



A Y DADABHAI TECHNICAL INSTITUTE, KOSAMBA
DEPARTMENT OF CIVIL ENGINEERING



VISIT REPORT

EDUCATIONAL VISIT OF CANAL NEAR KOSAMBA

BATCH - 2021 | HYDRAULICS | December 24, 2022

A.Y. DADABHAI TECHNICAL INSTITUTE, KOSAMBA

CIVIL ENGINEERING DEPARTMENT

TO,

THE DIRECTOR

A. Y. DADABHAI TECHNICAL INSTITUTE, KOSAMBA.

Respected sir,

We the faculty members of Civil Engineering Department, as a part of curriculum of 3RD semester, organized a visit tour at Kosamba on **24th December 2022** for **Hydraulics** subject.

We left from college in the afternoon on **24th December** and reached at **12:00am**. The visit went well and we were able to complete the visit within the estimated duration. After the visit completion we came back at 2:30pm to college.

We are thankful to our I/C HOD and PRINCIPAL for granting us the permission to carry out the visit at Kosamba, and we assure complete coordination ahead in the semester.

Thanking you...

Mr. S. Y. PATEL

Mr. M. I. SHAIKH

HOD
Civil Engineering Department

DIRECTOR
(Mr. M. M. DALCHAWAL)

ACKNOWLEDGEMENT

We are gladly thankful to our Director Mr. M. M. Dalchawal Sir as well as I/C Head of the Department Mr. M. J. Parmar and our faculties who gave to students a great guidance regarding training. So, we decided to take students for visit to canal which is situated Mahuvej village Kosamba.

We are especially thankful to Mr. Shahid Y Patel and Mr. M.Tosif I Shaikh, faculties of the subject because they helped us to going at visit place and gave proper guidance and explained for the practical based approach learning to students.

INTRODUCTION

A.Y. DADABHAI TECHNICAL INSTITUTE, KOSAMBA College is trying to reduce the gap between current demands of industry with the academic institution for upcoming future of our nation.

The main agenda for arranging this visit was to enhance the practical and field knowledge of the students, to relate the theoretical concepts with real time problems and solutions, and most importantly to give them the exposure to canal construction, cross – section and head regulator structure wherein they are going to be eventually working as civil site engineers.

Department of Civil Engineering, A. Y. Dadabhai Technical Institute, Kosamba organized a site visit for 3rd semester (2nd Year) Diploma students, on 24th December, 2022.

- Name of the subject: Hydraulics
- Date & Day :24/12/2022 & Saturday (12:00 AM Onwards)
- No. Of Students: 24 Students
- Name of the Faculties: Mr. Shahid Patel and Mr. M.Tosif I. Shaikh

The objective of this Canal visit is for students to acquire knowledge through practical aspects like interaction, working methods, and employment practices. It also provides an exposure to students about the practical working environment and awareness about industrial practices. The visit to canal helped the students to acquire knowledge of Hydraulics.

A BRIEF REPORT ON AN EDUCATIONAL VISIT TO CANAL

Canal irrigation is the most important form of irrigation in India. It is cheaper. About half of 165.97 lakh hectare land was irrigated by canals during 2008-09 from which half of irrigated land concentrated in the Northern plain. If we calculate it state wise, then 91.72 % of irrigated area in Jammu Kashmir, 66.24 % in Chhattisgarh, 64.7 % in Odisha, 44.28% in Haryana and 34.63 % in Andhra Pradesh is irrigated by canals. The maximum part of the total irrigated area of the country by canals is in Uttar Pradesh. Other major states where irrigation is done by canals are Madhya Pradesh, Andhra Pradesh, Haryana, Punjab and Bihar. There are two types- Inundation Canal and Perennial Canals.

- **Inundation Canals:** They are taken out from the rivers and do not have any kind of weir at their head to regulate the flow of water from the river. These types of Canals are found on the Sutlej-Ganga plains and Brahmaputra valley.

- **Perennial Canals:** These canals maintain its flow of water throughout the year even during winter season and draw their water either from rivers or from reservoir of the river projects. A weir is built below the intake of the canal, the intake itself being regulated by sluice gates.

The modern canal system was mainly a product of the 18th century and early 19th century. It came into being because the Industrial Revolution (which began in Britain during the mid-18th century) demanded an economic and reliable way to transport goods and commodities in large quantities.

TYPES OF CANALS

1. Main canal
2. Branch canal
3. Major distributary canal
4. Minor distributary canal
5. Field canal

- **Main Canal**

The main canal takes off directly from a river or reservoir. It carries water in large amounts to feed the branch and distributary canals. Due to conveying of very high discharge through the main canal it is not recommended to do direct irrigation from it.

- **Branch Canal**

The branch canal takes off from main canals at regular intervals. These canals supply water to major and minor distributary canals. The discharge of the branch canal is generally over 5m³ /sec. In the case of branch canals also, direct irrigation is not recommended unless their water carrying capacity is very low.

➤ Major Distributory Canal

Major distributory canal takes off from the branch canal or in some cases from the main canal. They supply water to minor distributaries and field channels. A canal is said to be major distributory when its discharge lies between 0.25 to 5 m³ /sec.

➤ Minor Distributory Canal

Minor distributory canal takes off from major distributaries and sometimes directly from branch canals depending upon the discharge of canals. Their discharge is generally below 0.25 m³ /sec. These canals supply water to the field channels.

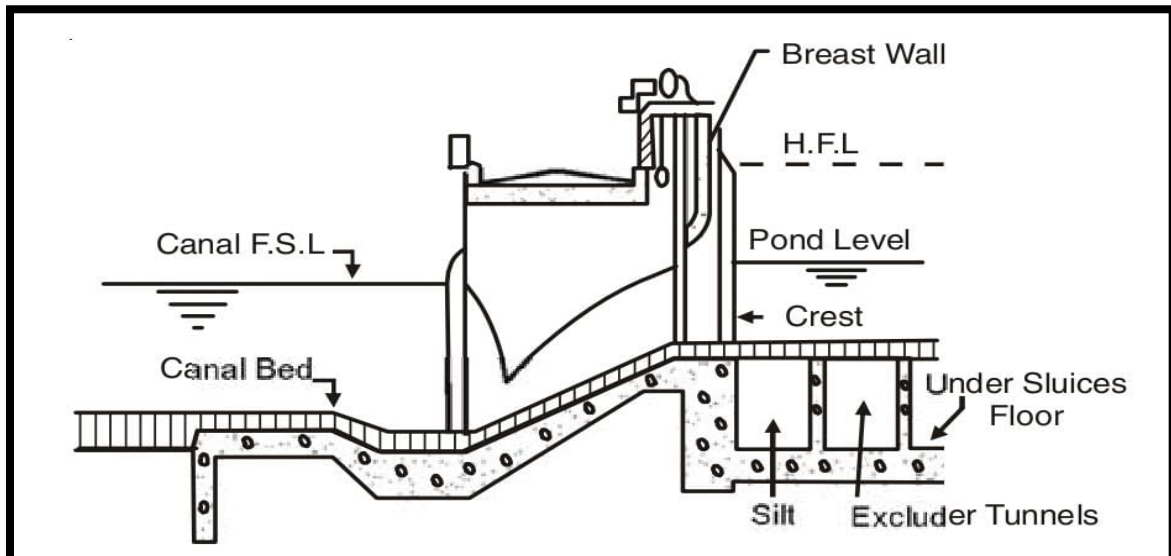
➤ Field Channels

Field channels also known as watercourses are small channels excavated by cultivators in the irrigation field. These channels are fed by the distributory canals and branch canals through canal outlets.

At the site Mahuvej, there are three different types are available such as main, branch and field channel, all channels are trapezoidal in cross section.

CANAL HEAD REGULATOR SYSTEM

It is a structure at the head of canal taking off from a reservoir may consists of number of spans separated by piers and operated by gates. Regulators are normally aligned at 90° to the weir. Up to 10" are considered preferable for smooth entry into canal. These are used for diversion of flow.



- The functions of canal head regulator are:
1. To admit water into the off taking canal.
 2. To regulate the supplies into the canal.

3. To indicate the discharge passed into the canal from design discharge formula and observed head of water on the crest.
4. To control the silt entry into the canal. During heavy floods, it should be closed otherwise high silt quantity will leave to the canal.

Types of Canal Head Regulator

1. Still pond regulation:
2. Open flow regulation
3. Silt control devices

1. Still Pond regulation:

- Canal draws water from still pond.
- Water in excess of canal requirements is not allowed to escape under the sluice gates.
- Velocity of water in the pocket is very much reduced; silt is deposited in the pocket.
- When the silt has a level about 1/2 to 1m below the crest level of Head Regulator, supply in the canal is shut off and sluice gates are opened to scour the deposited silt.

2. Open flow regulation

- Sluice gates are opened and allow excess of the canal requirement.
- Top water passes into the canal.
- Bottom water maintains certain velocity in the pocket to keep the silt to remain in suspension.
- Canal is not closed for scouring the silt.

3. Silt control devices

- Silt control at head works can be controlled by Providing a divide wall to Create a trap or pocket.
- Create scouring capacity of under sluices by concentrating the currents towards them.
- Paving the bottom, the approach channel to reduce disturbance because due to disturbance sediment remains in suspension.

VISIT PHOTOS



CONCLUSION

The main agenda for arranging this visit was to enhance the practical and field knowledge of the students, to relate the theoretical concepts with real time problems and solutions and most importantly to give them the exposure to canal construction, cross – section and head regulator structure wherein they are going to be eventually working as civil site engineers.

THANK YOU