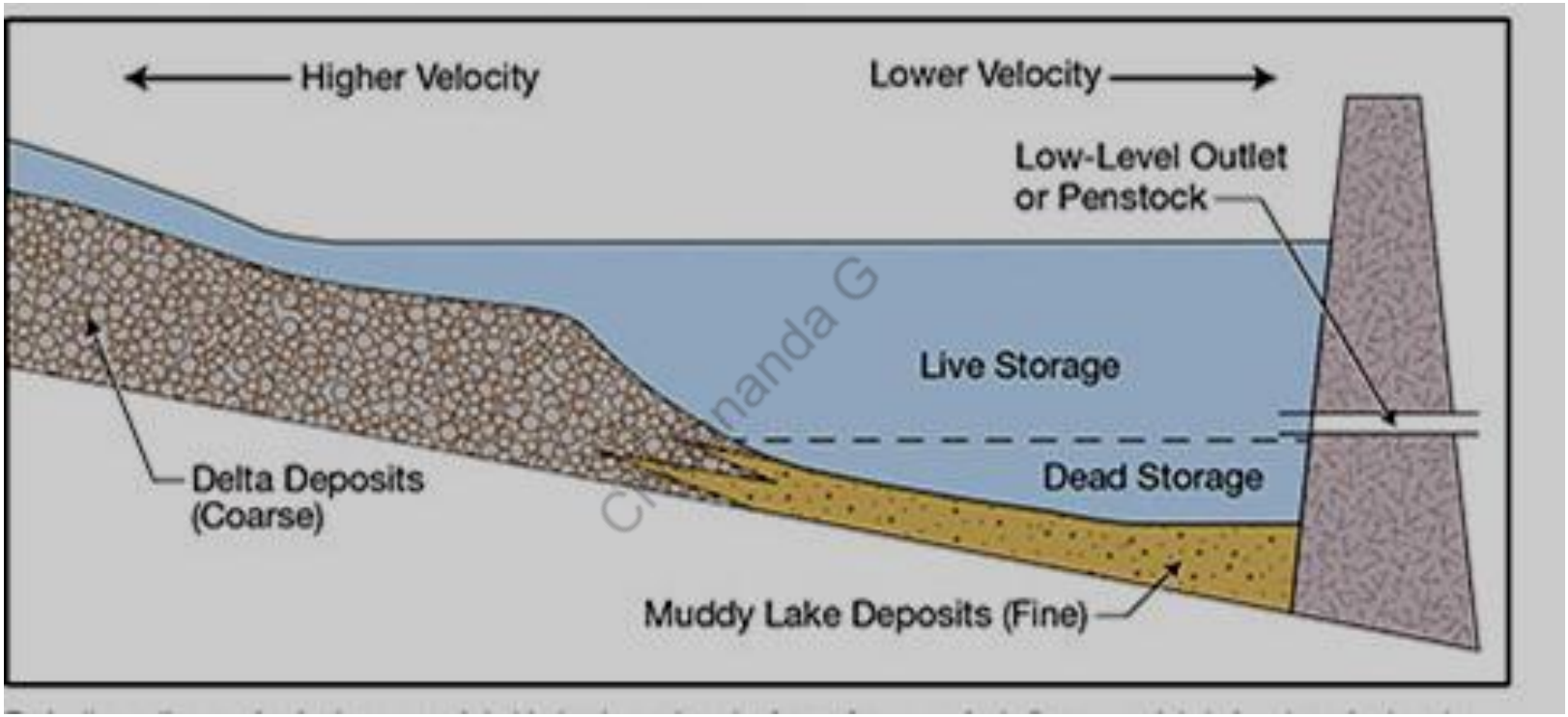


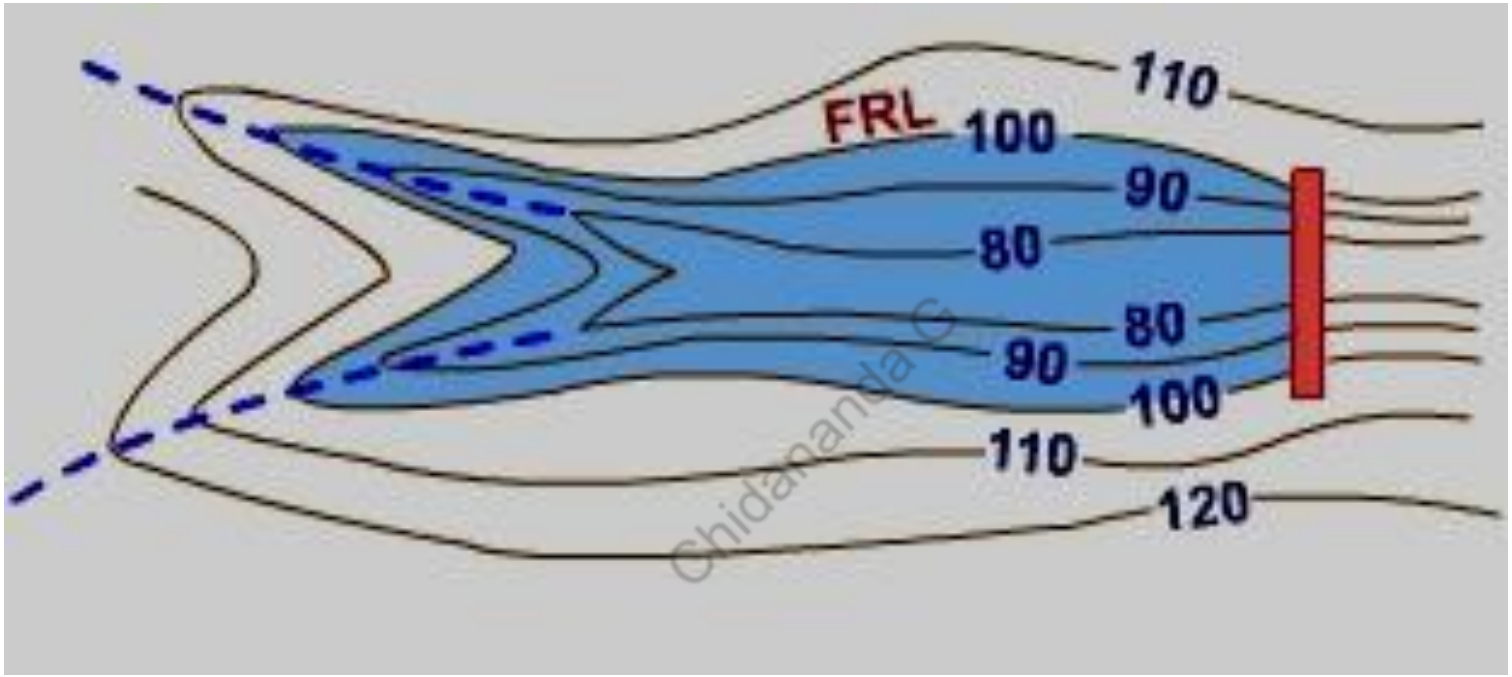
Typical C/S of Earthen Dam



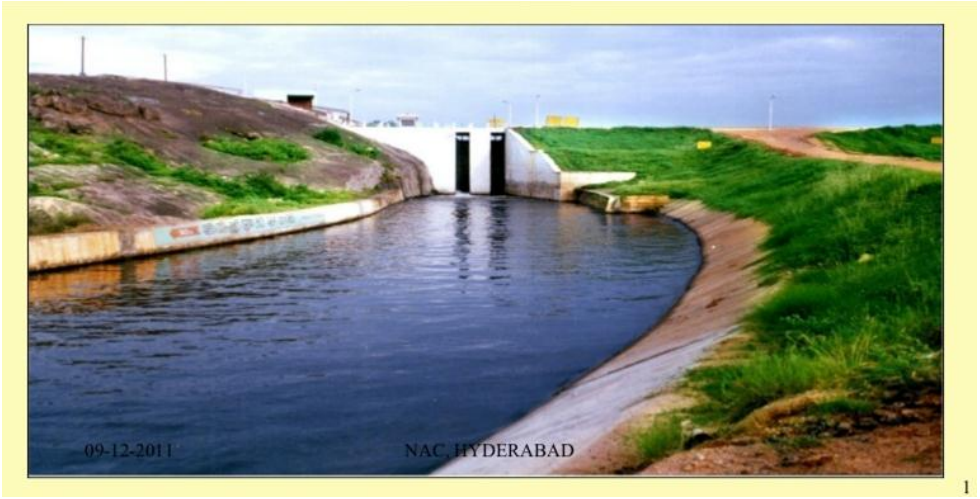
Typical C/S of Earthen Dam

Typical View of Tank Sluice

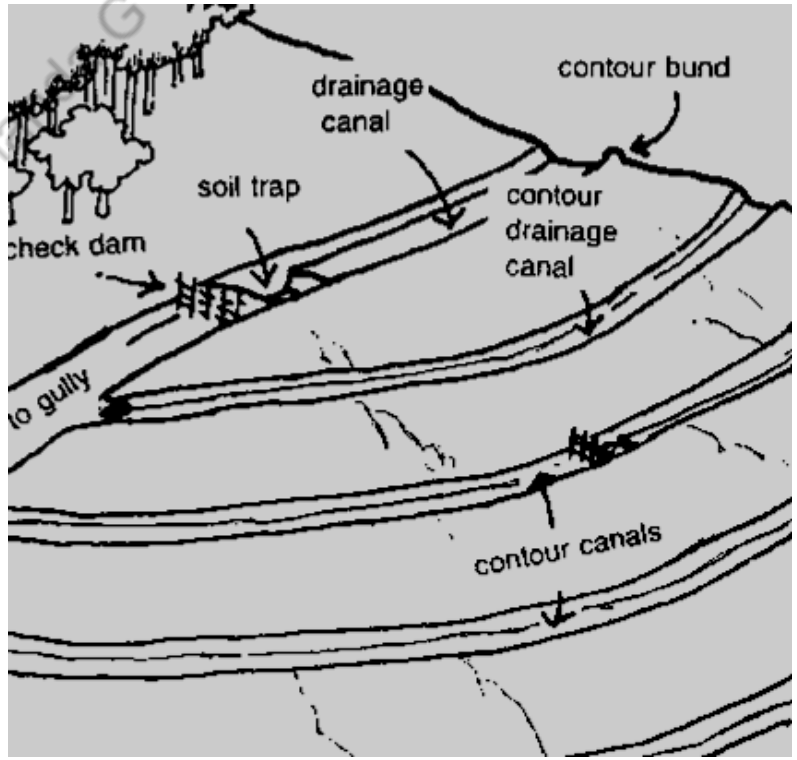
Typical View of Waste Weir or Surplus Weir

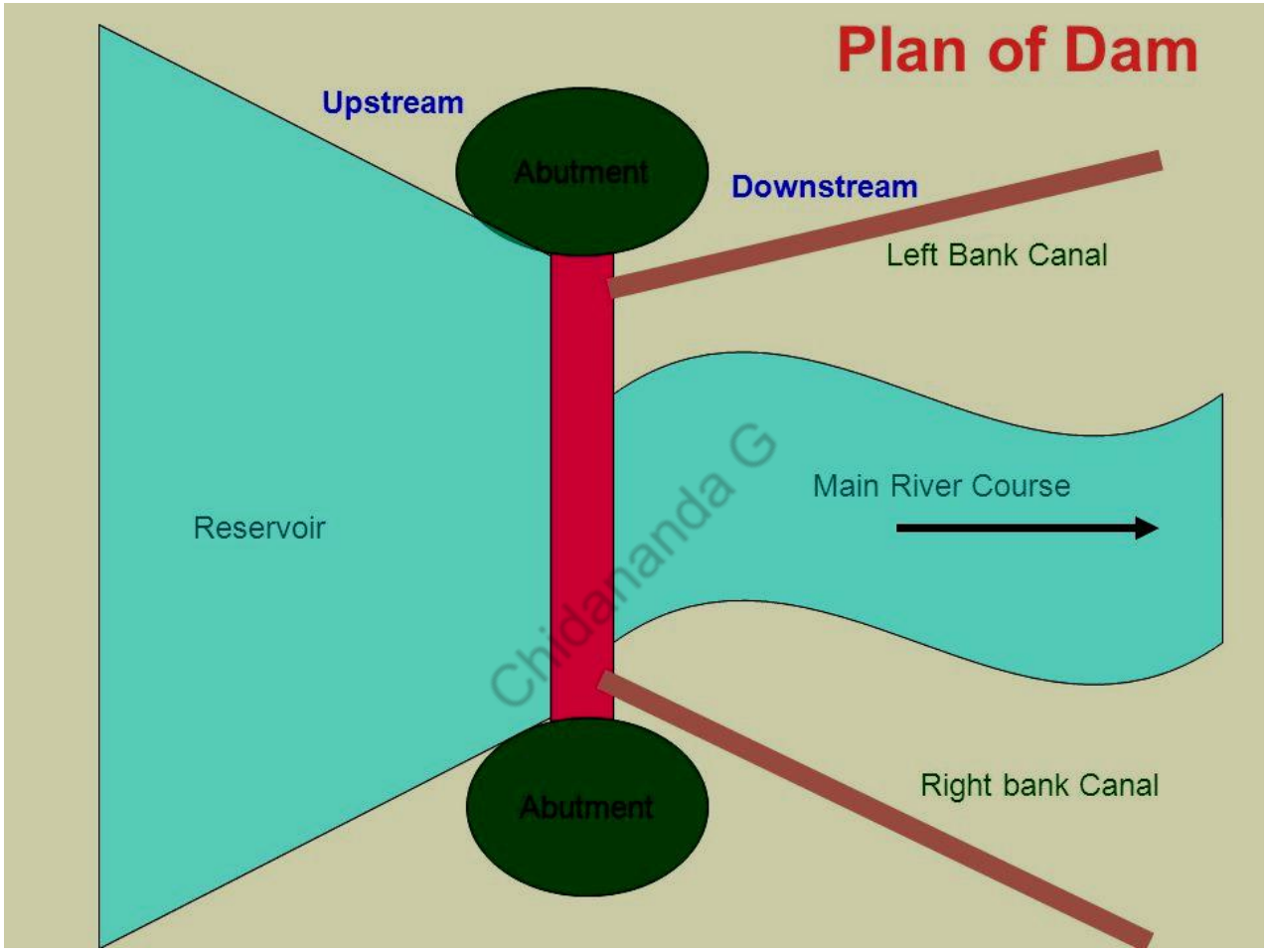


Capacity Contour showing Capacity of a Reservoir



Canal Alignment





Typical Plan of Dam Showing Left Bank Canal and Right Bank Canal

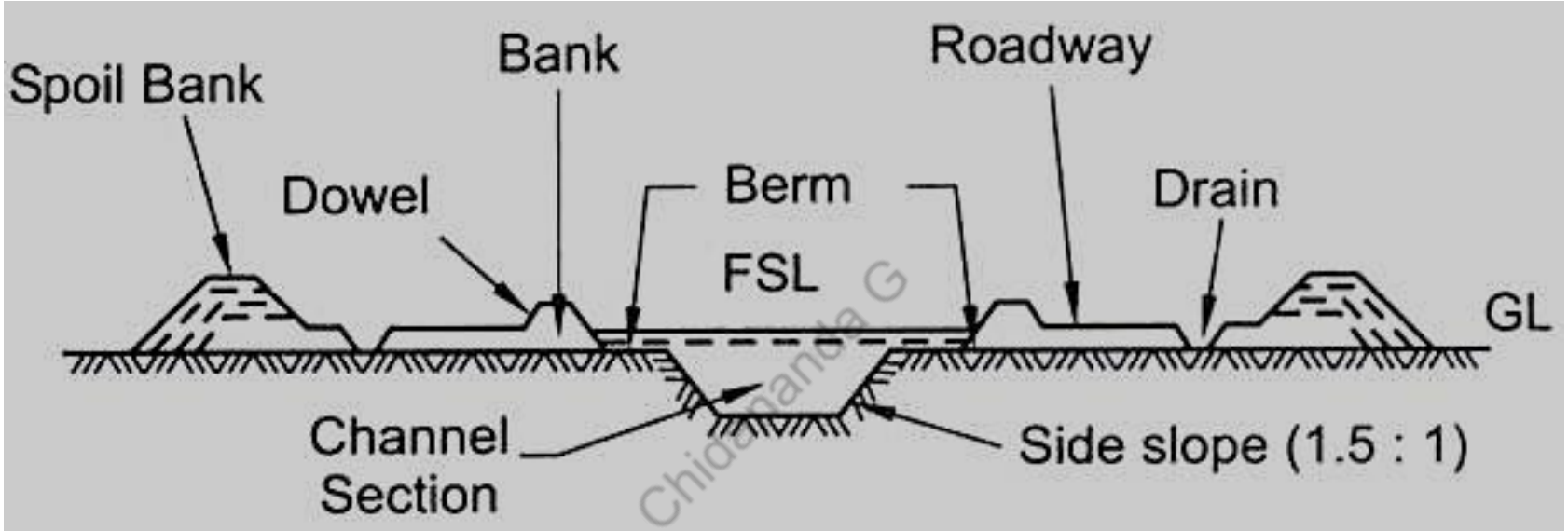


Fig. 9.9. Typical cross-section of canal showing component parts

Typical cross section of a Canal

2. RESTORATION OF AN EXISTING TANK

Survey Work includes

a) **LS and CS of the existing bund line**

b) **Capacity contours (CC)**

Existing Tank

Restoration of an Existing tank is done by

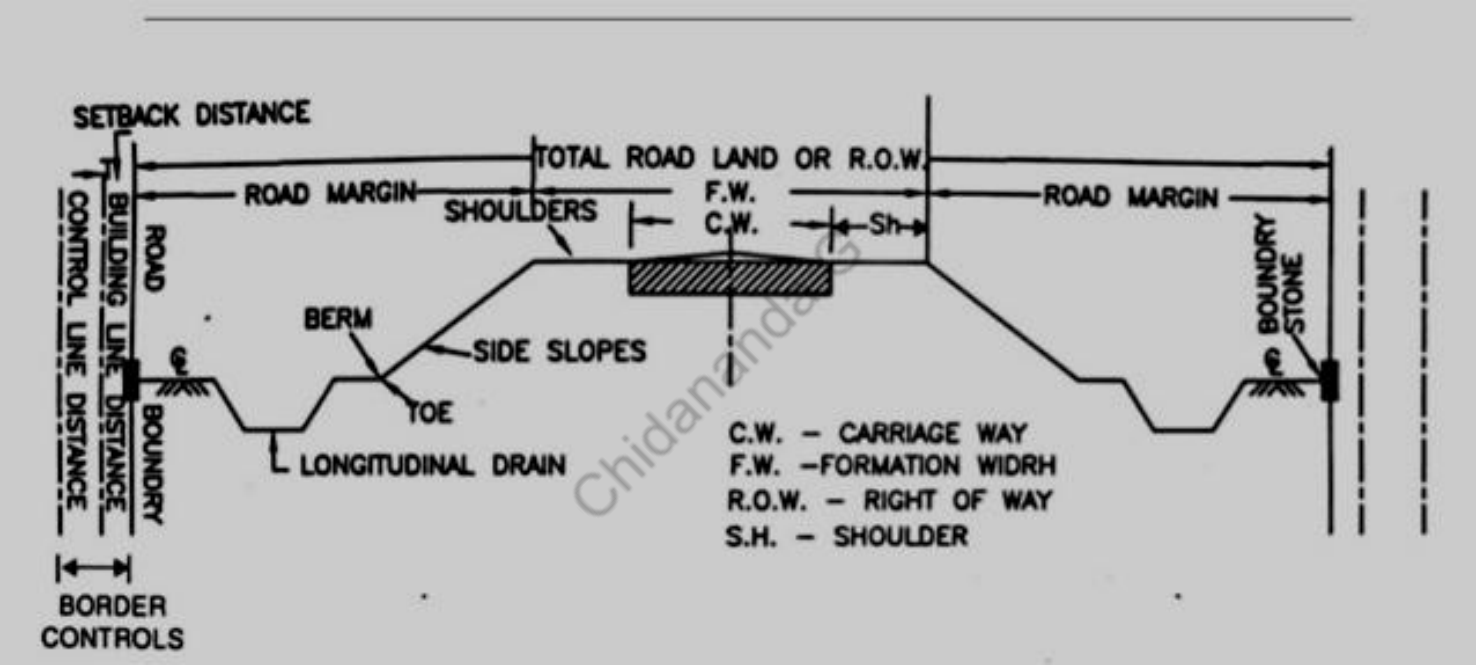
1. **Removing Silt**
2. **Increasing the height of dam.**

3. HIGHWAY ALIGNMENT

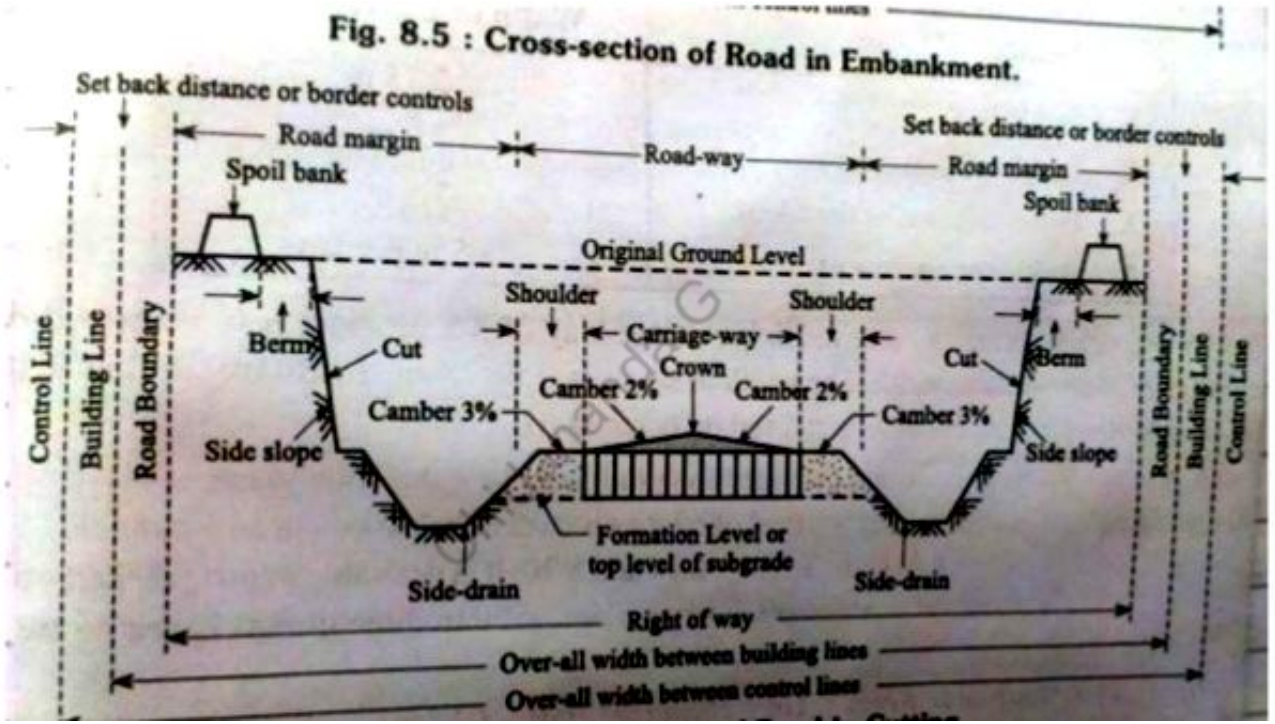
Survey work includes

a) LS and CS along the proposed alignment

b) BL at Valley points



Typical Cross Section of Road in Embankment



Typical Cross Section of Road in Cutting

4. WATER SUPPLY AND SANITARY PROJECT

It includes

a) Population Survey

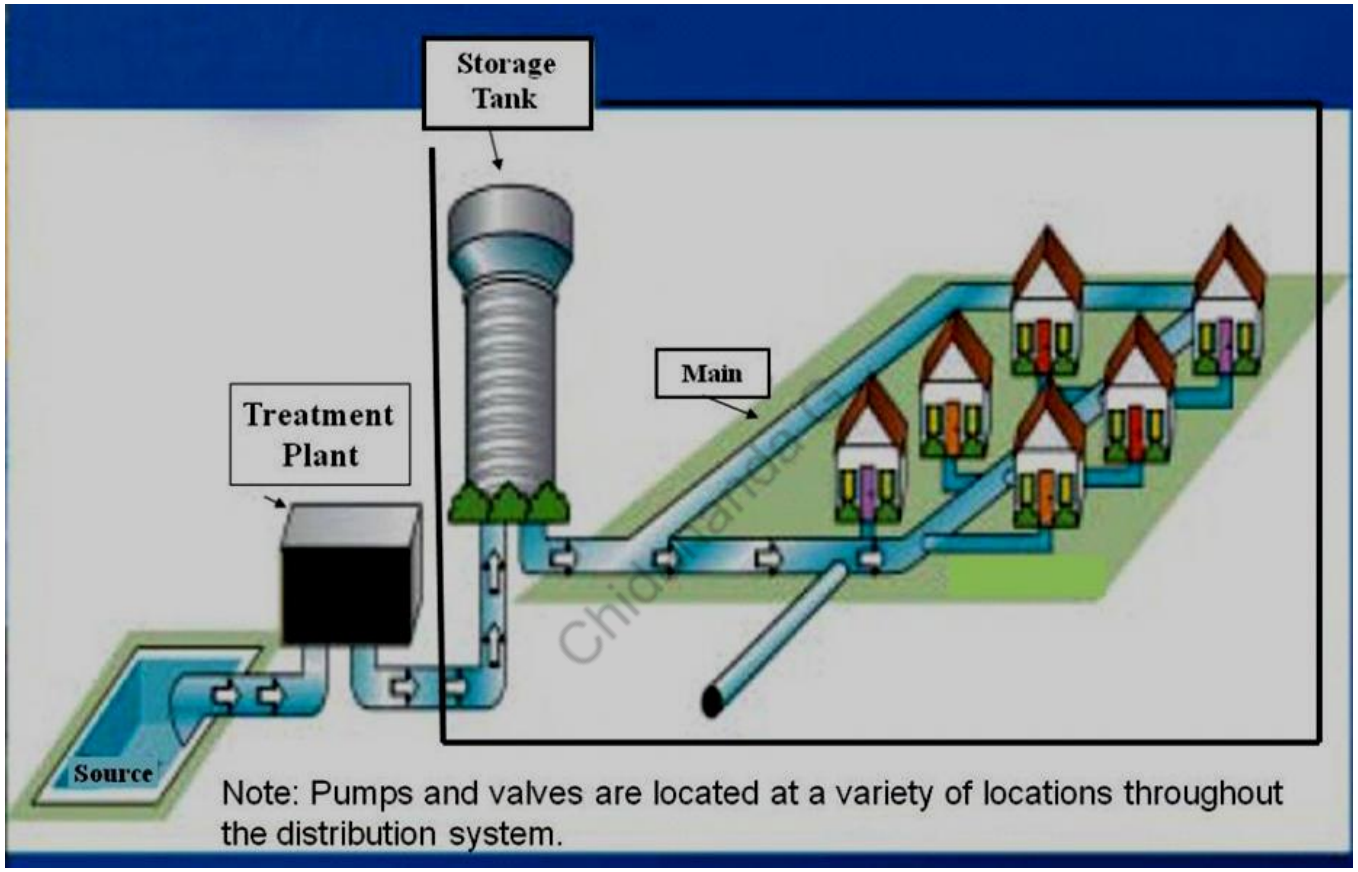
b) BL of water treatment plant near the tank

c) LS from the water treatment plant to village

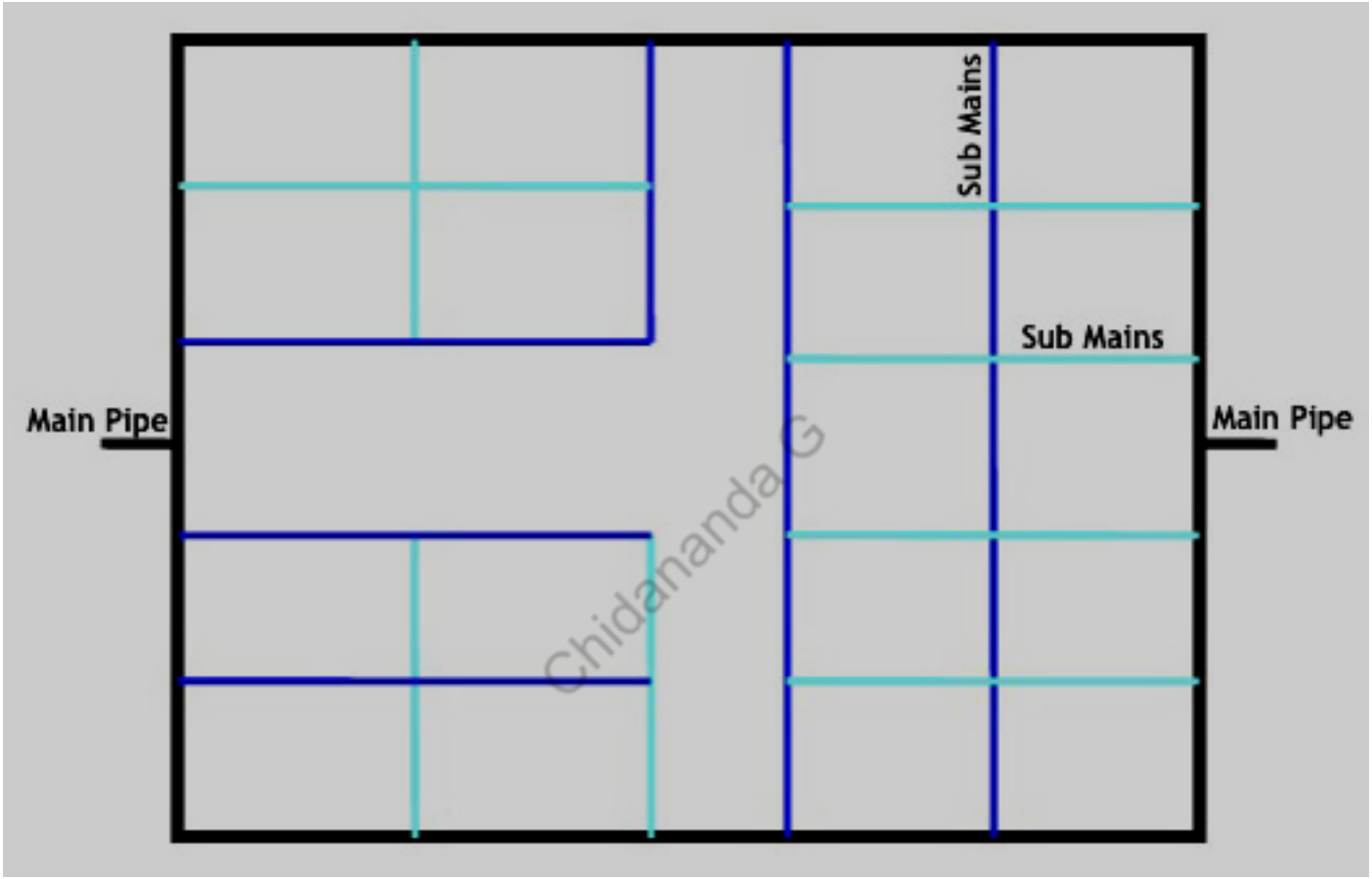
d) Survey of Village showing mains and sub-mains for distribution of water.

e) BL of Sewage Treatment Plant

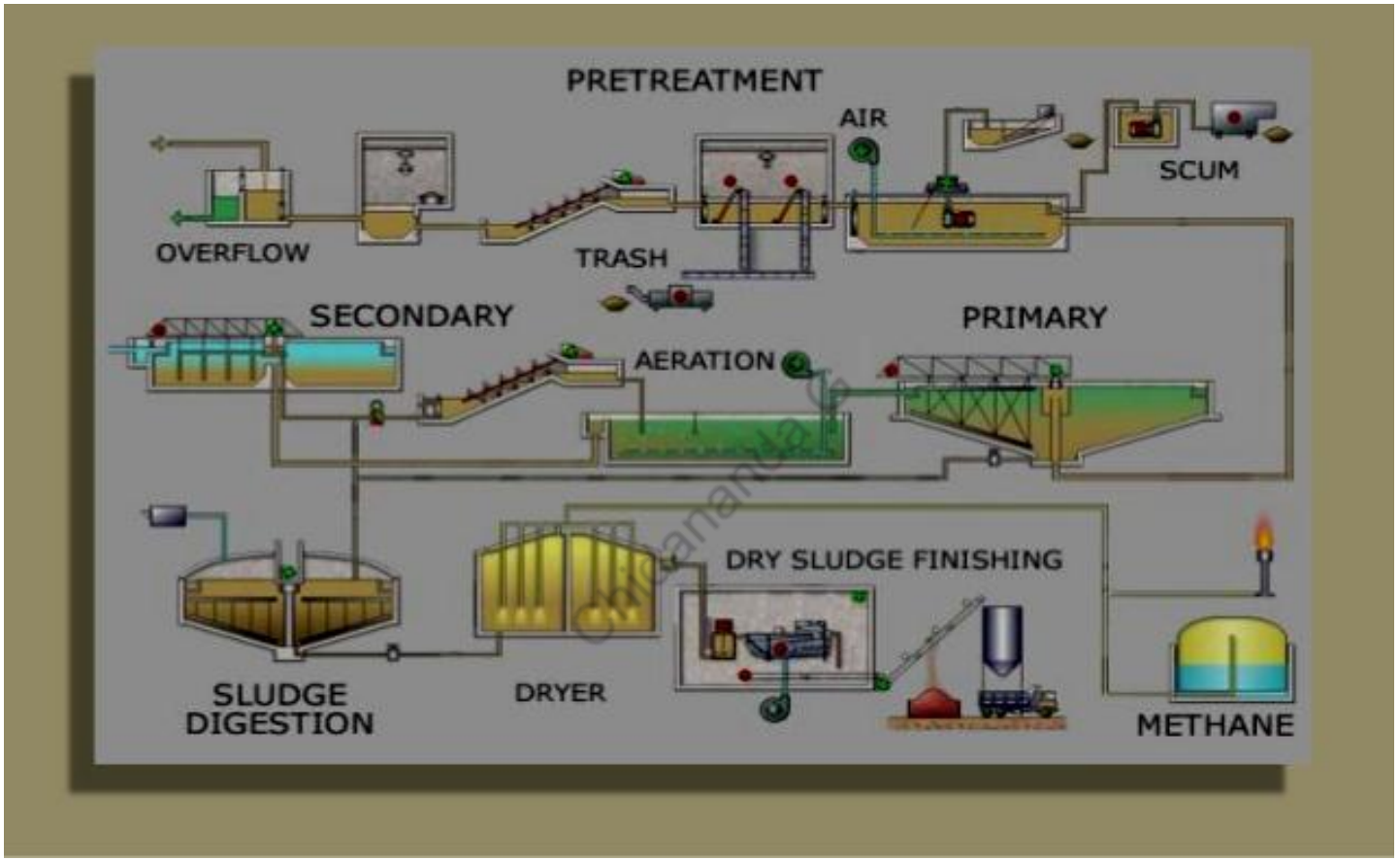
Intake Tower



Layout Showing Water Distribution



Typical View of Mains and Sub-Mains for Water Supply



Layout Showing Sewage Treatment

5. TOWN PLANNING

- "A city should be built to give its inhabitants security and happiness" – **Aristotle**
- "A place where men had a common life for a noble end" – **Plato**

- An art of shaping and guiding the physical growth of the town by creating buildings and environments to meet the various needs such as social, cultural, economic and recreational etc. and to provide healthy conditions for both rich and poor to live, to work, and to play or relax, thus bringing physical, social and economic planning of an urban environment


Town - planning
Well-balanced social and economic development
Improvement of life quality
Responsible administration of resources and environment protection
Rational use of land

IF PLANNING WAS NOT THERE?

- **Uneven & Chaotic development – Contrasting urban scenario.**
- **Mixed Land use – Industries springing up in residential zones.**
- **Congested Transportation Network – Overflowing traffic than expected.**

ROLE OF PLANNERS

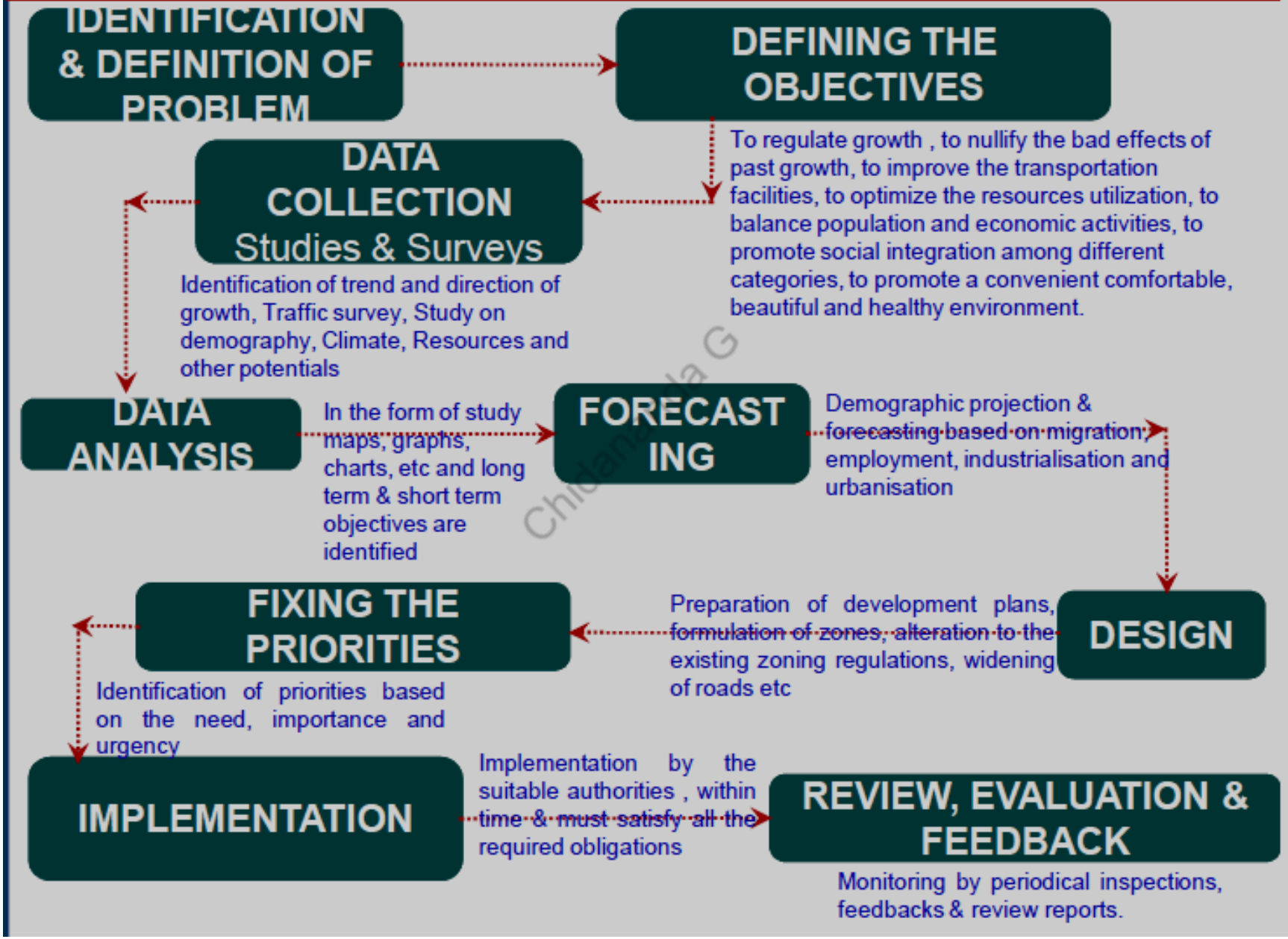
- ✓ **Consider – "Human communities are always in the process of changing"**
- ✓ **Recognize – "The complexity of communities"**
- ✓ **Concern – "About the future"**

AIMS & OBJECTIVES OF TOWN PLANNING

- To promote healthy conditions and environments for all the people
- To make right use of the land for the right purpose by zoning
- To ensure orderly development
- To avoid encroachment of one zone over the other

- Social, economic, cultural and recreational amenities - open spaces, parks, gardens & playgrounds, town halls stadiums, community centers, cinema houses and theatres
- To preserve the individuality of the town
- To preserve the aesthetics in the design of all elements of town or city plan.

PLANNING PROCESS



Thank You