Media Release
July 30, 2017

Malakpet Metro ROB completed in 25 days – a new engineering record in India

The main span of the Malakpet Metro Rail over bridge (ROB) for a length of 164 ft was constructed in just 25 days during this month, which is a new record in India in ROB construction, declared MD, HMRL Mr.NVS Reddy. This is a result of meticulous planning and a lot of high level railway bridge engineering deliberations by several veterans in the field, he stated.

"Be very careful about Malakpet ROB. This can be very tricky as the location is a high risk area from engineering point of view, with the presence of an open nala, Malakpet railway station, and a narrow rail under bridge through which huge volumes of road traffic passes 24 hours a day", Mr SK Jain, former Member Engineering, Railway Board and consultant for the project advised Mr. NVS Reddy. "I have never seen this kind of chaotic traffic in Delhi. We need to be extremely cautious in building these Metro ROBs in Hyderabad", was the expert comment of another Delhi Metro bridge engineering veteran Mr CBK Rao, who was brought in as another technical advisor by MD, HMRL.

With a total length of 394 ft (120 mts), the Malakpet Metro ROB was on a curve and it had to be built at a height of about 58 ft over the narrow portion of NH 65 and over an already existing railway bridge adjacent to Malakpet railway station. As in the case of the recently completed Begumpet ROB, here also "Bridge Builder" method of construction was used and two huge 100 ton bridge builders were mounted on to the already built Metro viaduct on both sides of the ROB i.e., on Dilsukhnagar side and Nampally side. The total bridge was built in three portions with the main span length being 164 ft and both ends being 98 ft and 131 ft on Dilsukhnagar and Nampally sides, respectively. The bridge conditions were simulated in the Uppal casting yard and the segments were pre-cast in a "match casting" mode and these precast segments were brought to Malakpet and launched one after one with the help of heavy duty crane and the bridge builders in a sequential manner from both sides.

The main portion of the Metro ROB over the existing Malakpet railway bridge was constructed with 12 precast segments. Each precast segment was lifted by heavy duty cranes and placed on the previously laid trolley on top of the deck slab and held by the bridge builder with the help of a winch of 80 ton capacity. The

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segment was then rotated, manoeuvred and lowered into its specific slot in front of the already erected viaduct and aligned, using temporary beams, stuck with special glue and stung with special metallic cables. Once the segment was made an integral part of the viaduct, the segment itself became the base to move the bridge builder forward to launch the next segment in a similar fashion. The launching of these segments could be done only after midnight in a 3 hour block period given by the railways during which the train operations were suspended each time.

Appreciating the engineering design and execution skills and the dedication with which the L&T bridge engineering team led by two Railway bridge engineers Mr KM Rao and Mr MY Kondalu, MD, HMRL stated that it was a remarkable engineering achievement in Metro Rail construction in the country.

Salient features

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Length of ROB	394 ft
Height of ROB	58 ft
Length of the central span (over the Railway tracks)	164 ft
Length of end spans	98 ft & 131 ft
Weight of each segment	45 tons
Length of Bridge Builder	45 ft
Width of Bridge Builder	17 ft

Public Relations Officer
Hyderabad Metro Rail Limited
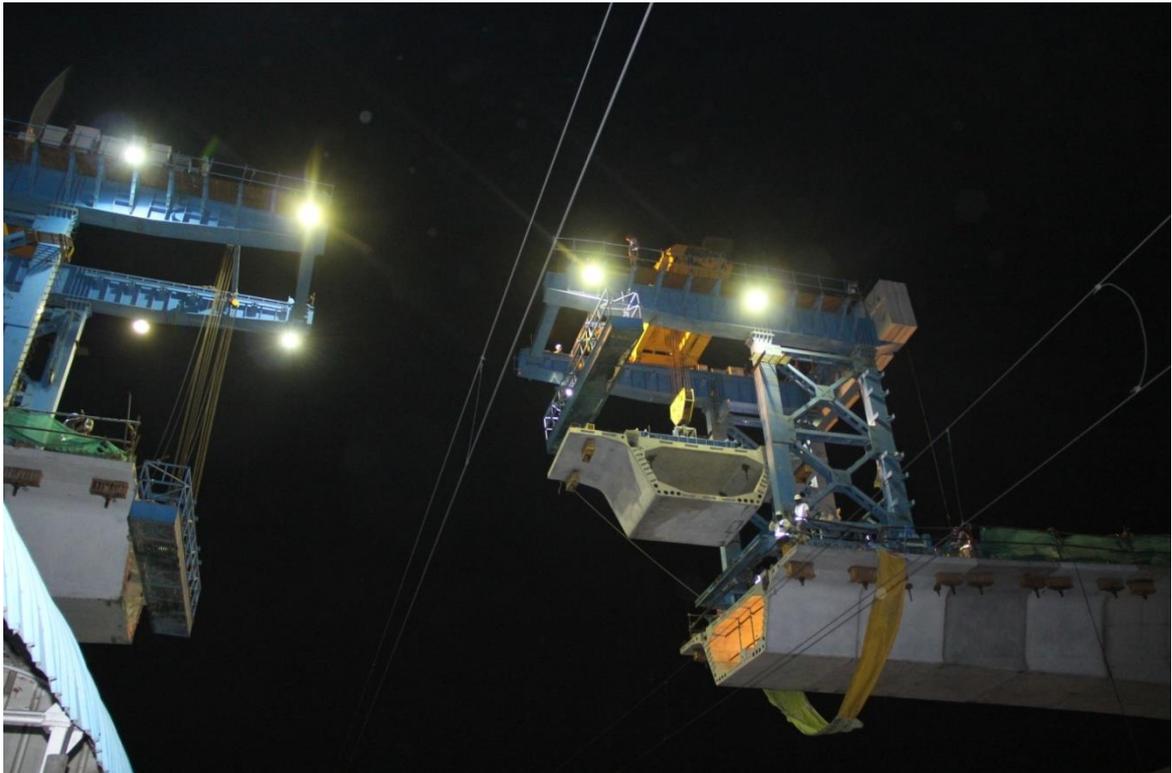
Pre cast Segment being lowered and anchored to the existing end of the viaduct at Malakpet ROB

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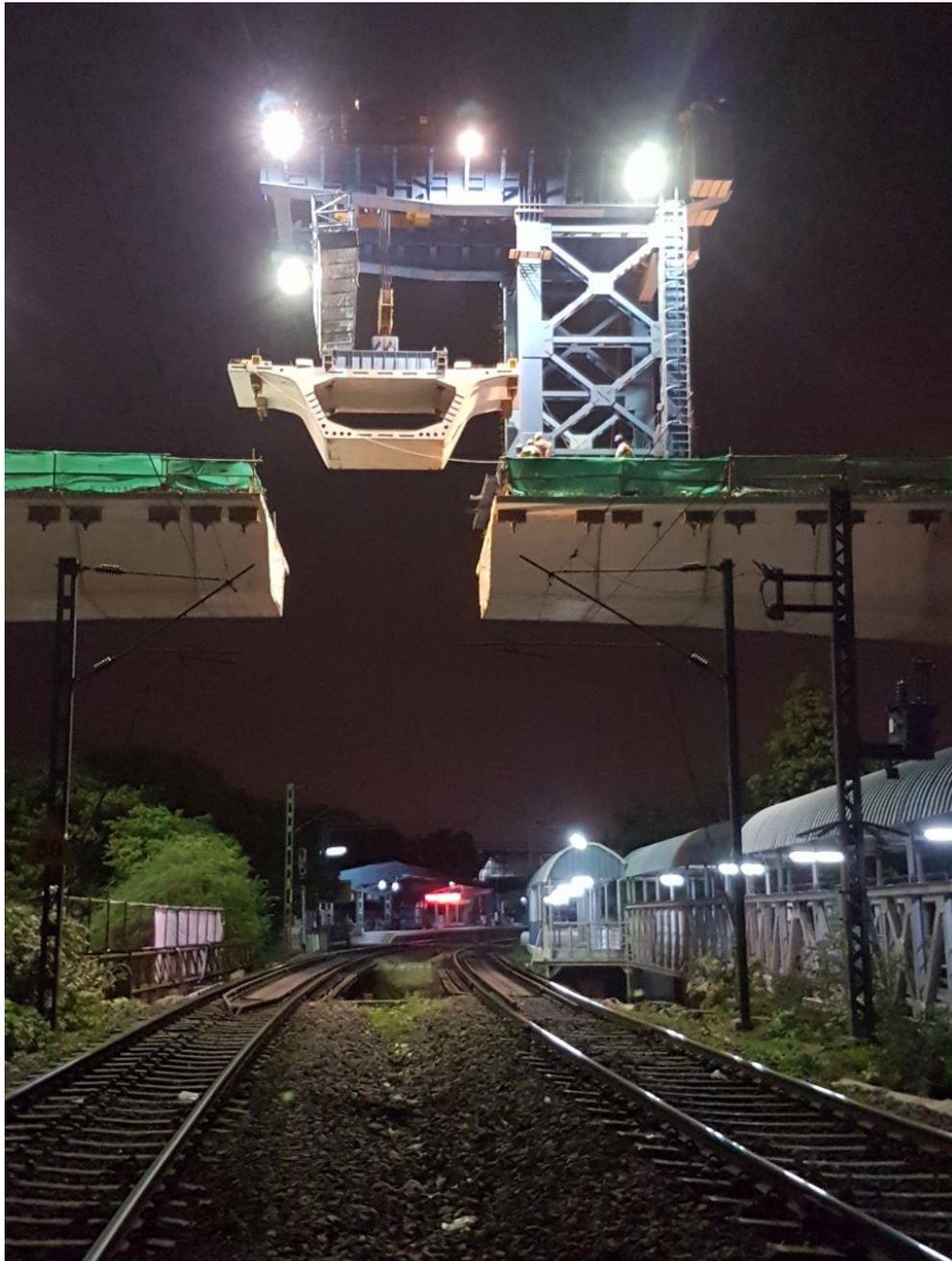
Malakpet Metro ROB under construction over the Railway tracks and Railway station using 'Bridge Builder'

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