



Cable Erection of Single Pylon Suspension Bridge, Dandeung Bridge

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Summary

The single pylon suspension bridge in Korea, Dandeung bridge, has one pylon and spatial main cables. For the erection of main cables with 12 strands and 4,032 wires, the air spinning method with a tension control has been adapted, and the cable erection work has been conducted successfully from December in 2013 to February in 2014. This paper describes the installation of catwalk and pylon saddle, the result of air spinning, and the site survey result.

Keywords: cable erection; suspension bridge; air spinning method; single pylon.

1. Introduction

A suspension bridge supported by single pylon, Dandeung bridge, is connecting Sinsi-island and Munyeo-island in South Korea and has been constructed in the second section of connecting road works of the Gogunsan islands in Jeollabukdo since this project was started in 2009. The bridge consists of the only one steel box girder for two traffic lanes and two pedestrian lanes with a 400 m span and a single concrete pylon with the height of 105 m. As this bridge has been designed as an earth-anchored suspension bridge, two main cables with a diameter of 0.38 m are anchored within the concrete anchorages at both ends of the bridge. Main cables have a spatial arrangement as the distance between main cables is gradually changed along the bridge. The distance is 20.6m at the anchorage 1, 3.5m at the pylon, and 11.0m at the anchorage 2. At the main span, 24 hanger ropes with a diameter of 75mm and a cross section of CFRC support the steel girder (Fig. 1).

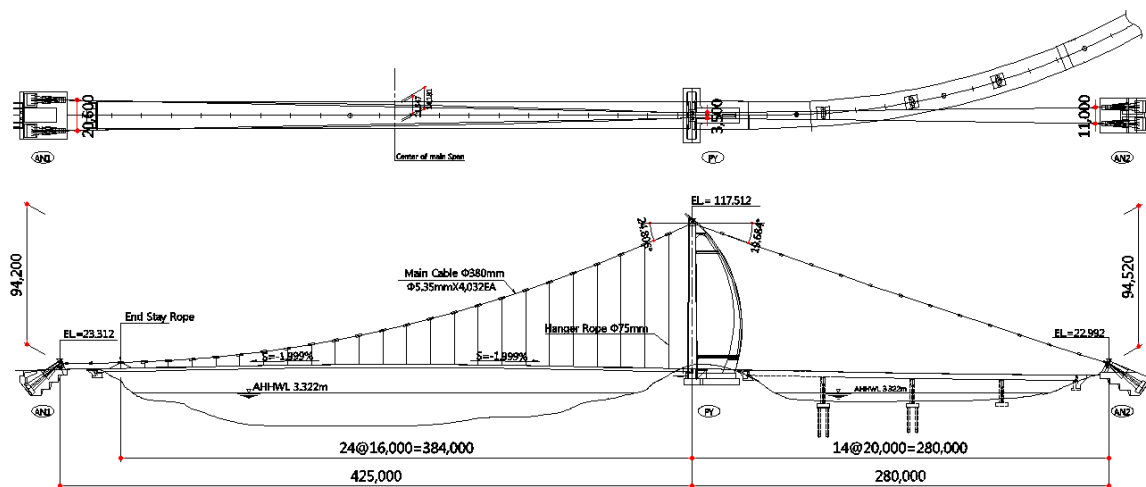


Fig. 1: Plan view and elevation view of Dandeung bridge