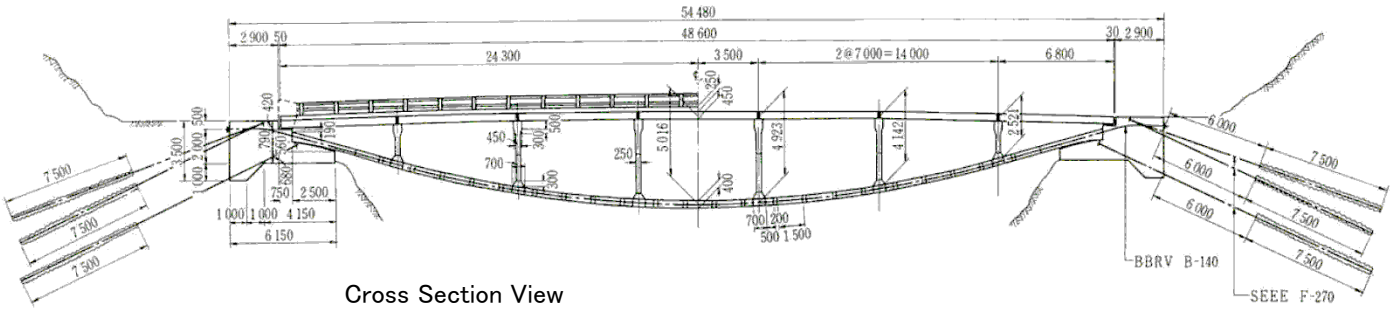
Hayahigamine Bridge

Hayahigamine Bridge is located in Miyazaki prefecture and is the first ribbon span bridge in Japan combined with stiffening girder.

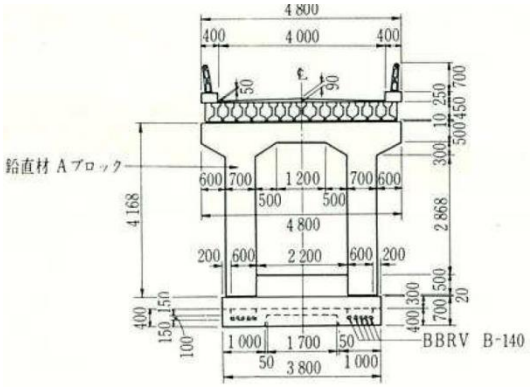
Client	: Kitagata Town, Miyazaki Prefecture
Project Site	: Kitagata Town, Higashiusuki district, Miyazaki prefecture
Completion Year	: 1977
Bridge Length	: 54.48m
Bridge Type	: Ribbon span bridge combined with stiffening girder
Live Loads	: TL-14
Width	: 4.8m
Girder Length	: 48.6m
Amount of Sag	: 5m
Span to Sag Proportion	: 1/9.7
Construction Method	: Tensioning Method by Using PC Cable/Precast Block Method
Substructure Construction	: Rock Anchored Abutment
Award	: Japan Society of Civil Engineers Tanaka Award 1977 Japan Prestressed Concrete Institute Award for Work Category 1977
References	: Bridge and Foundation Engineering July 1978 Issue and Journal of Prestressed Concrete No.6 1997

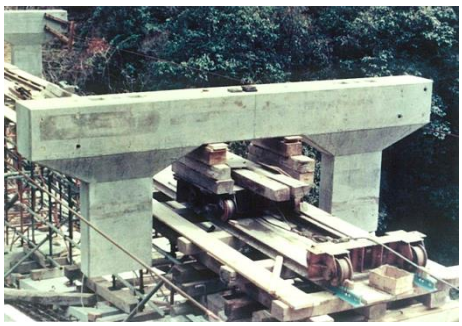
The aforementioned bridge was constructed by positioning the supporting girder on top of the suspended slab. By relaxing the tension on the vertical incline, it allowed the structure to sustain the vehicles passing through the bridge. Not only it possess a great stiffness from the geometric perspective, the bridge design also allow minimum deformation caused by sustaining its load. Due to its location on a remote mountainous region and narrow road, access for large size material and heavy machinery is not viable. Consequently, small segments of precast material were transported to finish the bridge construction. The pre-casted upper slab was lifted and installed in place by using a PC cable and dragged to fit in between the two piers. Both of the piers were installed with ground anchor to ensure the superstructure maintain its levelness. Currently, the bridge surrounding is overgrown with greeneries, making it hard to view the whole structure even from far away.

Side View



Cross Section View





Erection of the Vertical Member

Preliminary Cable Installation

Completion of the Vertical Member

Precast Slab Installation

Installation of Stiffening Girder

Precast Slab

Completion of the Bridge Structure

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