



LOCAL ROADS CONNECTIVITY PROJECT



Municipality of Valandovo

Local road Josifovo - Gorna Maala - Valandovo

Introduction – General information about the project

The subject of this project is the preparation of project documentation at the level of the As-Built Project for LRCP T5 Part 1 Construction works for the improvement of the infrastructure of local roads in selected municipalities in accordance with the developed basic projects - Part 1 - Reconstruction of a local road connecting the village of Josifovo with the village of Gorna Maala – Municipality of Valandovo with a total length of $L=692.49\text{m}$. The construction works that are part of this project start from station 1+180.00 and end at station 1+872.49km.

General and preparatory work

Prior to the start of field work, additional geotechnical investigations and laboratory testing were conducted in order to obtain additional information about the condition of the terrain and the quality of the materials on site. For the safety of road users, during the period of construction work, a Traffic Project was developed for temporary traffic regime and maintenance of temporary traffic signaling with daily operational checks of traffic management during the construction work on the road. Before the start of construction works, the route was marked and secured, as well as the removal of the existing asphalt on the site of the newly planned route

Bottom line

In order to reach the designed elevation for the installation of a new buffer layer and improved bedding, mechanical excavation of Category II soil was carried out and the excavated material was transported to a previously agreed location. After the excavation, construction works continued with the preparation of the subsoil, the construction of an embankment, the planning and rolling of the bed, as well as the construction of slopes and earthen drainage channels, which completed the planned construction of the road's substructure.

Horizontal solution

During the construction of the local road between the villages of Josifovo and Gorna Maala, care was taken to ensure that the following requirements were met: functionality, economy, safety, etc. This As-Built Project was prepared based on recorded geodetic data. A stabilized bank with an area of $P=339.59\text{m}^2$ was constructed. Small concrete curbs 6/20 with MB40 with a length of $L=693.00$ were installed. Large concrete curbs with dimensions 18/24 with MB40 with a length of $L=320.4\text{ m}$ were also installed. Concrete slab sidewalks were constructed on the local road with a total area of $P=866.20\text{m}^2$. From station 1+575.00 to station 1+590.00, an AB tubular culvert was constructed, in accordance with the details of the Basic Design. The situational solutions were developed in a scale of $M=1:1000$ and shown in the graphic attachments in the As-Built Design.



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Road construction

The pavement structure for the local road village of Josifovo - village of Gorna Maala is constructed with the following layers:

- Improved bedding of gravelly sandy material..... d=30 cm
- Buffer layer of crushed stone with a thickness of..... d=30 cm
- Bitumenized bearing layer.....BNS 22 d=7 cm
- AB layer.....AB 11C d=5 cm.

The pavement construction is made up of the following layers:

- Stone material fraction 4/8 d=3-5 cm
- Concrete tiles.....d=6 cm.

Characteristic cross-sections

In the graphic attachments of this documentation, the characteristic cross-sections show the construction of the drainage elements with the installation of gutters and concrete curbs 18/24cm with MB40 shown in the graphic attachments. The normal cross-sections are made in a scale of M=1:100, according to the basic design.

Traffic technical equipment

Marking of the asphalt surface with reflective road paint, i.e. marking of the median strip on the local road, has also been carried out. Vertical signage with all the planned traffic signs has been installed on the local road between the villages of Josifovo and Gorna Maala, in accordance with the Basic Traffic Design.

Additional things

Due to the construction of the embankment of the AB culvert (bridge), as well as to protect the road embankment from erosion during high water during torrential rains, which are characteristic of this area, during the construction, the need arose to construct an AB retaining wall, appropriately reinforced with Q-335 (Q-402) mesh reinforcement. From station 1+593.00 to station 1+627.00, with a total length of 34m, there was a need to construct a new AB culvert F800, due to the extension of the earthen channel at critical points and entrances to plots, as well as protection of the roadbed on the left side of the road. Also, due to the drainage of stormwater from the surrounding terrain on the stretch after the AB culvert (bridge), there was a need to install F800 pipes in the road structure at station 1+650.00 with a length of 10m to drain stormwater from the right side of the street to the other side into the natural recipient. Upon request of the local population from the Municipality of Valandovo for the use of the irrigation system from one side to the other of the local road connecting the village of Josifovo with the village of Gorna Maala, new PE pipes F315 for a culvert under the road were installed.

Due to the intersection with local unpaved streets at stations 1+380.00, 1+560.00 and 1+872.50, additional asphaltting was carried out with AB 11S d=5cm and BNS 22 d=7.



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