DEPARTMENT OF CIVIL ENGINEERING
V.R. SIDDHARTHA SCHOOL OF ENGINEERING
SIDDHARTHA ACADEMY OF HIGHER EDUCATION
(An Institution Deemed to be University)
(Under Section 3 of UGC Act, 1956)
Kanuru, Vijayawada – 520007, AP. www.vrsiddhartha.ac.in

in association with

IGS GUNTUR VR Siddhartha Engineering College Student Chapter

Field Visit Report on Pile foundations & Pile Caps

Date of Visit: 21/10/2025

Year and Section

IV/IV B.Tech – Civil Engineering

Venue: Heal School, Thotapally.

Organized by

Department of Civil Engineering,
V. R. Siddhartha School of Engineering, Vijayawada.

Faculty Coordinator

Dr. G. V. Rama Subba Rao

Objective of the Visit:

The main objective of this field visit was to provide students with practical exposure to the construction techniques of piles and pile caps, which are essential components in modern reinforced concrete foundations. The visit aimed to bridge the gap between theoretical learning and real-world engineering practices by allowing students to observe the installation of deep foundation systems and understand their significance in supporting heavy structural loads.

Activities During the Visit: Pile and Pile Cap Construction

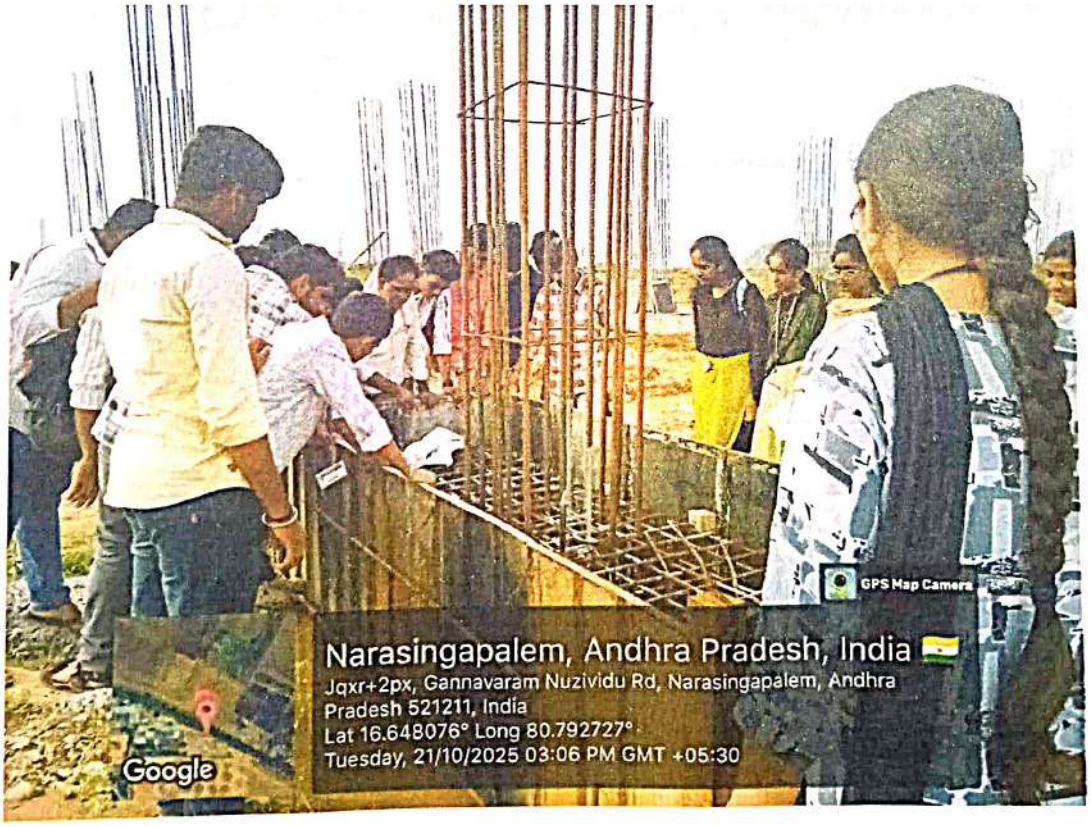
During the visit, the students observed and learned the following key stages involved in the construction of piles and pile caps, which form the deep foundation system of a structure:

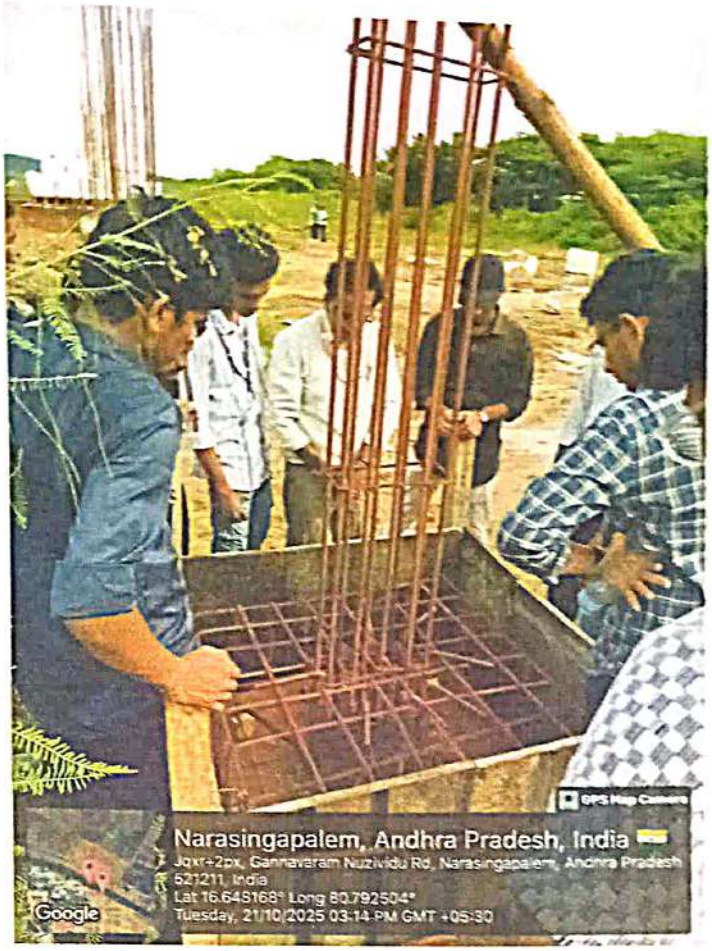
1. Site Preparation and Setting Out
    - Marking the pile locations based on the foundation layout drawings.
    - Ensuring proper alignment and spacing between piles using surveying instruments.
2. Pile Boring or Driving
    - Demonstration of bored cast-in-situ piles using rotary drilling rigs or driven piles using hydraulic hammers.
    - Observation of soil strata during boring and recording bore log data for quality control.
3. Reinforcement Cage Placement
    - Lowering of prefabricated reinforcement cages into the bored holes.
    - Ensuring correct cover and vertical alignment of the cage to maintain structural integrity.
4. Concreting of Piles
    - Pouring concrete into the borehole using tremie pipes to avoid segregation.
    - Continuous monitoring to prevent cold joints and ensure uniform compaction.
5. Pile Head Cutting and Preparation
    - Chipping of the pile head to expose reinforcement bars for integration with the pile cap.
    - Cleaning and leveling the pile top surface for proper bonding.
6. Pile Cap Construction
    - Fixing of shuttering and reinforcement for the pile cap as per structural drawings.
    - Placement of concrete and proper curing to ensure strength development.
    - Discussion on load transfer from the superstructure to the piles through the pile cap.

Learning Outcomes:

After the visit, students gained hands-on understanding of:

- The complete sequence of pile and pile cap construction.
- Importance of precision in layout, reinforcement detailing, and concrete placement.
- Safety measures and site protocols during deep foundation work.
- Practical insight into how piles support structures in weak or expansive soils by transferring loads to deeper, stable strata.


GPS Map Camera
Narasingapalem, Andhra Pradesh, India
Jqxr+2px, Gannavaram Nuzividu Rd, Narasingapalem, Andhra Pradesh 521211, India
Lat 16.648076° Long 80.792727°
Tuesday, 21/10/2025 03:06 PM GMT +05:30
Google


GPS Map Camera
Narasingapalem, Andhra Pradesh, India
Jqxr+2px, Gannavaram Nuzividu Rd, Narasingapalem, Andhra Pradesh 521211, India
Lat 16.649168° Long 80.792504°
Tuesday, 21/10/2025 03:14 PM GMT +05:30
Google


GPS Map Camera
Narasingapalem, Andhra Pradesh, India
Jqxr+2px, Gannavaram Nuzividu Rd, Narasingapalem, Andhra Pradesh 521211, India
Lat 16.648174° Long 80.792453°
Tuesday, 21/10/2025 03:14 PM GMT +05:30
Google