

Fondovalle Dolo Road: Viaduct on the Landslide of Boschi di Valoria

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Summary

In this paper the building of a steel arch bridge with a 160-metre span suspended structure in order to get over the old landslide in the area called Boschi di Valoria is presented.

The Fondovalle Dolo road in Frassinoro (Modena, Italy) is every so often interrupted by a big landslide called the landslide of Boschi di Valoria, on the north-west side of Monte Modino in the Appennines near Modena. The landslide causes the block of the above-mentioned road which is the only efficient connection between a few villages and the valley where most jobs as well as school services, social and health services are situated. The solution chosen to permanently restore the connection is to get over the landslide through a 160-metre span bridge formed by two steel arches with a structure suspended by means of slanting tie-rods (according to the Nielsen scheme).

Keywords: bridge, arch, steel, post-tensioning, launching, extreme events, landslide.

1. Introduction

The landslide of Boschi di Valoria in Comune of Frassinoro (Modena, Italy) becomes active at cyclic intervals and it takes long to stop its activity.

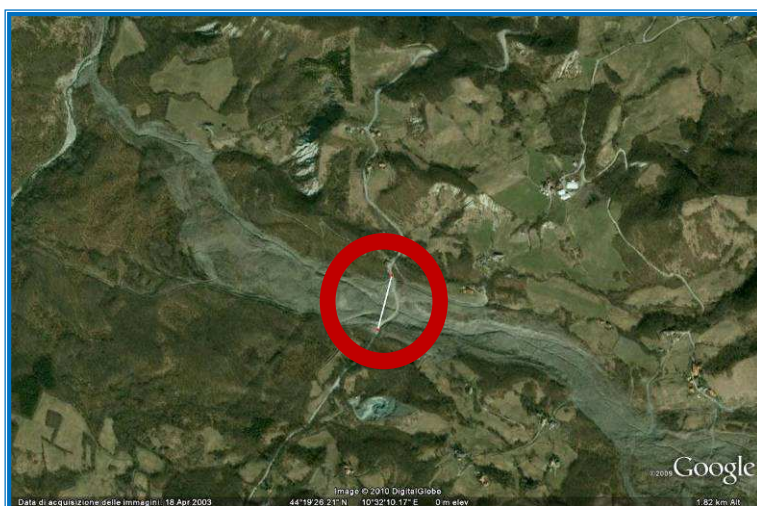


Fig. 1: the viaduct on the landslide

The viaduct, built to restore the road link interrupted by the landslide, which you can see in the circle in picture 1, consists of three spans of 20.00m, 160.00m and 27.00m respectively.

The two side spans are simply laid span made with two I-shaped steel girders and a concrete slab. They allow to lift the road altimetric profile beside the landslide connecting it to the existing way and at the same time to widen the drain on occasion of exceptional events.

The main span is an arch structure with suspended deck by means of slanting tie-rods (Nielsen type) [1]. The main advantages deriving from