

Section VI: Requirements

Preamble

This Section shall provide sufficient information to enable Participants to prepare comprehensive, realistic and competitive proposals addressing the Client's requirements.

The Requirements shall form an integral part of the resulting Contract.

The Requirements consist of the following parts:

- Scope of Works;
- Specifications;
- Drawings.

The Client shall ensure that the ESHS requirements, specified in the Project legal agreements, are appropriately reflected in the Requirements.

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Scope of Works

Purpose of the Works

The purpose of the Works is to design, reconstruct, modernise and complete the Paraćin – Međurovo Railway Line Section (excluding the Stalać – Đunis subsection) as part of Section 3 of the Belgrade – Niš Railway Modernisation Project, to provide a safe, reliable, interoperable and high-capacity double-track electrified railway forming part of the Trans-European Transport Network (TEN-T) and Corridor X.

The completed Works shall enable passenger train operations at speeds of up to 200 km/h, where permitted by the approved design and applicable technical requirements, while supporting efficient freight operations, improving operational reliability, increasing line capacity, enhancing safety, reducing journey times and contributing to the modal shift from road to rail.

The Works comprise the preparation of all designs required under the Laws of the Republic of Serbia, including the Design for Building Permit (PGD), Design for Execution of Works (PZI) and As-Built Design (PIO), together with the execution, testing, commissioning and completion of the permanent Works, including civil works, track works, structures, railway electrification, stations, buildings and associated railway infrastructure necessary to achieve the intended purpose of the Project.

The Works shall be designed and executed in accordance with the FIDIC Conditions of Contract for Plant and Design-Build (Yellow Book, First Edition 1999), the Laws of the Republic of Serbia, the Employer's Requirements, the applicable Technical Specifications for Interoperability (TSIs), relevant European and Serbian standards, and the requirements of the competent authorities.

The Contractor shall ensure that the Works it designs and executes are fit for the stated purpose, comply with the performance requirements specified in the Employer's Requirements and the Contract, and are capable of safe, reliable and efficient operation throughout the Design Life of the railway infrastructure.

Description of the Works

- **Project Overview**

The Belgrade–Niš Railway Modernisation Project forms part of the programme for the reconstruction and modernisation of the Belgrade–Niš railway line, one of the most important railway corridors in the Republic of Serbia. The railway line forms part of Main Line 102 (Belgrade Centre – Rasputnica "G" – Rakovica – Mladenovac – Lapovo – Niš – Preševo – State Border) and is included in the TEN-T Core Network extension to the Western Balkans, Pan-European Corridor X, the AGC and AGTC Agreements, and Rail Freight Corridor 10 (RFC 10 – Alpine–Western Balkans).

The Project comprises the reconstruction, modernisation and, where required, realignment and double-tracking of approximately 228 km of railway between Belgrade (Resnik) and Trupale, together with the upgrading of the railway infrastructure to support operating speeds of up to 160 km/h, 180 km/h or 200 km/h, depending on the respective section. The Project also includes the modernisation of railway stations, bridges, tunnels, drainage systems, electrification and associated railway infrastructure. Signalling and telecommunications for the entire corridor will be implemented under a separate contract to ensure a uniform signalling and telecommunications system along the route.

The Project is being implemented by Serbian Railways Infrastructure JSC (Infrastructure of Serbian Railways – SRI) and is co-financed by the European Bank for Reconstruction and Development (EBRD), European Investment Bank (EIB), European Union (EU) and budget of Republic of Serbia. The modernisation of the corridor is a strategic investment aimed at improving railway safety, increasing line capacity and reliability, reducing travel times, enhancing interoperability with the European railway network, and promoting a modal shift from road to rail in support of sustainable transport and reduced greenhouse gas emissions.

The Belgrade–Niš railway connects the capital city of Belgrade with Niš, one of Serbia's principal economic and transport centres, and serves both domestic and international passenger and freight traffic. Upon completion, the Project will significantly improve the efficiency, capacity and resilience of Serbia's core railway network and strengthen regional and international rail connectivity.

• **Contract Overview**

This Contract comprises the design, reconstruction and modernisation of Section 3 of the Belgrade–Niš Railway Modernisation Project, covering the Paraćin – Međurovo railway line, excluding the Stalać – Đunis subsection.

The Contract shall be implemented under the FIDIC Conditions of Contract for Plant and Design-Build (Yellow Book, First Edition 1999). The Contractor shall be responsible for the preparation, obtaining approvals and updating, as required, of all design documentation necessary for the execution of the Works in accordance with the Laws of the Republic of Serbia, including the Design for Building Permit (PGD), Design for Execution of Works (PZI) and As-Built Design (PIO), based on the available Preliminary Design (IDP), as well as for the complete execution, testing, commissioning and remedying of defects of the Works.

The Contract comprises the following subsections:

- Subsection 3.1: Paraćin – Stalać (approximately 20.8 km);
- Subsection 3.3: Đunis – Trupale (approximately 37.7 km); and
- Subsection 3.4: Truplame (Niš Marshalling Yard) – Međurovo (approximately 6.7 km).

The total length of the railway covered by this Contract is approximately 65.2 km.

The Stalać – Đunis subsection (Subsection 3.2) is not included in this Contract. It is being implemented under a separate Design & Build contract and is expected to be under construction during the execution of this Contract. The Contractor shall cooperate with the Employer, the Engineer and the contractor responsible for Subsection 3.2 to ensure proper coordination of the design, construction activities, interfaces, possession planning and commissioning at the connecting boundaries.

The Contract includes the reconstruction and modernisation of railway infrastructure, including track works, earthworks, bridges, viaducts, tunnels, culverts, drainage, stations, platforms, buildings, railway electrification and associated civil and electrical works necessary to achieve the required operational performance. The Contractor shall maintain railway operations where required by the Employer and execute the Works in accordance with agreed track possession arrangements.

Signalling and telecommunications systems for the Belgrade–Niš corridor will be procured and implemented under a separate contract. Accordingly, the Contractor shall coordinate its design and construction activities with the signalling and telecommunications contractor and shall provide all civil, structural, electrical and interface works required to facilitate the installation, integration, testing and commissioning of the signalling and telecommunications systems.

The completed Works shall comply with the applicable Laws of the Republic of Serbia, the Employer's Requirements, the relevant Technical Specifications for Interoperability (TSIs) and other applicable European and Serbian standards, and shall be fit for safe, reliable and efficient railway operation at the specified design speeds.

- **Collaboration with Third Parties**

The Contractor shall acknowledge that the Works under this Contract form part of the wider Belgrade–Niš Railway Modernisation Project and shall be executed in parallel with, or interface with, other contracts and activities undertaken by the Employer and third parties.

The Contractor shall cooperate fully with the Employer, the Engineer, other contractors, public authorities, utility owners and other stakeholders to ensure the timely and efficient execution of the Project. The Contractor shall identify, manage and coordinate all interfaces affecting the Works and shall incorporate such interfaces into its design, construction methodology and programme.

The principal interfaces include, but are not limited to, the following:

(a) Subsection 3.2 – Stalać–Đunis Design and Build Contract

Subsection 3.2 is being implemented under a separate FIDIC Yellow Book Design and Build contract. At the commencement of this Contract, the contractor for Subsection 3.2 is expected to have substantially completed the detailed design and to have commenced construction activities.

The Contractor shall coordinate all design, construction, testing and commissioning activities at the interfaces between Subsections 3.1 and 3.2 and between Subsections 3.2 and 3.3. Such coordination shall include, as applicable:

- alignment and geometric continuity;
- track, electrification and power supply interfaces;
- drainage and structures at interface locations;
- construction sequencing and possession planning;
- testing, commissioning and Taking-Over procedures;
- exchange of technical information and interface documentation.

(b) Signalling and Telecommunications Contract

The signalling and telecommunications systems for Sections 1, 2 and 3 of the Belgrade–Niš Railway Modernisation Project will be implemented under a separate contract.

The Contractor shall coordinate its activities with the signalling and telecommunications contractor and shall ensure that the Works provide all civil, structural, electrical and installation interfaces necessary for the subsequent installation, integration, testing and commissioning of the signalling and telecommunications systems. The Contractor shall provide all ducts, cable routes, foundations, equipment supports, building provisions, power supply interfaces and other enabling works specified in the Employer's Requirements.

(c) Railway Operations

The existing railway line shall remain operational, during execution of the Works, except during approved possessions granted by the Employer. The Contractor shall plan and execute the Works to minimise disruption to railway operations and shall coordinate all possessions and operational restrictions with the Employer, the infrastructure manager and the railway operator.

(d) Utility Owners and Public Authorities

The Contractor shall coordinate the design and execution of the Works with utility owners, road authorities, municipalities and other competent authorities responsible for approvals, permits, utility relocations and other activities affecting the execution of the Works.

(e) Other Contracts

The Contractor shall cooperate with any other contractors appointed by the Employer in connection with the Project and shall provide all information and reasonable assistance necessary to ensure proper coordination and successful delivery of the Project.

The Contractor shall appoint an Interface Manager, acceptable to the Engineer, responsible for the identification, management and coordination of all technical, programme and operational interfaces with other contracts and stakeholders.

• **Site Information**

The Site comprises the Paraćin – Međurovo Railway Line, excluding the Stalać – Đunis subsection, with a total length of approximately 65.2 km, forming part of Section 3 of the Belgrade–Niš Railway Modernisation Project.

The Works extend through the territories of the municipalities of Paraćin, Čičevac, Aleksinac and Niš, and include urban, suburban and rural areas. The Site comprises existing railway infrastructure together with sections of new alignment, railway stations, bridges, tunnels, road crossings, drainage structures and associated railway facilities.

The Contractor shall be deemed to have inspected and examined the Site, its surroundings, available Site Data and all other information made available by the Employer before submission of the Tender.

(a) Existing Railway Operations

The existing railway forms part of Serbia's principal north-south railway corridor and shall remain operational during the execution of the Works, except during approved possessions granted by the Employer.

The Contractor shall plan and execute the Works to minimise disruption to railway operations and shall coordinate all possessions, temporary operational restrictions and commissioning activities with the Employer, the Engineer and the railway operator.

(b) Access to the Site

Access to the Site will generally be available through the existing railway corridor and the public road network.

The Contractor shall be responsible for:

- establishing and maintaining temporary access roads where required;
- obtaining approvals required for temporary access outside the railway corridor;
- maintaining safe access for railway operations, road users, landowners and emergency services;
- restoring temporary access areas upon completion of the Works.

The timing and extent of possession of railway infrastructure will be determined by the Employer in coordination with railway operations and shall be reflected in the Contractor's programme.

(c) Land Availability

The Employer will provide access to those parts of the Site for which land acquisition has been completed in accordance with the Contract.

Where access depends upon the completion of land acquisition or the relocation of utilities, the Employer will make such areas available in accordance with the Contract and the agreed implementation programme.

The Contractor shall coordinate its programme accordingly and shall not access land outside the areas made available by the Employer without the necessary approvals.

(d) Existing Utilities

The Site contains existing overhead and underground utilities, including electricity, telecommunications, water supply, sewerage, gas and other public infrastructure.

Information regarding known utilities is included in the available design documentation. The accuracy and completeness of such information cannot be guaranteed.

The Contractor shall:

- verify the location of existing utilities prior to commencing the relevant Works;
- coordinate with utility owners;
- protect existing services from damage;
- undertake or facilitate relocations where required under the Contract.

(e) Ground Conditions

Available information regarding topography, geology, geotechnical conditions, hydrology and groundwater is contained in the Preliminary Design (IDP), investigation reports and other Site Data made available by the Employer.

The Contractor shall review all available information and undertake any additional investigations considered necessary for the preparation of the detailed design.

(f) Climatic Conditions

The Contractor shall take into account the climatic conditions normally experienced within central and southern Serbia, including seasonal variations in temperature, precipitation and river flows, when preparing the design, construction methodology and programme.

• **Design**

The Contract shall be implemented under the FIDIC Conditions of Contract for Plant and Design-Build (Yellow Book), First Edition 1999. The Contractor shall be fully responsible for the design, coordination, review, completion, approval, execution and as-built documentation of the Works in accordance with the Contract.

The Contractor shall ensure that the completed Works are fit for the purpose stated in these Employer's Requirements and comply with all applicable Laws of the Republic of Serbia, the Contract, applicable technical standards and the performance requirements specified herein.

(a) Design Scope

The Contractor shall prepare, coordinate, obtain approvals for and update, where necessary, all design documentation required for execution of the Works, including, but not limited to:

- Design for Building Permit (PGD);
- Design for Execution of Works (PZI);

- As-Built Design (PIO);
- temporary works designs;
- shop drawings;

all other drawings, calculations and technical documents required for execution, testing, commissioning and operation of the Works.

The Contractor shall verify the adequacy of the available Preliminary Design (IDP) and shall be responsible for developing the final design solution necessary for successful completion of the Contract.

(b) Available Design Information

The Employer will make available to the Contractor, for information purposes, the available design documentation and supporting studies for Subsections 3.1 and 3.3, including, as applicable:

- Preliminary Design (IDP);
- topographical surveys;
- geotechnical investigations;
- hydrological and hydraulic studies;
- environmental and social documentation;
- available utility information;
- existing railway documentation;
- other available technical studies.

The Contractor shall review the available documentation and undertake any additional surveys, investigations, analyses and design activities necessary to complete the design and execute the Works.

The Employer will also provide a Design Brief for Subsection 3.4, defining the scope of the design and the performance requirements to be achieved by the Contractor.

(c) Design Standards

The design shall comply with:

- the Laws and regulations of the Republic of Serbia;
- applicable railway legislation;
- the requirements of all competent authorities;
- the Employer's Requirements;
- the relevant Technical Specifications for Interoperability (TSIs);
- applicable European Standards (EN);
- Eurocodes;
- Serbian standards where applicable;
- UIC recommendations where specified or appropriate;
- other internationally recognised railway standards accepted by the Employer.

Where different standards apply to the same element of the Works, the Contractor shall adopt the most stringent requirement unless otherwise approved by the Employer.

(d) Technical Requirements

The design shall provide, as a minimum:

- operating speeds of up to 200 km/h, where specified in the Employer's Requirements;
- compatibility with the existing and future railway infrastructure;
- safe operation during all phases of construction and after completion;
- compliance with interoperability requirements;
- maintainability throughout the design life;
- efficient drainage and protection of railway earthworks;
- appropriate resilience against climate and environmental conditions;
- safe access for inspection and maintenance.

(e) Design Reviews and Approvals

The Contractor shall submit the design documentation to the Engineer for review in accordance with the Contract.

Review, comments, acceptance or approval by the Engineer or any public authority shall not relieve the Contractor of its responsibility for the adequacy, completeness, coordination or correctness of the design.

The Contractor shall obtain all statutory design approvals, permits and consents assigned to the Contractor under the Contract.

(f) Surveys and Investigations

The Contractor shall carry out all additional surveys, site investigations, inspections, testing and engineering analyses necessary to complete the design and execute the Works.

Any discrepancies identified between the available design information and actual site conditions shall be promptly notified to the Engineer.

(g) Design Deliverables

The Contractor shall submit all design documentation in the format, language, number of copies and electronic formats specified in the Contract.

All drawings and models shall be coordinated between disciplines and suitable for construction.

Upon completion of the Works, the Contractor shall provide complete As-Built documentation (PIO), operation and maintenance documentation, design calculations, technical manuals and other documents required by the Contract.

• **Scope of Works**

The Contractor shall be responsible for the complete design, execution, testing, commissioning, completion and remedying of defects of the Works necessary to achieve the purpose of the Contract.

The Works shall include all labour, supervision, management, design, engineering, procurement, manufacture, supply, transportation, construction, installation, testing, commissioning, temporary works, quality assurance, environmental and social management, health and safety measures, permits assigned to the Contractor, and all other activities necessary for the successful completion of the Contract.

Without limitation, the scope of the Works shall include the following principal components.

(a) Design

The Contractor shall prepare, coordinate, obtain approvals for and update, as required, all design documentation necessary for execution of the Works, including the Design for Building Permit (PGD), Design for Execution of Works (PZI), As-Built Design (PIO), temporary works designs, shop drawings, construction methodologies and all supporting engineering calculations.

(b) Railway Track Works

The Contractor shall reconstruct and modernise the railway infrastructure, including, as applicable:

- railway earthworks;
- track substructure and superstructure;
- ballast, sleepers, rails and turnouts;
- formation improvement;
- switches and crossings;
- track drainage;
- track geometry adjustments;
- construction of new double-track and single-track sections as specified in the Employer's Requirements.

(c) Civil and Structural Works

The Contractor shall execute all civil and structural works required for the Project, including:

- bridges, viaducts and overpasses;
- underpasses and culverts;
- tunnel construction;
- retaining structures;
- station buildings and railway facilities;
- passenger platforms and canopies;
- access roads and railway service roads;
- demolition of existing structures;
- construction of replacement structures;
- associated architectural works.

(d) Railway Electrification and Power Supply

The Contractor shall design and construct the railway electrification and associated electrical infrastructure, including:

- overhead contact line system;
- traction power supply installations;
- sectioning posts;
- transformer stations;

- electrical installations in stations and railway buildings;
- tunnel electrical installations;
- external power supply interfaces;
- lighting systems;
- earthing and bonding;
- lightning protection.

(e) Drainage and Hydrotechnical Works

The Contractor shall construct all drainage and water management works required for the railway, including:

- longitudinal and transverse drainage;
- culverts;
- watercourse regulation;
- erosion protection;
- stormwater management;
- station drainage systems.

(f) Railway Buildings and Ancillary Facilities

The Contractor shall reconstruct and construct railway buildings and ancillary facilities required for operation of the railway, including stations, operational buildings, maintenance facilities and associated utility infrastructure.

(g) Signalling and Telecommunications Interfaces

Signalling and Telecommunication (S&T) works under this Design & Build Contract shall be limited to the replacement of obsolete equipment on the existing alignment and the installation of new equipment on the re-aligned sections, pending implementation of a separate S&T contract for the entire Belgrade–Niš railway line. The S&T works under this Contract shall ensure uninterrupted railway operations and maintain a level of service commensurate with the existing provision until the separate S&T contract is implemented.

The Contractor shall provide all civil, structural, electrical and interface works required to facilitate the installation, testing and commissioning of the signalling and telecommunications systems, including all ducts, foundations, cable routes, equipment supports, building provisions and associated infrastructure identified in the Employer's Requirements.

(h) Temporary Works and Railway Operations

The Contractor shall design, construct, maintain and remove all temporary works necessary for execution of the Contract.

The Contractor shall plan and execute the Works so as to maintain railway operations except during approved possessions and shall implement all temporary arrangements required for the safe operation of the railway during construction.

(i) Environmental, Social, Health and Safety Measures

The Contractor shall implement all environmental, social, health and safety measures required by the Contract, the applicable legislation, the Employer's Environmental and Social Requirements, the Environmental and Social Action Plan (ESAP), the Environmental and

Social Impact Assessment (ESIA), and other Project-specific environmental and social documentation.

(j) Testing and Commissioning

The Contractor shall perform all inspections, testing, trial operation, commissioning and performance verification necessary to demonstrate compliance with the Contract and to achieve Taking-Over of the Works.

(k) Coordination and Interface Management

The Contractor shall coordinate the execution of the Works with:

- the contractor for Subsection 3.2;
- the future Signalling and Telecommunications contractor;
- the Employer;
- the Engineer;
- railway operators;
- utility owners;
- public authorities;
- other contractors engaged by the Employer.

(l) Deliverables

The Contractor shall provide all documents required under the Contract, including:

- approved design documentation;
- quality records;
- test reports;
- commissioning documentation;
- operation and maintenance manuals;
- training, where specified;
- As-Built documentation (PIO);
- digital records and other deliverables specified in the Employer's Requirements.

The above description is not exhaustive. The Contractor shall perform all works, services, supply, design activities and incidental obligations necessary to complete the Works in accordance with the Contract, whether or not every individual item is expressly described in these Requirements.

The following indicative summary table provides an overview of the principal components of the Works and their approximate scope. It is provided for information purposes only and shall not limit or modify the Contractor's obligations under the Contract.

Works Category	Indicative Scope
Design	PGD, PZI, PIO, temporary works, shop drawings
Railway Track	Approximately 65.2 km of reconstruction and modernisation
Stations	10 railway stations
Buildings	Approximately 10,000 m ² of railway buildings

Bridges	Demolition of 16 existing bridges; construction of 27 new bridges and overpasses
Underpasses	Construction of 19 underpasses
Tunnel	1 new railway tunnel (approximately 550 m)
Culverts	43 new culverts/box culverts
Hydrotechnical works	Railway drainage, regulation of watercourses and canal networks along the railway route, hydrotechnical installation in stations
Electrification	OCL, traction power supply, electrical installations
Signalling Interfaces	Civil and electrical enabling works only
Testing & Commissioning	Complete testing, commissioning and Taking-Over

- **Environmental, Social, Health and Safety Requirements**

The Contractor shall execute the Works in accordance with:

- the Laws of the Republic of Serbia;
- the Environmental and Social Policy and applicable Performance Requirements of the European Bank for Reconstruction and Development (EBRD) and EIB Environmental and Social Standards, as applicable to the Project;
- the Environmental and Social Impact Assessment (ESIA);
- the Environmental and Social Action Plan (ESAP);
- the Stakeholder Engagement Plan (SEP);
- the Labour Management Procedures (where applicable);
- all other environmental and social documents forming part of the Employer's Requirements.

The Contractor shall identify, manage, monitor and mitigate all environmental, social, health and safety risks arising from the execution of the Works.

(a) Contractor's ESHS Management System

Within the period specified in the Contract, the Contractor shall establish, implement and maintain an integrated Environmental, Social, Health and Safety Management System appropriate for the nature and complexity of the Works.

The management system shall include, as a minimum:

- Environmental and Social Management Plan (C-ESMP);
- Health and Safety Management Plan;
- Construction Traffic Management Plan;
- Waste Management Plan;
- Emergency Preparedness and Response Plan;
- Pollution Prevention Plan;
- Community Health and Safety Plan;
- Labour Management Procedures;
- Stakeholder Engagement procedures;
- Grievance Mechanism for workers;

- Community Grievance Mechanism;
- GBV/SEA/SH Prevention and Response Plan, where required under the ESAP.

These plans shall be submitted to the Engineer for review prior to commencement of the relevant activities.

(b) Environmental Requirements

The Contractor shall implement measures to minimise adverse environmental impacts, including but not limited to:

- protection of watercourses and groundwater;
- erosion and sediment control;
- dust suppression;
- noise and vibration control;
- air pollution prevention;
- protection of soils;
- management of spoil and excavated materials;
- management of hazardous materials;
- waste minimisation and recycling;
- prevention of contamination;
- efficient use of water and energy;
- protection of flora, fauna and biodiversity;
- restoration of disturbed areas following completion of the Works.

(c) Social Requirements

The Contractor shall:

- minimise disruption to local communities;
- maintain safe access to properties and public roads;
- coordinate with local authorities;
- implement the Stakeholder Engagement Plan;
- maintain an effective grievance mechanism;
- provide timely information regarding construction activities affecting the public;
- respect cultural heritage requirements;
- comply with all resettlement-related obligations applicable to the Contractor.

(d) Labor and Working Conditions

The Contractor shall comply with all applicable labor legislation and EBRD requirements regarding:

- fair treatment of workers;
- non-discrimination;
- equal opportunity;
- prohibition of child labour;

- prohibition of forced labour;
- workers' accommodation (where provided);
- workers' grievance mechanism;
- freedom of association;
- working hours and remuneration.

(e) Occupational Health and Safety

The Contractor shall establish and maintain a safe working environment throughout the Contract.

The Contractor shall, as a minimum:

- identify workplace hazards;
- undertake risk assessments;
- implement safe systems of work;
- provide training;
- provide appropriate personal protective equipment;
- investigate incidents;
- report accidents;
- maintain emergency response capability;
- protect workers from occupational diseases.

(f) Community Health and Safety

The Contractor shall implement measures to protect the public, including:

- traffic management;
- segregation of construction activities;
- public information;
- fencing and access control;
- protection against construction hazards;
- emergency response arrangements;
- coordination with emergency services.

Particular attention shall be given to maintaining safe railway operations during construction.

(g) Railway Safety

Because the Works will be undertaken on or adjacent to an operational railway, the Contractor shall implement procedures addressing:

- railway possessions;
- work adjacent to live tracks;
- electrical safety;
- overhead line safety;
- coordination with railway operations;

- emergency procedures.

(h) Monitoring and Reporting

The Contractor shall monitor environmental, social, health and safety performance throughout the Contract.

The Contractor shall submit regular ESHS reports to the Engineer in accordance with the Contract, including:

- incidents and accidents;
- near misses;
- environmental monitoring;
- waste statistics;
- training;
- grievances;
- stakeholder engagement activities;
- non-conformities;
- corrective actions.

Serious incidents shall be reported immediately in accordance with the Contract and the applicable EBRD reporting requirements.

(i) Subcontractors

The Contractor shall ensure that all subcontractors comply with the ESHS requirements of the Contract.

The Contractor shall remain fully responsible for the ESHS performance of all subcontractors.

(j) Completion

Prior to Taking-Over, the Contractor shall demonstrate that:

- temporary facilities have been removed unless otherwise agreed;
- disturbed areas have been reinstated;
- environmental obligations have been fulfilled;
- all required monitoring records have been submitted;
- outstanding ESHS non-conformities have been resolved.

• **Licence Requirements**

For execution of the contract, which will be the result of the second phase of this tender procedure, the following licences will be sought only from the successful tenderer:

- Public railway constructions design with connections (P141G2) or License – Construction of public railway constructions with connections (I141G2).
- Public railway civil constructions designs (bridges) (P142G1) or License – Construction of public railway civil constructions (bridges) (I142G1).

- Public railway civil constructions designs (tunnels) (P143G1) or License – Construction of public railway civil constructions (tunnels) (I143G1).
- Public roads and access road constructions designs (P131G2) or License – Construction of public roads and access roads constructions (I131G2).
- Public road civil constructions designs (bridges) (P132G1) or License – Construction of public road civil constructions (bridges) (I132G1).
- High and medium voltage electrical installations designs for public railway infrastructure with connections (P141E1) or License – Construction of high and medium voltage electrical installations for public railway infrastructure with connections (I141E1).
- Projects on the management of electric drive systems – including automation, measurement, and control – for public railway infrastructure and associated connections (P141E4)
- Projects of electronic communications facilities, i.e., networks, systems, or equipment of international and backbone significance (P150E3) or Construction of electronic communications facilities, i.e., networks, systems, or equipment of international and backbone significance (I150E3)

Traffic and Traffic signalling designs for public railway infrastructure with connections (P141S1).

• **Key Personnel**

The Contractor shall provide suitably qualified and experienced personnel necessary for the successful design, execution, testing, commissioning and completion of the Works.

The personnel shall possess the qualifications, professional competence and experience appropriate to their assigned responsibilities and, where required by the Laws of the Republic of Serbia, shall hold the necessary professional licences or shall work under the supervision of personnel holding such licences.

The Contractor shall appoint, as a minimum, the following key personnel:

Position	Minimum Requirements
Project Director	University degree in Engineering or equivalent; at least 20 years' professional experience, including experience managing at least two (2) major railway infrastructure projects, of which at least one (1) shall be of comparable nature (Design & Build/EPC) and complexity to the Contract.
Design Manager	Chartered or licensed civil engineer (or equivalent); at least 15 years' professional experience in multidisciplinary infrastructure design, including experience on at least two (2) railway infrastructure projects, of which at least one (1) shall be of comparable nature (Design & Build/EPC) and complexity to the Contract.
Site Construction Manager	University degree in Civil Engineering or equivalent; at least 15 years' professional experience in managing construction of major railway and/or transport infrastructure projects, including experience in at least two (2) railway infrastructure projects, of which at least one (1) shall be of comparable nature (Design & Build/EPC) and complexity to the Contract..
Railway Track Manager	University degree in Civil Engineering, Railway Engineering or an equivalent engineering discipline; at least 10 years' experience in railway track construction or reconstruction, including high-speed or mainline railways.
Structures Manager	University degree in Structural Engineering; at least 10 years' experience in construction of railway or highway bridges, viaducts and other major structures.

Tunnel Manager	University degree in Structural Engineering; at least 10 years' experience in tunnel construction or reconstruction.
Electrification Manager	University degree in Electrical Engineering, Power Engineering or an equivalent engineering discipline; at least 10 years' experience in railway electrification and traction power systems, including overhead contact line installations.
Interface Manager	University degree in Civil Engineering, Electrical Engineering, Railway Engineering or another equivalent engineering discipline; at least 10 years' experience coordinating interfaces on multidisciplinary railway or transport infrastructure projects involving multiple contracts, including experience in at least one (1) major railway infrastructure project of comparable complexity.
Quality Manager	University degree in Civil Engineering, Electrical Engineering, Mechanical Engineering, Railway Engineering or another equivalent engineering discipline; at least 10 years' experience in quality management for major infrastructure projects and implementation of ISO 9001-based quality management systems.
Environmental Manager	University degree in Environmental Engineering, Environmental Sciences, Biology, Ecology, Civil Engineering, or another equivalent environmental or engineering discipline; at least 10 years' experience managing environmental requirements on major infrastructure projects, including implementation of international financing institution (IFI) requirements.
Social Manager	Social Sciences, Sociology, Anthropology, Psychology, Law, Labour Relations, Environmental Sciences, or another equivalent social or related discipline; at least 10 years' experience managing social requirements on major infrastructure projects, including implementation of international financing institution (IFI) requirements.
Health and Safety Manager	University degree in Occupational Health and Safety, Safety Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, or another equivalent engineering or safety-related discipline; at least 10 years' experience managing health and safety requirements on railway and/or transport infrastructure projects, including experience in at least one (1) major railway infrastructure project of comparable complexity.

Specifications

General

The Works shall be designed, executed, tested and commissioned in accordance with the requirements of the Contract, the applicable Laws of the Republic of Serbia, and the standards, codes and technical requirements specified in the Employer's Requirements.

Unless otherwise specified, the Contractor shall comply with the latest applicable editions of relevant Serbian standards, European Standards (EN), Eurocodes, International Railway Standards, UIC recommendations, Technical Specifications for Interoperability (TSIs), and other internationally recognised standards applicable to the Works.

The Contractor shall ensure that all materials, Plant, workmanship, design solutions, construction methods, testing and commissioning procedures are suitable for the intended purpose of the Works and comply with the performance requirements specified in the Contract.

Where no applicable Serbian standard exists, the Contractor shall apply relevant European or internationally recognised standards appropriate for the nature of the Works, subject to the Engineer's review.

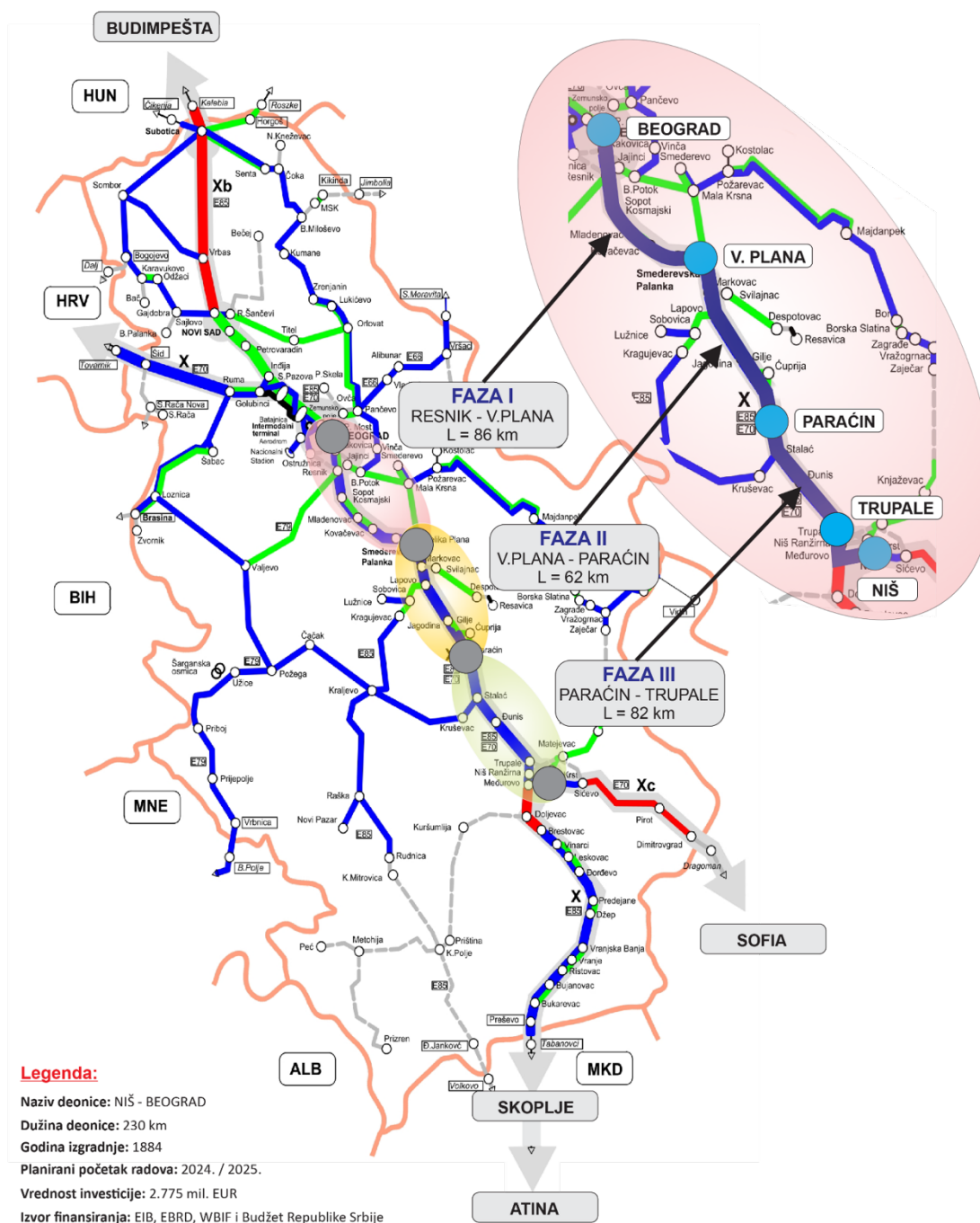
Compliance with any standard, code or specification shall not relieve the Contractor of its responsibility for the design, adequacy, safety, quality and performance of the Works.

Equivalence of Standards, Codes and Products

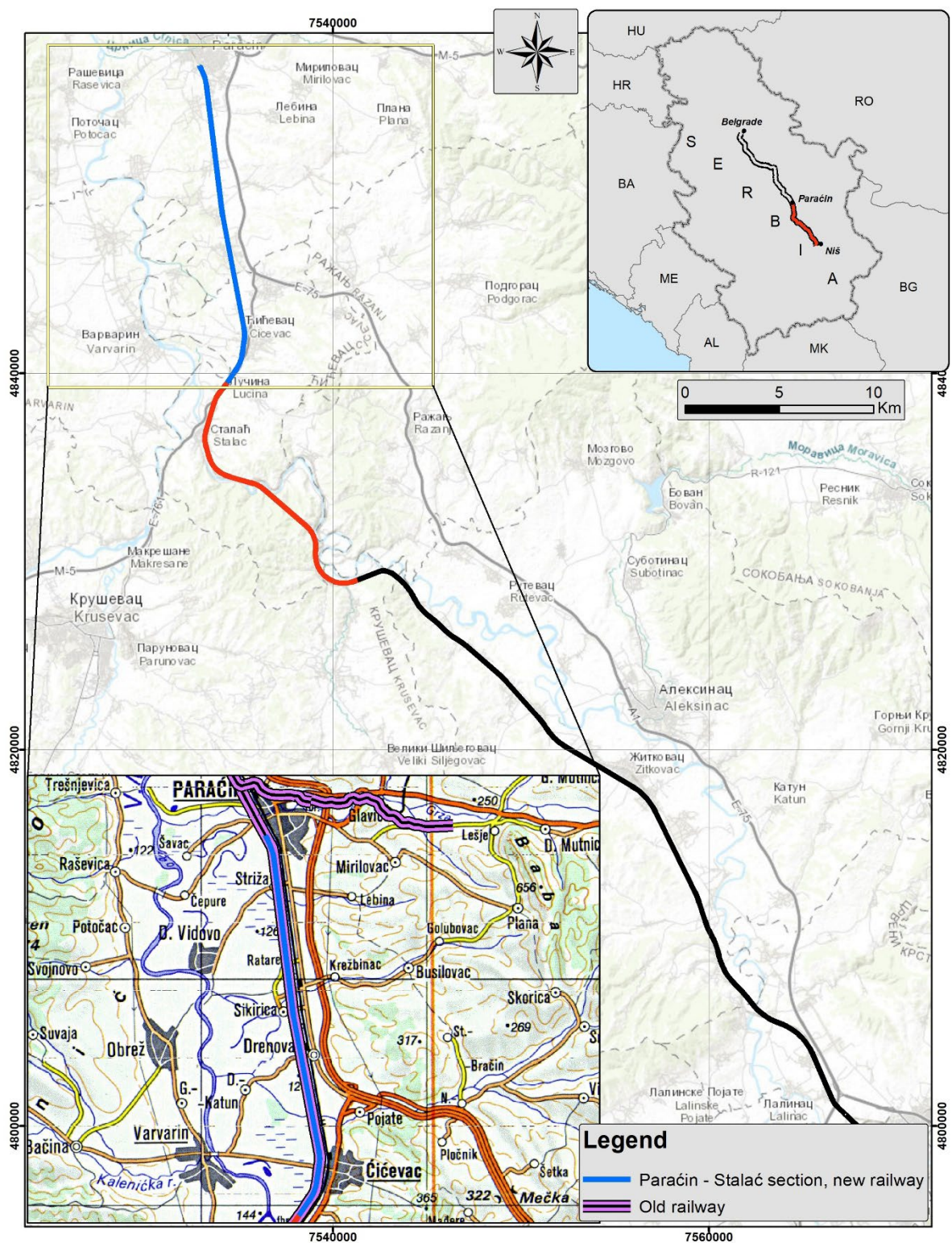
Wherever reference is made in the Specifications to specific standards and codes to be met by the materials, Plant or workmanship to be furnished, the provisions of the latest current edition or revision of the relevant standards or codes in effect shall apply, unless otherwise expressly stated in the Specifications. Where such standards and codes are national or related to a particular country or region, other authoritative standards that ensure substantial equivalence to the standards and codes specified will be acceptable.

Wherever a reference is made in the Specifications to specific brand names, trademarks, patents, copyrights, designs or other designations, other Materials or Plant of equivalent or higher quality and/or performance will be acceptable.

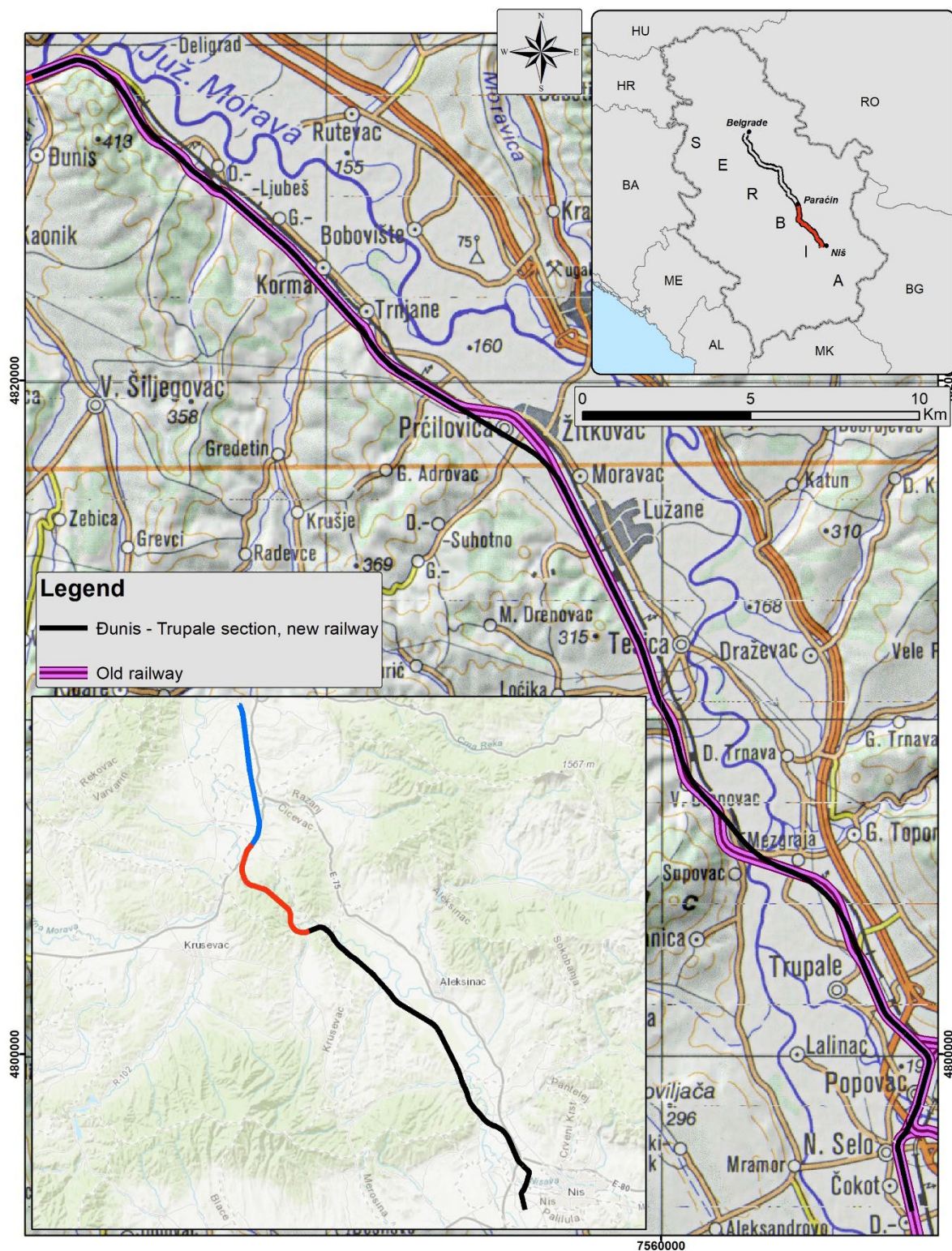
Drawings



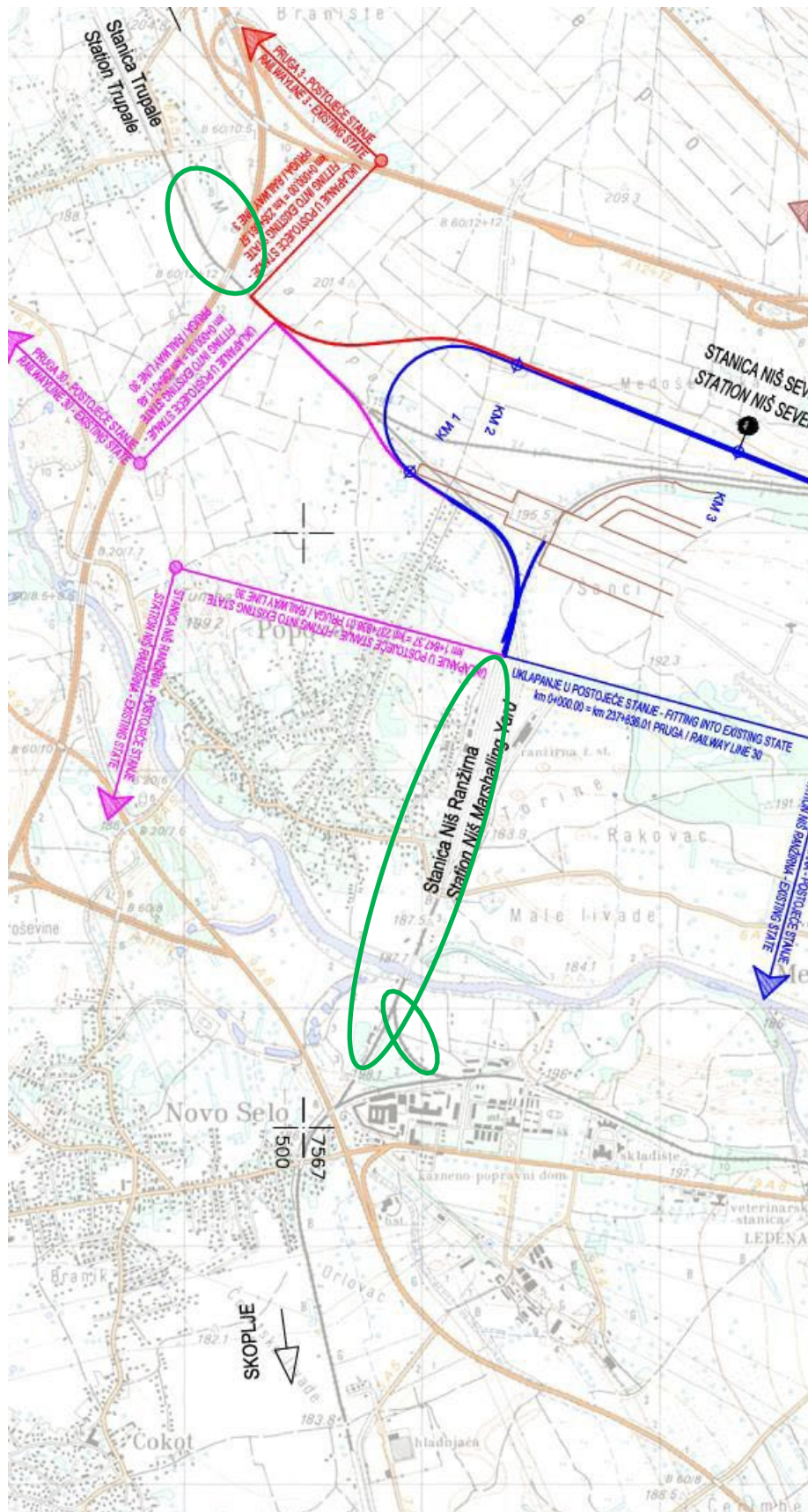
Picture 1 - Map of the Belgrade–Niš Railway Network and Project Phases



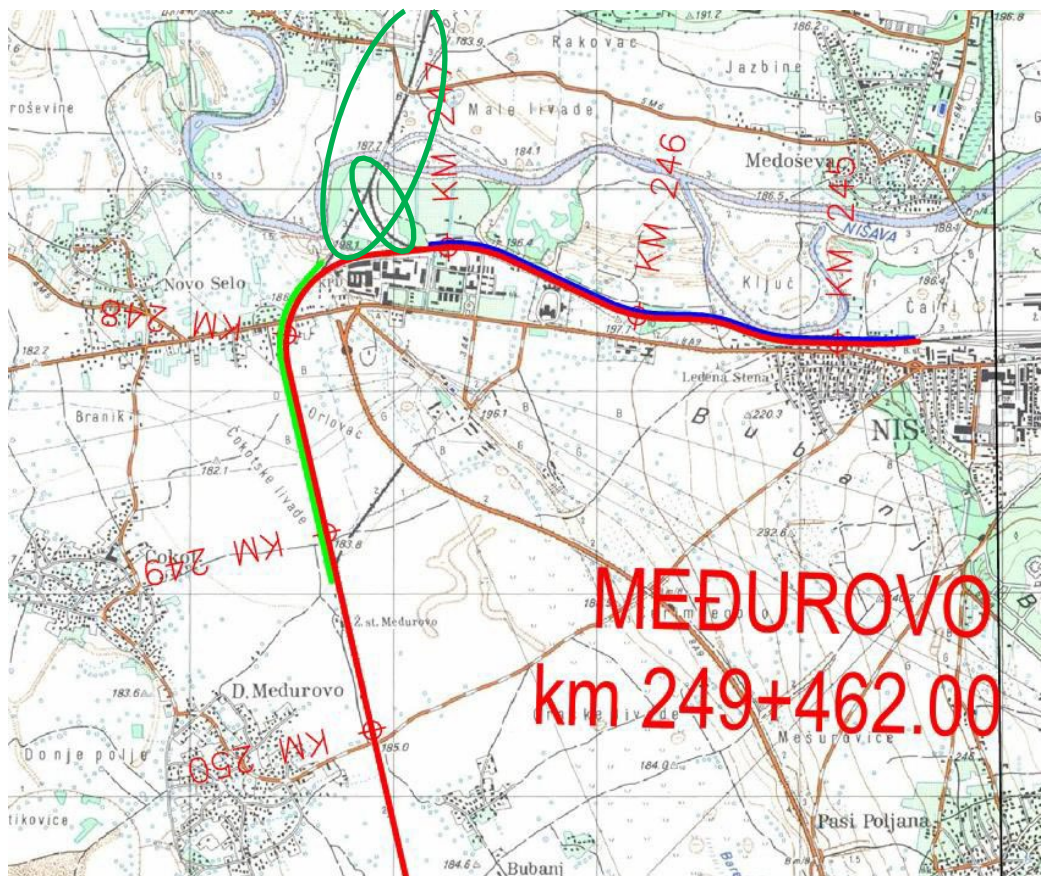
Picture 2 Map of Paracin – Trupale – Subsection 3.1 Paracin – Stalac



Picture 3 Map of Paracin – Trupale – Subsection 3.3 Djunis – Trupale



Picture 4.1 Scope of works on Subsection 3.4 Trupale – Medjurovo



Picture 4.2 Scope of works on Subsection 3.4 Trupale – Medjurovo