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Incremental Launching Method in a challenging geography: Ahmetbeyli-Fuzuli-Şuşa Motorway Project

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ABSTRACT

In 2021 important highway projects started to be implemented in the Karabakh region by the Azerbaijani government. As a part of 81 km Ahmetbeyli-Fuzuli-Shusha Motorway project, three viaducts (V6, V7, and V8) were built using the Incremental Launching Method (ILM). Karabakh is a mountainous region having a challenging geography for roadway construction. At the beginning of the project the three viaducts were designed as classical precast beam structures. Nevertheless, due to the deep valleys where the viaducts are located and the very tight construction schedule, the ILM was eventually retained, considering its advantages in terms of cost and works duration. V6 Left and Right Viaducts have a total length of 295m, V07 Right Viaduct of 185m, V07 Left Viaduct of 130m, V8 Right Viaduct of 350m and V8 Left Viaduct of 405m, with a central span of 55m. The six viaducts have minimum 4.2% and maximum 4.7% longitudinal slope. Due to their geographical conditions and possible access, it has been decided to launch four viaducts (V6 Left, V6 Right, V8 Left, V8 Right) downward and two (V7 Left, V7 Right) upward. Launching decks with such a high longitudinal slope was significant challenge, and special braking system were designed to withstand the sliding forces. In addition, V7 Right and Left viaducts required a particular design, not only because of their longitudinal slope, but also because of their small radius in the highway plan. For these viaducts, the precast sites were specially designed in accordance with the radius of the road