# VOLUME 3

# TECHNICAL SPECIFICATIONS

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**For works on the project:**

**Rehabilitation of tourist eco-trail** **«Bryastovo - Uzun Dere - Probit Kamak area - Orlovi Skali area with deviation to Aykaas area» in the municipality of Mineralni Bani**

**1. GENERAL REQUIREMENTS**

**1.1. Selection and approval of materials:**

When incorporating materials for finishing works, the Contractor shall submit in advance to the Contracting Authority a sample for approval.

When using non-standard materials in the works, they should be tested in certified laboratories and have a certificate of applicability, issued by the relevant state controlling body.

**1.2. Cleaning of construction sites:**

The Contractor is responsible for keeping the construction site clean and restore any environmental damage. During the works the Contractor shall constantly keep the sites free of construction and household waste. All materials will be stored in an orderly manner, and upon completion of the works, the Contractor will finally clean up the sites and will remove all temporary works and equipment and will clean and restore the surrounding environment from damage resulting from his activities.

**1.3. Sampling and testing:**

The Contractor is obliged to carry out all the required by the regulations tests of equipment, systems and components during construction. The costs of such testing the Contractor should include in the total value of construction works on the sites.

**1.4. Compilation of acts and protocols:**

The Contractor shall assist the construction supervision for the issuing of the required acts and protocols during construction.

**1.5. Interaction with the Contracting Authority and other stakeholders. Progress reports:**

The Contractor shall provide an authorized representative to participate in working meetings, in the acceptance of orders from other participants in the construction process, in the solving of technical or other questions related to the works. The Contractor will submit a monthly report to the Contracting Authority detailing his actions and the conditions on the sites, including high quality images of the site showing the progress of the works.

**1.6. Information boards:**

The Contractor is required to install and maintain at the site an information board according to the requirements of Regulation № 2/2004 on the minimum health and safety requirements in carrying out construction works, including to notify the relevant department of the Executive Agency "General Labour Inspectorate" and the Directorate for national construction control by sending a copy of the contents of the information board.

**1.7. Compliance:**

The materials and products included in the works must meet the requirements of Art. 169a of the SPA and the Ordinance on the essential requirements and conformity assessment of construction products with the technical specifications and design. The Contractor certifies the compliance using the documents, required by the ordinance.

**1.8. Compliance with the Bill of quantities:**

The Contractor must follow strictly the volumes set out in the Bill of Quantities. Possible changes in the quantities will be certified under the provisions of the works contract. Reporting of completed works will be carried out using real quantities. The acts reflecting the completed works should be submitted for inspection and signature to the persons performing investment control and construction supervision.

**1.9. Compliance with health and safety and environmental protection:**

In performing the subject of the contract, the Contractor shall comply with the requirements of the Environmental Protection Act, the Waste Management Act, the health and safety conditions and regulations in this regard, the requirements of the design for parts - health and safety and fire protection and environmental protection and the safety and health plan.

The Contractor shall comply with all requirements of the competent authorities related to environmental protection. Special measures must be taken to prevent leakage of fuel, hydraulic fluid, other hydrocarbons and solvents, and such hazardous waste. All waste is to be disposed of safely so as not to contaminate soil, groundwater or aquifers. It is forbidden to use new products containing asbestos. If during demolition works occurs waste containing asbestos, the Contractor will treat them as hazardous waste.

The Contractor shall take special care not to damage the natural environment in and around the work sites. The Contractor will follow the instructions of construction supervision and competent officials for environmental protection and the protection of fauna and flora.

The Contractor will implement a clearly defined policy on the sites to ensure healthy and safe working conditions for all people on site and / or to those who may be affected by the activities at the sites.

The Contractor is obliged to provide work clothing and personal protective equipment according to Art. 10 of the Health and Safe Work Conditions Act, while taking into account the specifics of the work performed by different workers. The Contractor shall instruct employees as required by art. 16 of the above act. When using equipment and facilities on site, the workers should be instructed to work with them. It is not allowed the plant and equipment to be operated by unskilled workers. All moving parts of machinery must be covered and secured. Electrical machines must be grounded. All working staff and visitors at the site must wear helmets.

**1.10. General requirements for quality assurance:**

Construction works and materials used must meet the requirements of SPA and the Ordinance on the essential requirements for construction and conformity assessment of construction products.

All materials and equipment provided for carrying out continuous activity under the terms of the contract must be new products. Second hand materials and equipment will not be accepted. Each delivery of materials and equipment on construction sites or according to the technical standards, specifications or approved samples and catalogues, shall be carefully stored until their incorporation in the works.

All manufactured products or equipment for which it is intended to be incorporated in the works will be delivered with all necessary accessories, fixings and parts, fittings, accompanied by manuals for operation and maintenance, which can be applied to them.

The warranty for the manufacturede products and equipment shall commence from the date of acceptance of the site and its commissioning.

**1.11. Throughout the text,** where are indicated specific models or source, process, trademark, patent, type, origin or production shall be read as "or equivalent".

**1.12. Power supply of construction sites:**

The site will use electricity from existing facilities of buildings in accordance with the requirements of the Contracting Authority. The Contractor is obliged to ensure temporary power supply at the sites.

**1.13. Sanitary equipment on the site:**

For the needs of workers, technical or other personnel, the Contractor can use the sanitary facilities in buildings and where this is not possible, he shall provide temporary ones.

**2. DESCRIPTION OF ACTIVITIES**

**REHABILITATION OF TOURIST ECO-TRAIL «Bryastovo - Uzun Dere - Probit Kamak area - Orlovi Skali area with deviation to Aykaas area» in the municipality of Mineralni Bani**

The project includes the rehabilitation of the tourist trail "«Bryastovo - Uzun Dere - Probit Kamak area - Orlovi Skali area with deviation to Aykaas area» and the accompanying installation of small attractions and rest places.

The route of eco trail with a total length of 15,380 km and 4.5 km deviation to Aykaas includes two separate recreational areas. The first one is at Shilata area and the second one - at Uzun river gully. Along the trail are mounted signposts, information boards and benches serving the tourists from the municipality of Mineralni Bani. Two of the information boards are mounted on the main road to the Border Checkpoint Makaza, which will provide better information for tourists. It is envisaged that the route of the trail to be cleared of vegetation and waste and to form suitable slopes for drainage of surface waters.

Along the trail is envisaged the installation of the following elements of tourist infrastructure:

* 1. Information boards - 13 pcs.
  2. Direction signs - 12 pcs.
  3. Single direction signs – 42 pcs.
  4. benches of type 1 - 8 pcs.
  5. table with benches type 2 - 4 pcs.
  6. secured open fireplace - 1 pce.
  7. Rest place - 1 pce.

Elements of tourist infrastructure and small attractions:

* + - **Information board**

Wooden framed structure of wooden elements with round section according to the architectural detail, supported on small single concrete foundations. The information part (168x88 cm) is printed on vinyl to over a solid foundation.

* + - **Direction signs**

A single vertically positioned roughly processed wood element mounted on a single concrete foundation. There are wedged one, two or three arrow-shaped architectural details of single wooden elements with a round cross section and with an engraved information text.

* + - **Bench type 1**

Bench of logs mounted on a concrete foundation.

* + - **Table with benches type 2**

Covered table with two benches according to architectural detail. Made of logs mounted on a concrete foundation. The roof structure consists of wooden elements with round section and wooden roofing.

* + - **Secure open fireplace**

Installed at outdoor rest place, consisting of round site, paved with stone flooring, fireplace of stone wall ending with a metal grill and six chairs made of logs along the edge of the pavement.

* + - **Rest place**

Shelter with fireplace and sitting (table with benches Type 1) according to architectural detail with mixed construction of dry stone masonry with props and wooden frame made of wood elements with round section. Paved with stone slabs. Wood roofing.

**Note:**

All wooden elements to be treated with suitable protective chemicals against development of mould and fungi. All metal elements are treated with suitable protective agents against corrosion.

The route of the trail follows for the most part the route of the existing dirt road and is situated on the cadastral map. The marking points are at every 20 m., whereas the curves are also indicated. The width of the pedestrian path is also stated.

There are no completed lined or earth trenches and culverts for drainage of rainwater. Surface cover is also missing. The gradients are from 1% to 20%. There are envisaged activities related to the alignment of the incline of the terrain of 10-30 cm in order not to affect the surrounding terrain. The routes of the path passes through places overgrown with grass and bushes.

The width of the eco-trail along its whole length is 3 meters, whereas only Profile 2 has a width of 2.0 m. The axis follows the route of the existing path, the horizontal curves are designed with circular curves and the marking points are at every 20m.

The drainage of walkways is done by gravity, with one-sided cross slope of 2.5%.

For the most part the routes of paths are overgrown with shrubs and grasses and they need to be cleared.

Tracing shall be carried out by in-situ polygon network.

The coordinates of all points in Coordinate System 1970 and in relation to height - Baltic height system.

Longitudinal sections - M 1: 2000/1: 2000

On Drawing No.2 in 1: 2000/1: 2000 are shown five longitudinal profiles.

The length of the first profile is 3160.57 meters. On the second - 406.64 m. , the third - 3642.12 m., the fourth - 8145.28 m., and the fifth is 4083.83 m.

There are envisaged leveling activities without disruption of the site.

**Typical cross section M 1:25**

It is envisaged the walkways to have the following width:

- width of the walkways - 3.00 m. and Profile 2 - 2.0 m.

The pavement for is done by one-sided cross incline - 2.5%.

The direction of incline is determined with a view of draining the surface water.