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INTRODUCTION

In today's large viaduct projects in India the implementation is increasingly being done by:

- (a) PPC – Public Private Partnerships (such as 'Build –Operate-Transfer' bids)
- (b) EPC – Engineering Procurement Contracts (such as 'Design–Construct' bids)

This paper discusses the construction technologies used in recent major viaduct projects being implemented in the country

BASIC REQUIREMENTS

When design engineering forms a part of the overall contract, only a seamless integration of design and construction can lead to proper results. The design not only has to satisfy the functional requirements during the construction and the service stages, but also has to address the questions as to how the construction agency can use its existing resources and those proposed to be acquired for the project in an optimal manner. The plant and equipment proposed to be acquired must be assets that, with little or no modification can be utilized for future projects that the construction agency plans to undertake in the coming years. Construction agencies with staying-power in the field therefore look to the future and have the ability to predict what would be the 'flavour of the times' in the years ahead.

The short period of construction and the seriousness with which delays are now regarded has also brought about a change in the construction methodologies. Precasting the superstructure has become more or less mandatory, so that this activity can proceed simultaneously and independent of the foundations and substructure being executed in-situ.

Invariably, the large viaduct projects require a centralized precasting facility often located 20-30 km away from the site of erection. The construction technologies must be geared for transportation of the precast elements to the site and eventual erection without too much disturbance to the existing traffic.

Standardisation of structural elements in large viaduct projects is important from the point of view of reducing costs of formwork and moulds.

Construction technologies being adopted for recent large viaduct projects via the PPC/EPC route are discussed in the sections that follow.