# VOLUME 3

# TECHNICAL SPECIFICATIONS

GENERAL REQUIREMENTS

The Technical Specification is an integral part of the Tender Documentation (TD) together with the provisions of the Contract, the detailed design drawings, Building permissions and the other contract documents. The Specification specifies and further develops the requirements for the implementation of the construction works under the Contract.

Implementation of construction and assembly work must be consistent with all relevant execution of specific types of works legal and regulatory framework, technical rules and regulations and applicable standards following sequence and technology of the performance of different types of works in different parts of the site.

1. STANDARDS

As a minimum the Macedonian standards and codes shall always be satisfied. Other internationally acknowledged standards and codes may be used only if:

• They are more or at least equally stringent compared to the respective Macedonian standards and codes or

• European technical approvals (with or without guidance).

The materials which are used must correspond to the requirements of the standardized documents asset in Macedonian standards and codes.

If the Contractor should wish to supply material or execute work to an alternative national standard or international specification, he shall give full details of his proposal in writing to the Supervisor.

2. CONTROL OF WORKS

The Contracting Authority will provide a consultant who will supervise construction with investment functions, according to Macedonian legislation and other legal acts in construction works in accordance with Macedonian Law of construction and the PRAG rules, the Contracting Authority will appoint Supervisor with separate contract. The Contracting Authority and / or Investor control and / or Supervisor may at any time inspect the work, control technology performance and issue instructions to remove the defects, according to the specified technology and method of implementation. If found serious defects, errors and low-quality performance, the Contracting Authority shall notify the Contractor that breached the contract and should stop to work. The Contractor shall always provide access to the construction site of the authorized representatives of the Contracting Authority, the investor control and the Supervisor.

2.1 Contractor's equipment

The Contractor shall furnish equipment which will be efficient and appropriate to secure a satisfactory quality of work and a rate of progress which will insure the completion of the Works within the time stipulated in the Tender. If at any time such equipment appears to be inefficient, inappropriate or insufficient for securing the quality of work required or for the rate of progress, the Supervisor may be entitled to order the Contractor to increase the efficiency, change the character or hire additional equipment, and the Contractor shall conform to such order.

2.2 Protection of existing structures and utilities

The Contractor shall assume full responsibility for the protection of all buildings, structures and roads existing in the area of the construction site, public or private, whether or not they are shown on the drawings.

When starting the contract to be invited all companies and institutions exploiting underground lines and facilities, specifying the exact location of existing underground lines/facilities and in their vicinity excavation should be carried out very carefully and in places where necessary, manually.

The Contractor has to pay special attention to avoid any damages on any protected areas.

Any damage resulting from the Contractor's operations shall be repaired at his expense.

2.3 Safety and security on site

Safety and security arrangement should be performed in accordance with Macedonian Construction Law

2.4 All materials and plants to be incorporated in the work shall be handled and stored in a manner, which prevents injury of any kind whatsoever. Any materials or plants which, in the opinion of the Supervisor, have become too damaged to be fit for the use intended or specified shall be promptly removed from the site, and the Contractor shall receive no compensation for the damaged material or its removal.

2.5. Approval of sources, materials and plants

Materials incorporated must originate in any eligible source country as defined in Regulation (EU) No 231/2014 of the European Parliament and of the Council of 11 March 2014 establishing an Instrument for Pre-Accession Assistance. However, the goods to be purchased may originate from any country, whenever the total price of the estimated quantity of those goods, as reflected in a separate item of the Breakdown of the Unit Price is below 100.000 €. A category of similar goods to be purchased shall not be broken down over more than 1 item of the Breakdown of the Unit Price.

For these purposes, ‘origin’ means the place where the goods are mined, grown, produced or manufactured and/or from which services are provided. The origin of the goods must be determined according to the EU Customs Code or the applicable international agreement.

When importing goods, any change in the specified origin must be pointed out to the project Supervisor and approved by him.

Approval of a source does not mean that all material in the source is approved. The Contractor has to ascertain by continuous control check measurements that only material which complies with the requirements specified in the various clauses of these specifications will be used for the Works.

2.6 Requirements regarding environmental protection

In the execution of construction works contractor must confine its action within the construction site. After completion of construction works the Contractor shall reimburse the construction site by the project for development and park arrangement - to withdraw all their machinery and unused materials and leave the site clean of debris and completely finished.

2.7 Clean-up work

The Contractor shall clear way and remove from the site any wreckage, rubbish and temporary works, which are no longer required.

2.8 Responsibility of the Contractor

Approvals from the Investor Control do not relieve the Contractor from his obligations or responsibilities under the Contract.

3. ADMINISTRATIVE SPECIFICATIONS

3.1 Progress meetings

The Contractor shall agree with the Supervisor and the Contracting Authority for dates for regular progress meetings. These meetings shall normally be held monthly, no later than 10 working days after the completion of each month.

3.2 Quality assurance

The Contractor shall institute a quality assurance system to demonstrate compliance with the requirements of this contract. The system shall be in accordance with the details stated in the Contract. The Supervisor shall be entitled to audit any aspects of the system.

4. IMPLEMENTATION OF THE WORKS

4.1 Materials

The Contractor shall use only materials that conform to the technical requirements set in the clauses of this Technical Specification.

All Materials and Plant supplied to perform the Permanent Works under the contract shall be new products. Second-hand Materials and Plant will not be accepted.

The Tender drawings constitute the drawings issued for construction/ installation/ execution.

4.2 Testing

Reliable shall be only the type and amount of tests performed in conformity with the prescription of this Technical specification, except when this right is granted to the Contracting Authority.

The Contracting Authority may require additional tests when the results obtained are uncertain.

Beside the tests specified in this Specification, the Contracting Authority may require additional tests to establish possible hidden omissions and effects. Costs for these tests shall be entirely at the Contractor’s expense if such defects are confirmed.

4.3 Inspection and measurement of works

The Contracting Authority may at any time inspect the quality and measure the amount of works performed. If this cannot be done with the Contractor’s assistance, a deadline shall be fixed for hiring external specialists. In this case, the expenses shall be paid by the Contractor.

5. PREPARATORY WORKS

Before starting the works the Contractor has to perform some preparatory works at the site.

5.1 Boards and signs

The Contractor shall mount and maintain in good condition a board with the name of the project and the financing institution. The visibility measures must comply with rules laid down in the Communication and Visibility Manual for EU External Actions published by the European Commission

5.2 Setting out the site

The Contractor shall in co-operation with the Contracting Authority set out the total site to be used for construction.

5.3 Temporary facilities

The Contractor shall effects all expenditure for establishing, operation and removal of temporary facilities if such are needed for the good performance of the Contract. All needs for establishing such facility shall be duly justified.

5.4 General supply facilities

Sanitary Arrangements

The Contractor shall provide for and maintain temporary sanitary facilities on the site for the use of all persons connected with the Works. The Contractor shall keep the facilities in a clean and sanitary condition and shall post notices and take such precautions as may be necessary to keep the site clean.

Water supply

The Contractor shall provide for and maintain an adequate supply of potable water for his use. The water supply shall be used for construction purposes and for consumption in the temporary facilities.

Power supply

All electrical power required by the Contractor shall be provided by him at his own expense. The Contractor prior to taking-over of the Works shall remove all temporary installations if it is not agreed upon that the Contracting Authority takes over the installations.

6. ADDITIONAL SPECIFICATIONS

All provisions and clauses from the Macedonian Construction Law and other codes that are valid obligate the Contractor.

SPECIFIC REQUIREMENTS

The basic project should be divided in two phases. The first phase includes: -Walking trail -1from 0+000.00km. to 0+163.04km.-Platy leak -1 or Pedestrian bridge -1-Walking trail with riverbed from 0+000.00km. to 0+722.29km.

The Walking trail which are a subject of this project are placed in Kriva Palanka and Varovishte or more accurately in the places called Babin Dol and Krusha. These paths are of great importance for the development of the tourism and for the cultural and historical significance of the Monastery "St. Joakim Osogovski".

There are existing paths in certain parts of the route which are with variable dimensions on particular sections but not wide more than 1.0m , with large bumps, without pavements, with large longitudinal and cross slopes on particular sections and with drainage problem of the surface water in some places.

Regulation of the watercourse and the regulation of the riverbed of "Babin Dol". In the first phase it starts from the newly designed AB pedestrian bridge which is long from 0+000.00 to 0+722.29 km

The constructor should perform all the planned activities according to the predicted technical conditions.

The investor is obliged to solve all the legal property issues before the start of the construction works in the construction area as well as to finish all the preparation works such as the organization of the construction site, accommodation for the staff, installation of toilets, sheds for accommodation, sheds for the tools and materials and other necessary contents for placing the HTZ conditions according to the regulations.

The contractor is obliged to hand the Dynamic plan to the supervisory engineer about the construction works which includes: the quantity and type of the works, material and workforce, the available mechanization.

The contractor starts with the construction works after the approval of the working plan.

The supervisor is authorized to stop the construction if there are other works not predicted in the approved working plan which prevent the effective performing of the works.

The excavation type is selected by the constructor according to the available mechanization, terrain conditions and other circumstances.

All the variations from the basic project must be included in the project and the construction paper.

The constructor is also obliged to be concerned with the constructed works until the final realization, technical inspection and the reception and delivery of the work to the investor.

Furthermore, the investor is obliged to implement all of the HTZ measures during the construction works.

On the other hand, the supervisor is authorized to control the construction works and can stop the construction due to unprofessional working.

If the material is inserted unprofessionally and contrary to the regulations, the constructor must correct it, to break or undo it on proper account.

The constructor is obliged to accomplish the order given by the supervisor, but if the constructor proves that the order was not properly given by the supervisor then the constructor will have the right of compensation.

After the completed construction works, the constructor is obliged on proper account to clean and to organize the surfaces within the facility and construction site.

All these works the constructor will calculate in single prices and these costs will not be separately charged.