Small Segments Employed For Flyover Of Delhi

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ABSTRACT

Precast Segmental construction is thought of as being economically viable only for large projects due to high investments required to develop the infrastructure for casting, handling and erection of precast segments. The construction of a flyover in an urban environment is not always welcomed by the society because of traffic disturbance & construction delays, nuisance caused during concreting & erecting the formwork at site and noise & visual pollution. It is sometimes also not a pleasant addition to the surroundings due to poor architectural features of the flyover.

The superstructure of precast, prestressed segmental flyovers at 6 major intersections on the Ring Road and Outer Ring Road consists of two nos. individual 'T' shaped solid spine beams per carriageway with high span to depth ratio of 27.6 for the main span Fig.1. There are thus four rows of 'T' shaped solid spine beams for the two independent carriageways. Each row of spine beam constitutes one sub-bridge which is erected independently. The two sub-bridges of each carriageway are joined together with 600mm wide cast-in-situ longitudinal stitch followed by transverse prestressing at deck slab level. The 158m long viaduct portion of the flyovers has a five span continuous structure with individual spans of 26.1+31.05+41.4+31.05+26.1m. Both the carriageways have 9m wide carriageways with 500mm wide crash barriers on either side. Total length of the flyovers including reinforced soil wall approaches is about 500m. Fig.2 depicts the General Arrangement of the flyovers.

Fig.3 shows the completed elliptical piers with architecturally textured surface before start of erection of superstructure.

Fig.4 shows the 4 sub-bridges constructed independently using a light erection truss of only 52t.

Fig.1: Main Span with Span/Depth Ratio of 27.6

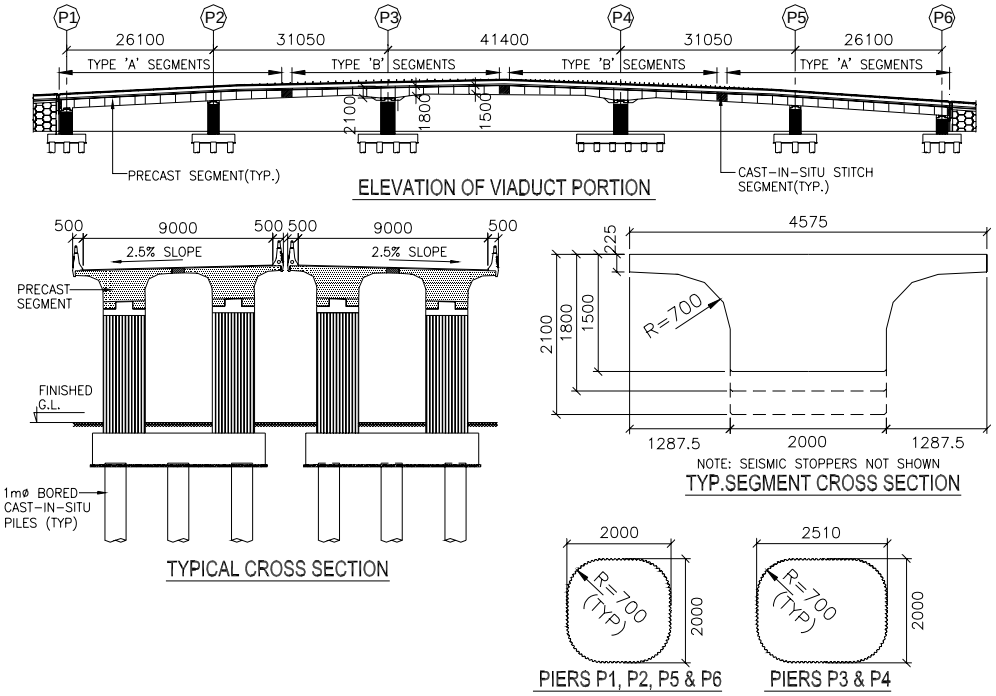

Fig.2: General Arrangement of the Flyover

Fig.3: Elliptical Piers with Textured Surface

Fig.4: Erection of Various Stages Completed