Vidya Pratishthan's Kamalnayan Bajaj Institute of Engineering & Technology, Baramati

DEPARTMENT OF CIVIL ENGINEERING

2022-23

Sem I

Site Visit Report

Subject: Fluid Mechanics

Class: SE Civil Engineering

General Details:

The Department of Civil Engineering of Vidya Pratishthan's Kamalnayan Bajaj Institute of Engineering and Technology(VPKBIET) has organized a one-day site visit to Krushna Bhima Barrage. The visit was in accordance with our curriculum. The continuous guidance of faculty members & On-Site Engineer's made the site visit a Grand success.

- LOCATION :Uddhat Barrage
- SITE VISITED : NIRA BHIMA TUNNEL LINK 5
- DAY AND DATE : SATURDAY, 10-12-2022
- CLASS AND BRANCH : SE-CIVIL
- NUMBER OF STUDENTS : 70
- ACCOMPANYING FACULTY : MS.J.C.BHONG & MS P.BOKEY
- OBSERVATION ON SITE : INSPECTION OF BARRAGE

Krushna Bhima stabilization project link – 5 under Uddhat Barrage Tal. Indapur Dist. Pune

Salient Features of the project

1	Place of Barrage	
	a) Village	Tavashi
	b) Taluka	Phalan \ Baramati \ Indapur
	c) District	Satara \ Pune
	d) State	Maharashtra
2	Name of River	Nira River
3	Barrage Type	Gate Operated Concrete Barrage
4	Water Stock	2.67 Million CC
5	Water Level	508.89 m
6	Length of barrage	195.00 m
7	Height Of Barrage	17.06 m
8	Doors	15 X 6 m of 10 Gates 3.5 X 6 m of 3 Gates
9	Numbers of column	14
10	Height of Pillars	15.06 m
11	Column Length	15.30 m
12	Submerged Areas	29.40 hectars

Barrage:

A barrage is a type of low-head, diversion dam which consists of a number of large gates that can be opened or closed to control the amount of water passing through. This allows the structure to regulate and stabilize river water elevation upstream for use in irrigation and other systems. The gates are set between flanking piers which are responsible for supporting the water load of the pool created.

Description:

The conceptual flood discharge of Udhdhat Barrage has been assumed as per 1100 year flood cost and this flood discharge has been checked by the Superintending Engineer, Central Sankalp Chitra Organization (Water Planning), Nashik and accepted by the office to be correct. To him the Chief Engineer (Jers), Water Resources Department, Aurangabad vide letter no. Tansha-6/4456, dt. Approved vide 07/5/2010.

Uddhat Barrage, Indapur Dist Pune. This component work is included in Krishna Bhima Stabilization Project (LIC-5) and is part of Krishna Marathwada Irrigation Project. It is planned to release water from Lick-5 of Krishna-Bhima Stabilization Project to Ujani Reservoir through Nira-Bhima Link Tunnel from upstream of Uddhat Barrage. For that, the main purpose of Uddhat Barrage is mainly to be done as Diversion Barrage. The original bid price of Uddhat barage is Rs 67.37 crore and the accepted tender price is Rs 79.86 crore. Commencement of work of the said barrage order no. d. 17/08/2009 Shri Hari Associates Pvt. Ltd. has been given to Aurangabad.

The general design proposal for Uddhat Barrage was first submitted to the Central Sankalp Chitra Association, Nashik for evaluation. The above plan was approved by the Superintending Engineer (Magh), Central Sankalpchitra Sanghatana, Nashik vide letter no. Msans/ Madh/Math-2/Ud8/2/11/2014 dt. Vetting done on 21/01/2014.

Information Of Barrage Gate:

There are manually opened vertical lifting gates which are 6m long and are operated by 25 HP motor. To store water in rainy season by closing gate and excess water is discharged open channel through tunnel. Students of SE Civil Engineering visited the stage 1 i.e zero point or start point construction site of the project as shown in fig 1. The main purpose of the Uddhat barrage is to store water on the U/S of the barrage and to divert the stored water to the other reservoirs through canals. Canal construction is in the developing stage. Canals are being constructed in open cut and tunnel form in 5 different stages as shown in fig 2. The canal site where hard strata is available, tunnel are constructed and the site where strata is not suitable for tunnels, the cut and cover type canals are constructed as shown in fig 3.

Fig1: Construction site of Barrage

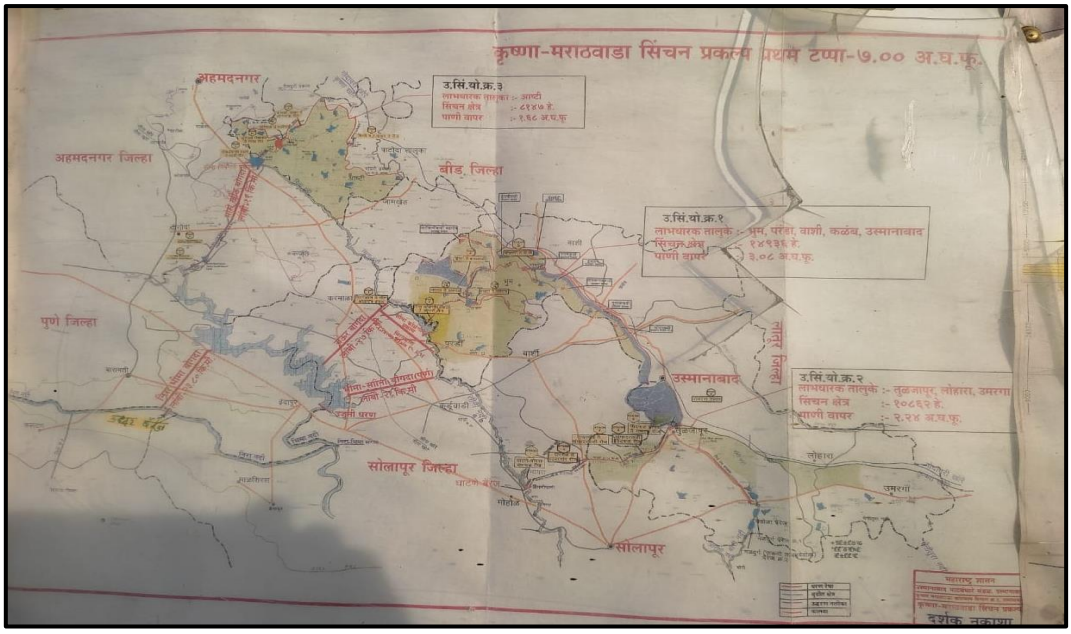

Fig 2: Map of Stages of River Linking Project

Fig. 3: Construction Site of Cut and Cover Type Canal

Construction Works

The actual excavation started at the end of February 2018 with great efforts after land acquisition for the dam line of the Udhdhat barrage, which was closed since 2009 due to the strong opposition of the farmers to the work of Link-5 under the Krishna Bhima Stabilization Project. At present the construction works are completed and the filling works are in progress on both sides and the mechanical works are at present 12 pylon. 11 walkway. 10 service gate (15XEm), 3 small service gate (3.5X6m), 11 Hoist Bridge has

been fabricated and pylon, walk way. service gate on actual working area. Hoist Bridge Erection has been completed. All the remaining works are planned to be completed by the end of March-2022. Fig 4, 5 and 6 shows the details of doors of barrage.

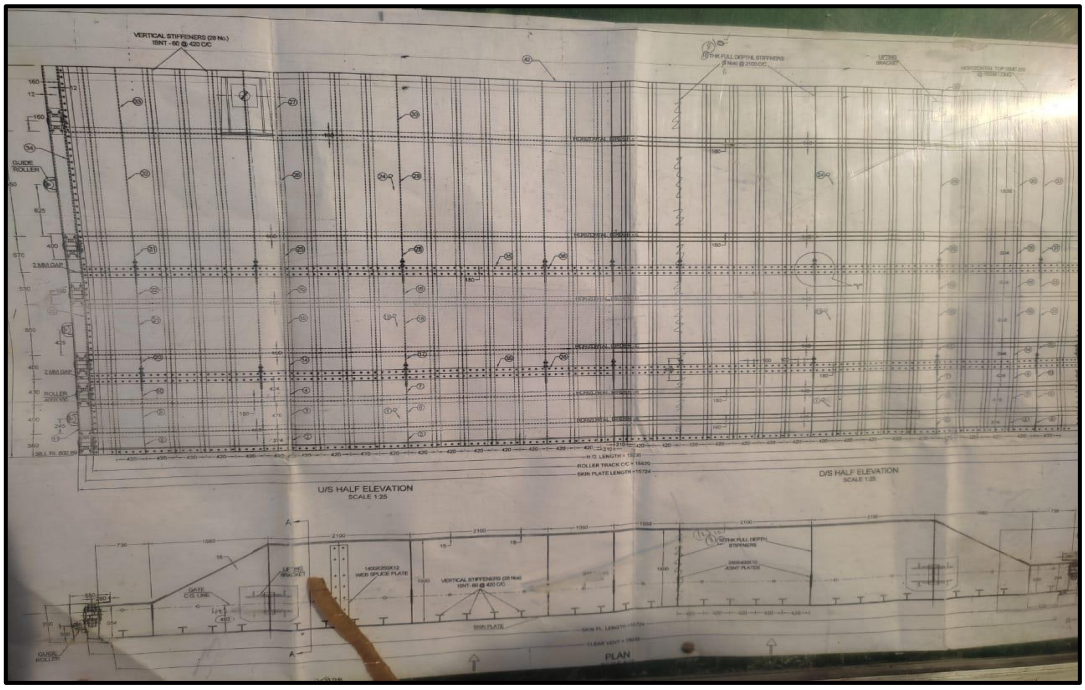

Fig 4: Details of Barrage

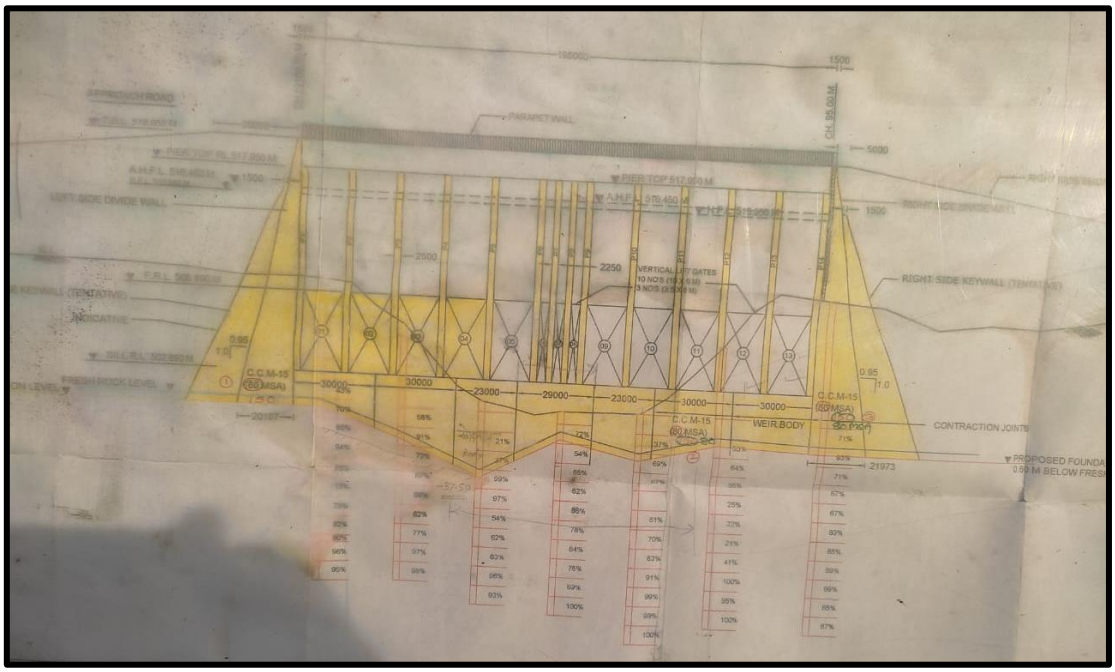

Fig 5: Cross Section of Gates at Uddhat Barrage

Fig 6: Photo view of Gate at Uddhat Barrage

CONCLUSION

1. From All information we have gathered we are glad to conclude our site visit.
2. We have learned that, how the real-time work has been done by the On-Site Engineers.
3. We were fascinated by the spectacular structure of the tunnel.
4. Hence, we can assume that how much knowledge and hard work is been done the Engineers.

Name & Sign. of Course Coordinator
Ms. P. A. Bokey