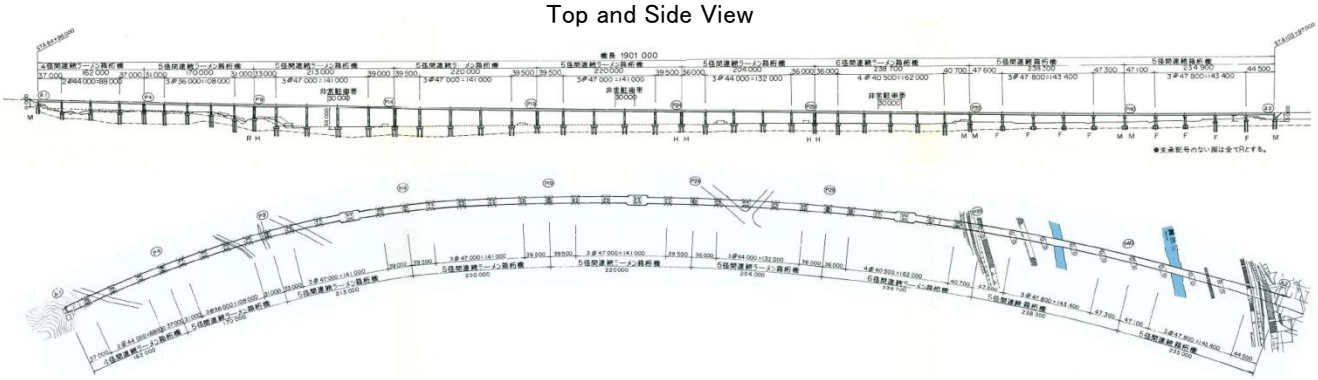
Shigenobugawa Bridge

The first span by span construction implemented in Japan elevated highway structure

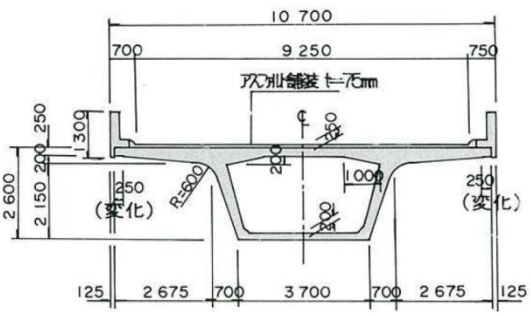
Client	: Japan Highway Public Corporation
Project Site	: Iyo City-Matsuyama City, Ehime Prefecture
Completion Year	: 1996
Bridge Length	: 1901m (45 Span, 9 Continuous Section)
Bridge Type	: Continuous PC Box Girder
Width	: 10.7m
Span Length	: 47.8m
Girder Height	: 2.6m (Constant)
Manufacturing Method	: Short Line Match Cast Method
Number of Segment	: 749 Pieces
Construction Method	: Span by span method (Partially constructed by false work and scaffolding)
Award	: Japan Society of Civil Engineers Tanaka Award 1996
References	: Bridge and Foundation Engineering January 1997 Issue and Journal of Prestressed Concrete No.2 1996

The bridge is the first highway bridge in Japan to implement the precast segment method on a large scale. The precast segment is manufactured by utilizing the short line match cast method while a pre-tensioned method was adopted for transverse tensioning of the deck slab. Precast segments are also used for the zero block on top of the pier. Meanwhile, the gap section on the rigid frame structure is affixed to the pier by using the U-shaped tendon. There is only one joint for each span which require high precision and accuracy during the production and the erection of the segment. The segment was manufactured on the backyard of the abutment, and the segment was transported by using a launching girder on the bridge and unloaded by utilizing a special crane. The erection equipment used was a dual type with a height of 2.3 m, and has the functionality of moving in horizontal direction to adjust the horizontal alignment. The short line match cast method can be flexibly adapted to the road alignment while the manufacturing equipment involved is generally more compact compared to the long line method, so it is often used in the construction of large-scale segment bridges that require multiple manufacturing equipment.

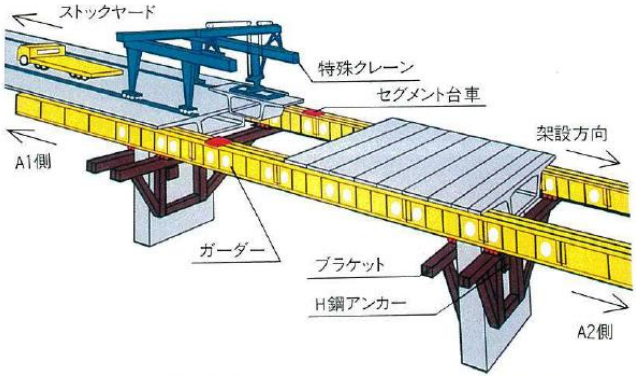
Top and Side View



Cross Section View



Span By Span Reference Figure



Specialized Crane

Support Type Erection Equipment

Segment Installation

Starting Point From Iyoshi Side

Terminal Point From Matsuyama Side

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