NANDHA ENGINEERING COLLEGE
(AUTONOMOUS), ERODE-52

Department of Civil Engineering

FIELD VISIT REPORT

LBP CANAL,
VAIKKALMEDU, PERUNDURAI

20.06.2024

Prepared by

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About Lower Bhavani Project Canal

Lower Bhavani Project (LBP) Canal is a 201-kilometre (125 mi) long irrigation canal which runs in Erode district in Tamil Nadu, India. The canal is a valley-side contour canal, fed by Bhavanisagar Dam and irrigates 2.07 lakh hectares of land. The main canal feeds Thadapalli and Arakkankottai channels which irrigate the cultivable lands.

Opposition to Concrete Lining

In 2013, the government of Tamilnadu took up the project of the concrete lining of the LBP canal, however, it was dropped after farmers heavily opposed it. Now again after several years, the government has planned to start this project, by just referring to renovation works which include concrete lining. According to many farmers, if the project gets started, it will severely affect the recharge of underground water, thereby posing a serious threat to the whole agriculture ecosystem and domestic water supply system and directly affecting lakhs of farmers and ordinary citizens living in the districts of Erode, Tiruppur and Karur. According to them, groundwater will not be replenished and the entire region will be turned into a desert.

Some farmers support concrete lining, but majority of farmers living in this region oppose concrete lining. These districts receive low rainfall and are classified as semi-arid regions and this canal is the only source of water for all the people living here. Several Panchayats and Municipalities depend on this canal for domestic water supply. Massive demonstrations and protests were also held against this concrete lining.

About the Visit

On June 20, 2024, final year students from the Civil Engineering Department, accompanied by Mr. V. Aravind, Assistant Professor, visited the canal lining work at the LBP canal in Vaikkalmedu, Perundurai.

During the visit, canal lining work was actively being carried out. The students observed the reinforcement details of various concrete structures, such as retaining walls and drain culverts.

Retaining Wall

A retaining wall for canal lining is essential to maintain the integrity of canal banks, preventing erosion, seepage, and collapse. These walls support the canal structure by withstanding hydraulic loads from water pressure, especially during periods of high flow. The design of such walls considers soil conditions, ensuring stability and proper foundation.

Canal Retaining Wall

The construction of a retaining wall for canal lining starts with site preparation, including surveying and soil analysis. Excavation follows to create a stable base. A robust foundation, usually of reinforced concrete, is laid first. The wall is then built using materials like concrete blocks, steel, stone, or gabions. Proper drainage is integrated with pipes, gravel backfill, and weep holes to prevent water buildup. Careful backfilling supports the wall's stability. Throughout the process, regular inspections ensure quality and adherence to design. Upon completion, the wall is inspected and maintained regularly to protect the canal banks from erosion and collapse.

Drain Culverts

Drain culverts facilitate the passage of water beneath roads, pathways, and embankments, ensuring smooth drainage and reducing the risk of water logging around the canal.

IV year Civil Engineering students at drain culvert site on 20.06.2024

During the visit, students observed the reinforcement details of drain culverts, noting the size and placement of rebar, the use of haunch bars, the grades of concrete used, and the quality of workmanship. They examined the specific sizes of rebar utilized and how they were arranged within the concrete. They also observed the incorporation of haunch bars, which provide additional support at the corners of the culvert.

Outcome:

At the end of the visit, students were able to gain knowledge on

(i) Advantages and drawbacks of canal lining

(ii) Reinforcement details of retaining walls and drain culverts

POs & PSOs Mapped:

PO1, PO2, PO3, PO6, PO7, PO12 ***PSO1, PSO2***