IABSE SYMPOSIUM ISTANBUL

LONG SPAN BRIDGES
26-28 APRIL, 2023
HYATT REGENCY ISTANBUL
ATAKOY HOTEL

Paper ID:1262

Design of Shusha Railway Bridge

Ayhan Akray
aakray@yukselproje.com.tr
Yuksel Proje
Ankara, TURKEY

Murat Erdoğdu
merdogdu@yukselproje.com.tr
Yuksel Proje
Ankara, TURKEY

Burak Kurtman
bkurtman@yukselproje.com.tr
Yuksel Proje
Ankara, TURKEY

ABSTRACT

Shusha Bridge is located on an 82.8 km railway in the Shusha region of Azerbaijan. The difficulties in the design of the arch bridge with a total bridge length of 424 m and a 200 m deep valley with a single-track railway on it, construction stages of the elements, dynamic analysis of the train, rail-structure interaction, time-dependent effects, seismic analysis, and solid modelling of foundations will be explained under the main headings.

Keywords: Railway Steel Arch bridge, Dynamic Analysis, Rail-structure interaction

1 INTRODUCTION

The Shusha Bridge is planned to be built on the valley at KM:80+200.00 close to Shusha region of the 82.8-kilometer railway connecting the Azerbaijan Fuzuli and Shusha regions. In this railway project, which will be the crossing point of many regions with Shusha and Fuzuli, there are many viaducts and bridges due to the very rough terrain. Due to the limited vertical and horizontal slopes of the railways and the land structure, the use of special bridges in the mentioned valleys is inevitable. In terms of the continuity of the project, the bridge to be built in this region will ensure uninterrupted transportation. Since it would be very difficult and costly to put a pier in the valley, it was necessary to cross the valley with a large span bridge. Considering the natural beauty of the region, it was decided by the Azerbaijan Railways to build an arch bridge with aesthetics and up-to-date technology in harmony with nature. The existing span complies with arch bridge design criteria.

https://doi.org/10.2749/istanbul.2023.0110

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