

# Pasupati Bridge - Indonesia



*Precast segmental balanced cantilever bridge  
with overhead launching gantry*



▲ Curved section of east viaduct

The Pasupati bridge is the incoming elevated highway in central Bandung, West Java, Indonesia. The bridge will facilitate busy traffic from Pateur toll road exit and western area of Bandung to eastern destination directly and vice versa.

The 2282.4m long elevated road consists of a 1278.7m long west viaduct followed by 303.5m long main bridge (cable stay) and a 700.2m long east viaduct.

## **Scope of works performed by VSL Indonesia**

- Segments erection
- Temporary & permanent PT
- Erection method and analysis
- Geometry control & survey
- Shop drawing for precasting
- Segments handling at casting yard
- Gantry assembly and dismantling

The 44.5m typical span viaduct is formed of 2.95m long precast segmental, three cell, concrete, box girder. The 21.53m wide single deck is designed to accommodate two ways road with two traffic lanes in each direction.

Two overhead launching gantries are operated by VSL Indonesia for erection of 663 segments. Two sets of lowbed trailer are engaged to deliver the segments from Baros casting yard to the site of erection. The 143t (max) segment is attached to gantry's spreader beam with four 40mm dia. VSL CT stressbars. The VSL CT stressbars are also used to temporarily secure and compress the epoxy coated segments joint. After one pair segments erected, six permanent cantilever tendons are installed and stressed with four 460t VSL prestressing jacks.

The typical cycle is 12 days for erection of 15 segments with this free balanced cantilever method. The gantry may not launch before closure work including stressing of continuity tendon since the gantry's rail support will load the middle of span while launching.



▲ Field segment erection at Jl. Dago

One important feature of the viaduct is four reverse curved sections with radius of 285m (min.) and 6% superelevation (max.) along the road deck. This option is actualized to follow the existing road alignment.

Architecturally, the “Y-shape” piers look elegant to support the girder - with laterally ribbed cantilever slab - and give wide space for existing traffic below as well.

To spread the longitudinal earthquake load through all piers, a pair of lock up device (LUD) are



▲ Top deck view of east viaduct

▼ Viaduct crossing Jl. Dago



▼ Pier segment erection



installed at every pier (except fixed bearing) while lateral load is resisted by bearings.

Another unique design of the bridge is the expansion joints that exist at the middle of span which gives particular challenge in the erection method.

▼ Underneath view of viaduct



**PROJECT**  
Pasupati Bridge

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Ministry of Public Works

**ENGINEER**  
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