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FIELD INVESTIGATION AND PILE DESIGN FOR PIER 28 OF BHOPAL METRO RAIL PROJECT

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ABSTRACT

Before the start of the construction there are a lot of field investigations and tests that have to be performed on the surface for proper safety and stability of the elementary structure for the Urban Public Transport. The primary goal of any construction process is that the construction should be safe and technically optimized for everyone at every stage since all civil engineering project are done on the surface of the earth, Geotechnical Engineering has to play a very important role in maintaining the safety and security of the structure and hence the people using and constructing the structures. The geotechnical work is done before the start of every construction project at every site so as to know what the structure is built on and its various physical and engineering properties.

The work presented in this report is a part of detailed geotechnical investigations carried out on field and in laboratory during the construction process of the implementation of Urban Metro Rail in the city of Bhopal. The project comprises of various tests on soil and rocks as per the standard code guidelines. The report has been made on the geotechnical results of these tests for Pier-28 which comes under Line 2 of the project roadmap with an estimated length of 15 km.

The report is based on the on field observations and tests with the geotechnical test requirements according to the Standard codes. Pile penetration ratio is crucial for boring of the foundation and is calculated in the Annexure A and calculations for the lateral and axial stress for the pile is also done which is attached in the Annexure B of this report.

KEYWORDS:

SPT, Unconfined compressive strength, Core Recovery, Rock Quality Designation, Pile Penetration Ratio (PPR), Bearing Capacity of the pile.