

# Bridge in Aldomirovtsi village at km 4+926 of Road III-8112 (km 5+392 on road III-8112 "Slivnitsa-Aldomirovtsi-Gaber")



## Description of the facility - existing condition

The facility is a two-span steel structure bridging the Mataritsa river and falling under the regulation of the village of Aldomirovtsi, Slivnitsa municipality. The bridge has two spans with clear distances of approximately 7.00 m and a total superstructure length of 17.00 m. Situationally it is in a straight line like before and after it there are horizontal curves. Niveletno is also in a straight line with a slope falling in the direction of "Slivnitsa". Its cross gauge includes an asphalt concrete pavement with a width of approximately 6.00 m and a changing cross slope. There are no built sidewalk areas and safety fences. Steel railings are installed.

The static scheme of the facility is a simple beam. Its top structure consists of 6 pcs. main beams of rolled steel profiles with "double T" section. Their height is 360 mm and they are arranged axially every 110 cm. Above the main girders is an infilled road slab composed of restraint system rails laid across them and joined with concrete. In the longitudinal direction at the ends of the facility there are also mounted rails. The road slab together with the non-constructive layers completed above it have a total height of 60-65 cm.

The underbridge gauge of the facility has a minimum height of 2.00 m.

## Design solution for the construction of a completely new single-span road facility:

The superstructure has a plate beam section and consists of 7 pcs. prestressed wide-flange beams - type GT-75 and the length 19.00 m. The unifying road reinforced concrete slab with a minimum thickness of 16 cm is performed on the beams. The upper surface of the plate is profiled to follow the road solution. The beam elements are positioned to follow the profile of the road solution, ensuring the minimum thickness of the joint plate. The connection between the main beams and the reinforced concrete road slab is realized by means of pending reinforcement. The superstructure will pass continuously over the abutments, by means of a transition plate tied to it, which also avoids the implementation of transition structures for expansion joints.

The connection between the upper structure and the lower structure is realized by means of elastomeric bearings. At the abutments, transverse/jack beams are implemented by monolithing the pre-made and installed beam elements, thus achieving the possibility of replacing the bearings in the future.

## EKJ Bulgaria's services:

### During design:

EKJ Bulgaria Ltd is the executor of the contract for the development of the technical project for the construction of a new facility over the Mataritsa River at km 5+392 on road III-8112.

### Objectives and Features:

- To serve as a basis for the development of a technical project for the implementation of a new single-hole facility
- To guarantee technical-operational indicators, wearability and durability in accordance with the new normative documents and to ensure conditions for traffic safety and passenger comfort
- Short design times

**Client:** Road Infrastructure Agency

Regional Road Administration - Sofia

**Contractor:** EKJ Bulgaria Ltd

**Period:** 2022-2023

**Contract type:** Design

**Phase:** Detail design

