SHAHAJIRAO PATIL VIKAS PRATISHTHAN'S

S. B. PATIL COLLEGE OF ENGINEERING (Diploma), INDAPUR, DIST: PUNE

ACA – R - 49	**Field Visit Report (RBT)**	Academic Year: 2025-26
Rev : 01		Semester: IV

Visit to Baramati Railway Station

Institution: S. B. Patil College of Engineering (Diploma), Indapur.
Department: Civil Engineering
Class: Second Year (SY) Civil Engineering
Subject: Railway, Bridge & Tunnel Engineering
Date of Visit: 6 March 2026
Location of Visit: Baramati Railway Station

- **Faculty Coordinators:**

- Prof. Gaikwad A. S.
- Prof. Dhere P. S.

- **Number of Students:**

- SY Civil Engineering: 23
- FY Civil Engineering: 17
- **Total Students:** 4

➢ Introduction

The Department of Civil Engineering of S. B. Patil College of Engineering organized an educational field visit to Baramati Railway Station on **6 March 2026** for the students of **Second Year Civil Engineering** under the subject **Railway, Bridge & Tunnel Engineering**.

The visit aimed to provide practical exposure to railway infrastructure, railway track components, signaling systems, and passenger station facilities**. Prof**. **Gaikwad A. S.** and **Prof. Dhere P. S.** guided the students throughout the visit and explained various engineering aspects related to railway construction and maintenance.

During the visit, the students actively observed the railway track structure, platform arrangement, signaling equipment, drainage system, and safety measures used in railway operations. The visit helped students connect theoretical concepts learned in the classroom with real-life railway engineering practices.

➢ Objectives of the Visit

The visit aimed to achieve the following objectives:

1. To study the basic components of railway tracks.
2. To understand the design and construction of railway stations.

3. To observe railway signaling and train control systems.
4. To understand railway safety measures and operational procedures.
5. To study the arrangement of platforms and passenger facilities.
6. To understand the role of civil engineers in railway infrastructure development.
7. To gain practical knowledge related to the subject **Railway, Bridge & Tunnel Engineering**

➢ Overview of Baramati Railway Station

Baramati Railway Station serves as an important transportation hub for the Baramati region. The station connects the city with other major railway networks and supports both passenger and limited goods transportation.

The station includes several civil engineering structures such as platforms, railway tracks, drainage systems, passenger waiting areas, ticket counters, and signaling equipment. The station management ensures safe and smooth train movement through proper signaling and communication systems.

The station also provides various facilities such as seating arrangements, public announcement systems, ticket booking counters, and passenger information displays.

➢ Observation of Railway Track Components

During the visit, students carefully observed the major components of the railway track.

❖ Rails

Rails form the main running surface for trains. Engineers design rails using high-strength steel to withstand heavy loads and continuous train movement. The rails guide train wheels and ensure smooth travel along the track.

❖ Sleepers

Sleepers support the rails and maintain the correct gauge distance between them. The station uses concrete sleepers because they provide higher strength, durability, and stability compared to wooden sleepers.

❖ Ballast

Ballast consists of crushed stone placed below and around sleepers. Ballast distributes the load of trains to the ground and provides proper drainage. It also keeps the track stable and prevents vegetation growth.

❖ Formation and Subgrade

The formation layer supports the entire railway track structure. Engineers prepare this layer carefully to ensure adequate strength and proper drainage

➢ Platform Structure and Layout

Students observed the design and arrangement of platforms at Baramati Railway Station.

Engineers construct platforms at an appropriate height to allow passengers to safely board and exit trains. The platforms include features such as:

- Platform surface with anti-slip flooring
- Shelter structures for passenger protection
- Seating arrangements
- Lighting facilities
- Signboards and information boards

The platform layout ensures safe passenger movement and efficient train operations.

➢ Railway Signaling System

Railway signaling plays a crucial role in controlling train movements and preventing accidents.

Students observed different types of signals installed near the railway track. These signals provide instructions to train drivers regarding stopping, slowing down, or proceeding ahead.

Railway authorities use signaling systems to maintain safe distances between trains and to control traffic on railway lines. The signaling system works together with communication systems to ensure efficient train operation.

➢ Drainage System

Civil engineers design effective drainage systems in railway stations to prevent water accumulation near the tracks. Proper drainage protects the track foundation and increases the life of railway infrastructure.

Students observed drainage channels constructed along the tracks and platforms. These channels help remove rainwater quickly and prevent damage to the track structure.

➢ Safety Measures

The railway station follows several safety measures to ensure passenger and operational safety.

These measures include:

- Warning signals and indicators
- Platform safety markings
- Public announcement systems
- Controlled entry and exit points
- Proper lighting arrangements

Railway staff continuously monitor train movement and passenger activity to maintain safety.

➢ Role of Civil Engineers in Railway Infrastructure

Civil engineers play an important role in planning, designing, and maintaining railway infrastructure.

Their responsibilities include:

- Designing railway tracks and station layouts
- Constructing platforms and station buildings
- Maintaining track alignment and stability
- Designing bridges and tunnels in railway routes
- Ensuring proper drainage and foundation systems

The visit helped students understand how civil engineering principles apply to railway transportation systems.

➢ Learning Outcomes

From this field visit, students gained practical knowledge about:

- Railway track components and construction
- Platform design and station infrastructure
- Railway signaling systems
- Railway safety practices
- Practical applications of Railway Engineering concepts

The visit improved students' understanding of railway engineering and provided valuable field exposure.

➢ Conclusion

The field visit to Baramati Railway Station on **6 March 2026** proved highly informative and beneficial for the students of **Second Year Civil Engineering** of S. B. Patil College of Engineering.

Prof. Gaikwad A. S. and **Prof. Dhere P. S.** guided the students effectively and encouraged them to observe railway infrastructure from an engineering perspective. The visit helped students gain practical knowledge related to the subject **Railway, Bridge & Tunnel Engineering** and understand the real-world application of civil engineering concepts.

Such field visits play an important role in enhancing the technical knowledge and practical understanding of engineering students.

Visit Coordinator
Prof.Gaikwad A.S.

HOD
Prof.Gaikwad A.S.