

Yabegawa Bridge

PC3 span continuous bridge with the longest span length in Japan



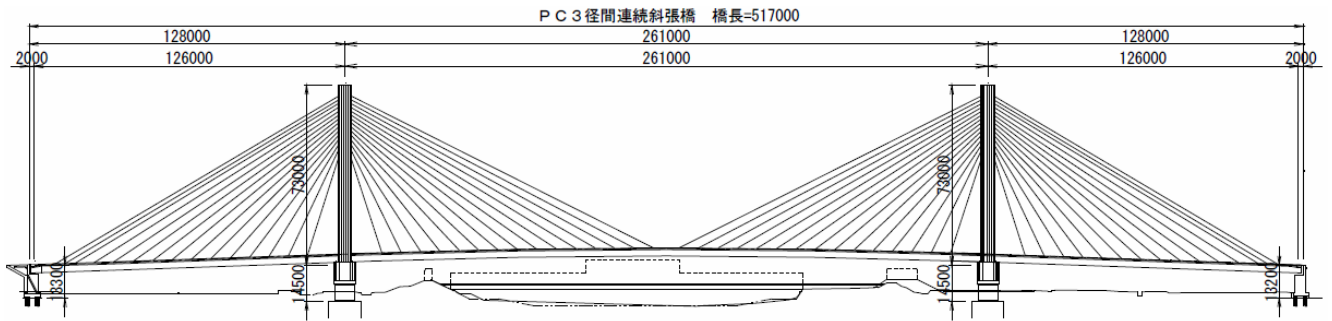
Client : Japan Ministry of Land and Transportation
Project Site : Yanagikawa City-Miyama City, Fukuoka Prefecture
Completion Year : 2009
Bridge Length : 517m
Bridge Type : 3 Span Continuous PC Cable-Stayed Bridge (Single Suspension)
Span Length : 126m/261m/126m
Effective Width : 19m
Alignment : R=1150m A=500
Vertical Gradient : +3.5% to -3.5%



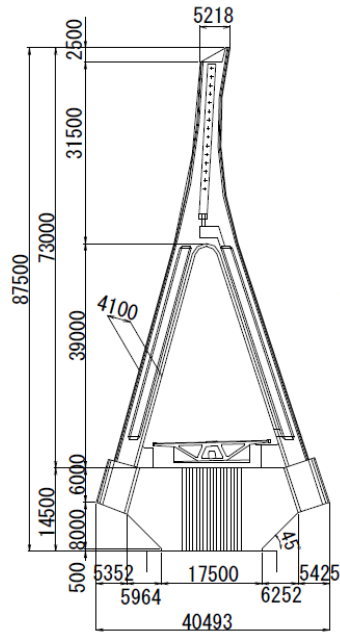
Main Girder Construction : Inverted Trapezoid Tri Chambered Box Girder
Main Tower Construction : Inverted Y-Shaped Tower
Diagonal Support : Carbon Steel PC Cable with 15.6mm Diameter (15 Layer, Max: 85 pieces)
Code: 85H15.6
Award : Japan Society of Civil Engineers Tanaka Award 2008
Japan Prestressed Concrete Institute Award for Work 2008
References : Bridge and Foundation Engineering March 2008 Issue and
Journal of Prestressed Concrete No.3 2006

The bridge is a PC3 span continuous cable-stayed bridge with a bridge length of 517m that crosses the Yabegawa River. It is a PC cable-stayed bridge with the largest span length in Japan, and it adopts a deep pneumatic caisson method for its foundation base along with many other technical features. The diagonal support consists of a cable assembled on site on which the strands are inserted one by one. The anchorage of the cable stay on the main tower side is affixed by using a steel shell cell and tensioned from the girder side. One of the feature of this bridge is how the main girder has a special shape of an inverted trapezoid. Due to design restrictions, a special form traveller is used and set so that its reaction force would cope with the load ratio of 80% for the middle web and 20% for the outer web. The capacity of the traveller is 1700 ton.m, and the construction length is up to 8 m.

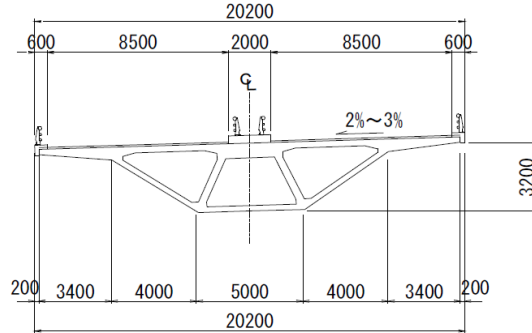
Side View



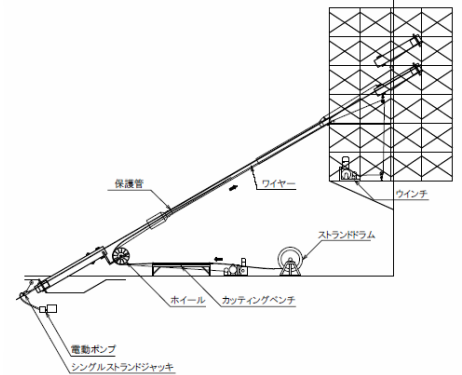
Front View of The Main Tower



Cross section View



Diagonal Strand Support Arrangement



Main Tower Construction by Using The Ascending Formwork



Diagonal Support Installation



Steel Frame Installation



Extra Large Size Formwork Traveler



Main Girder Inner Work