

TECHNICAL SPECIFICATION

**DETAILED TECHNICAL DESIGN AND
DESIGN SUPERVISION SERVICES FOR
MAIN LINE SECTION FROM RIGA
INTERNATIONAL AIRPORT TO MISA
AND FROM UPESLEJAS TO RAILWAY
STATION "RĪGA – PREČU"**

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ACRONYMS AND ABBREVIATIONS

All acronyms, abbreviations, designations, definitions, and terms defined in the applicable laws, legislation, regulations, directives, Technical Specifications for Interoperability, standards, rules, this Agreement and Rail Baltica Design Guidelines, other guidelines and documents of RB Rail AS / Client are used in this Technical Specification without modifications if not defined otherwise further. In this document where the context admits, the following words shall have the meaning assigned to them hereafter:

Table 1: Acronyms and Abbreviations

Abbreviation	Definition
AACE	International Association for the Advancement of Cost Engineering
AP	Affected party/-ies
AsBo	Assessment Body
BDMC	Building design in a minimum composition
BEP	BIM Execution Plan
BIM	Building Information Management
BIS	Building Information System of Latvia
BP	Building Permit
BoQ	Bill of Quantities
CAPEX	Capital Expenditure
CCS	Control, Command and Signalling
CDE	Common Data Environment
CIAR	Critical Items Action Report
CPM	Critical Path Method
DCMA	Defence Contract Management Agency
DeBo	Designated Body
DSS	Design Supervision Services
DTD	Detailed Technical Design
DG	Design Guidelines
EIA	Environmental Impact Assessment
EIR	Employer's (Client's) Information Requirements

ENE	Energy Subsystem
EU	European Union
GIR	Ground Investigation Report
GNSS	Global Navigation Satellite System
IB	Implementing Body
ICF	Interface Control Form
IPMA	International Project Management Association
LV	Latvia
LOD	Level of Definition
MD	Master Design
MIDP	Master Information Delivery Plan
MoM	Minutes of Meeting
NGO	Non-Governmental Organization
NoBo	Notified Body
NSA	National Safety Authority
OPEX	Operating Expenses
PCR	Project Change Request
PEP	Project Execution Plan
PMBOK	Project Management Body of Knowledge
PRM	Persons with Reduced Mobility
RAMS	Reliability, Availability, Maintainability and Safety
RB	Rail Baltica project
RBR	RB Rail AS
RFI	Request for Information
RIS	Railway Infrastructure Schematic
TC	Technical Conditions
TIDP	Task Information Delivery Plan
TS	Technical Specification

TSC	Technical Specifications for Construction
TSI	Technical Specifications for Interoperability
TWG	Technical Working Group
WBS	Works Breakdown Structure
WIP	Work in progress design materials

DEFINITIONS

The following terms are used throughout this document:

Table 2: Terms and Definitions

Term	Definition
Affected parties (AP)	State institutions, local government bodies, public and/or private enterprises, non-profit and non-governmental organizations, legal or private entities (persons) representing the owners and/or managers of the assets (roads, railways, forests, municipalities, environment, utilities [e.g. power supply, gas, oil, water, drainage etc.], etc.) that are linked to the designed layout of Rail Baltica railway line and shall be considered during the provision of Design Services.
Assessment Body (AsBo)	The independent organization or entity which undertakes investigation to provide a judgement, based on evidence, of the suitability of a system to fulfil its safety requirements.
Affected party Technical Conditions	Technical, connection conditions and requirements issued by an Affected party forming to be implemented by the Consultant as a part of the scope of the Design Services.
Beneficiary	Ministry of Transport of the Republic of Latvia.
Bill of Quantities (BoQ)	An itemised list of materials, parts, and labour together with their unit cost and description what is basis for cost calculation, required to construct, install, maintain, and/or repair the infrastructure. Classification system is described in the Detailed BIM Strategy.
BIM Execution Plan (BEP)	A formal document that defines how the project will be executed, monitored, and controlled with regards to BIM. Developed by the Consultant at project initiation to provide important information/data management plans and assignment of roles and responsibilities for model creation and data integration throughout the project.
BIM Requirements	Corresponds to BIM requirements set in Design Guidelines: BIM Employer Information Requirements (EIR), BIM Manual and templates for BIM documents / deliverables.
Building permit (BP)	Construction permit issued by state authorities based on Country's construction legislation.
Building design in a minimum composition (BDMC)	The same term as used in the construction legislation of the Country (in Latvian: "Būvprojekts minimālā sastāvā (MBP)").
CCS Contractor	Rail System Control-Command and Signalling Subsystem Contractor responsible for design and construction of the CCS subsystem for entire Rail Baltica Global Project, incl. Defect Notification Period and is contracted by RB Rail AS.

CCS Engineer	RB Rail AS employed Control-Command and Signalling subsystem engineer responsible for supervision of design and deployment of CCS systems that include the European Rail Traffic Management System (ERTMS) Level 2, interlocking, traffic management, information, and communication technologies (ICT), ancillary, station, and non-traction power supply subsystems.
Classification system	Classification system is described in the BIM Requirements. A systematic arrangement of Design and construction work aspects including assets, facility elements, functional and constructive systems, products, components, etc.
Client	RB Rail AS.
Common Data Environment (CDE)	A central repository where construction project (Design) information is stored. The contents of the CDE are not limited to assets created in a "BIM environment" and it will therefore include data, documentation, graphical model and non-graphical assets.
Compliance Report	A compliance report is a self-declaration submitted by the Consultant with each deliverable demonstrating that the Consultant adheres to Design Guidelines, standards, rules, laws and regulations.
Construction object	Part of overall construction falling under the scope of Agreement that is defined as separate object for which an individual design package (covering all required documentation and approvals to receive a Building permit) is prepared allowing to have a separate construction (including construction tendering) and taking-over process in accordance with Country's construction legislation.
Consolidated Preliminary Technical Design (CPTD)	Finalized results of review, evaluation and optimization of Preliminary design's, Design's solutions arising from interoperability, user's and railway business, optimum life cycle cost, efficiency, sustainable and environmentally friendly railway operation as well as Rail Baltica Global Project perspective. CPTD covers the set of identified necessary modifications and improvements to be evaluated in detail within the design phase. The improvements identified might result in railway alignment modifications.
Conceptual design	Preliminary (schematic) design level defined in BIM Employer's Information Requirements.
Construction Board	Entity ensuring the rule of law of the administrative proceedings of construction, including carries out control of the conformity with the administrative requirements of construction works and commissions structures for service.
Consultant	Service provider awarded with an Agreement to conduct the Services specified in the present Technical Specification and Agreement. Consultant is registered with the Construction Merchant Register of the Republic of Latvia ("Būvkomersantu reģistrs" in Latvian) and Consultant is having certified designers ("Būvspeciālisti" in Latvian) registered under the same Consultant's Construction Merchant Register of the Republic of Latvia.
Country	Republic of Latvia.
Days	Means a calendar days.
Design Expertise	Professional inspection the purpose of which is to provide evaluation of conformity of technical solution of the design with the requirements of the laws and regulations and technical conditions. Client procures an independent expertise to evaluate the Design. Consultant shall achieve positive expertise conclusion.
Design Section	Section of overall Rail Baltica railway line falling under the scope of the Services.

Design Priority Section	Part of Design Section identified as separate Rail Baltica railway line section for planning of the Design Services and management purposes.
Design Supervision Services (DSS)	Corresponds to author's supervision (in Latvian: autoruzraudzība) in accordance with the with Country's construction legislation (Construction Law of the Republic of Latvia, Cabinet of Minister regulations No.500 "General Construction Regulations", etc.).
Designated Body (DeBo)	In accordance with the Interoperability Directive (EU) 2016/797, a Designated Body (DeBo) shall perform conformity assessment for compliance with National Rules, Certifying National conformity (everything beyond TSIs).
Design guidelines (DG)	Set of predefined and standardized technically and economically justified engineering and design solutions for Rail Baltica infrastructure to be applied at design, construction and operation phases of Rail Baltica Railway, which forms an integral part of this Technical Specification. The Design guidelines may be changed by the Client, therefore the Agreement always refers to the most current version of the Design guidelines.
Detailed Technical Design (DTD)	A final stage of the design process in accordance with Construction Law of the Republic of Latvia and it gives right to start construction works. In terms of Construction Law of the Republic of Latvia, Detailed Technical Design corresponds to Building design ("Būvprojekts" in Latvian) together with all additional requirements specified in Technical Specification for the Detailed Technical Design.
ENE Contractor	Rail System Energy Subsystem Contractor responsible for design and construction of the ENE subsystem for entire Rail Baltica Global Project, incl. Defect Notification Period and is contracted by RB Rail AS.
ENE Engineer	Rail System Energy Subsystem Engineer – provides engineering services for the complete ENE Global project lifecycle starting from preparatory phase for the procurement, supervision during design and construction, till the end of Defects Notification Period and is contracted by RB Rail AS.
Global project	All the activities undertaken by the Rail Baltica railway implementing parties in order to build, render operational and commercialize the Rail Baltica railway and related railway infrastructure in accordance with the agreed route, technical parameters and time schedule.
Implementing body (IB)	SIA „Eiropas Dzelzceļa līnijas”.
Interface Control Form (ICF)	A document that includes interface requirements to implement in both sub-systems referred in the document. Interface Control Forms are owned by RB Rail AS and are to be considered and updated (if related to the outcomes of the design process) by the Consultant through the Service provision.
Interface Management Plan	A document which describes the process of managing Project interfaces.
Local facility	Means geographically limited parts of railway infrastructure with extended structural or functional elements (terminals, service facilities, etc.) which are related or needed to ensure a safe and smooth operation of the railway. Local facilities are, inter alia, the following: a passenger terminal, including passenger stations, a freight terminal including railway station, a rolling stock maintenance facility, an infrastructure maintenance facility,

	other possible facilities.
Master Design (MD)	<p>Consolidated approach of full design documentation package aimed towards Detailed Technical Design by considering all legal requirements set out in national construction legislation and following the established Design guidelines for the railway. The result of Master Design is a set of documents (incl. drawings in 3D model, BIM model) which clearly shows the scope of the project, includes a arrangement plan with an accurate placement of the railway line, detailed track layout, main CCS, ENE, electrical network details and solutions of other design disciplines – structures, roads, utilities, environmental measures, drainage, fences, land acquisition etc. The scope of this set has to be wide and precise enough so that the main details and the main requirements for precise detalisation are clear.</p> <p>In terms of Country's construction legislation, Master Design ("Būvprojekta pamatrisinājumi") is not applicable in Country's construction legislation, however required by RBR as separate stage during provision of the Design Services to align Global project solutions and at the early level of Detailed technical design preparation together with all requirements specified in Technical Specification for the Master Design.</p>
Notified Body (NoBo)	A body responsible for assessing the conformity or suitability for use of the interoperability constituents or for appraising the 'EC' procedure for verification of the subsystems.
National Safety Authority (NSA)	<p>Construction Board for railway infrastructure. The institution independent in its organization, legal structure and decision-making from any railway undertaking, infrastructure manager, applicant or contracting entity and from any entity awarding public service contracts. National Safety Authority is entrusted with authorization for placing in service the trackside control-command and signalling, energy and infrastructure subsystems constituting the Union rail system.</p> <p>The State Railway Technical Inspectorate ("Valsts dzelzceļa tehniskā inspekcija" in Latvian) fulfils National Safety Authority function in Latvia.</p>
Operational Plan	<p>Comprehensive set of documents defining all long-term operational principles of the Rail Baltica railway line on the wider corridor of Warsaw - Helsinki and describing the future structure of train traffic and operational processes on Rail Baltica railway line, outlining railway capacity, establishing operational requirements regarding the infrastructure, rolling stock, and outlining the related effort for maintenance of the infrastructure and rolling stock. Operational Plan also defines the infrastructure parameters for Rail Baltica railway line covering speed limitations, track layouts of the stations, main line and facilities, type of turnouts, main infrastructure objects. Timetable and travel time defined in the Operational Plan are the essential targets to be complied with.</p> <p>The Operational Plan may be changed by the Client; therefore, the Agreement always refers to the most current version of the Operational Plan and RIS.</p>
Preliminary design (PD)	Completed pre-design stage, including special planning and environmental impact assessment studies, of Rail Baltica railway prepared in accordance with Country's national construction legislation and approved at the State level.
PRM TSI	"Commission Regulation (EU) No 1300/2014 of 18 November 2014 on the technical specifications for interoperability relating to accessibility of the Union's rail system for persons with disabilities and persons with reduced mobility".
Project Execution Plan (PEP)	A governing document that defines how a Project is to be executed, monitored, and controlled.
Rail Baltica railway	A new fast conventional double track electrified standard gauge (1435 mm) railway line on the route from Tallinn through Pärnu - Riga - Panevėžys - Kaunas to Lithuanian - Polish border, with the connection of Kaunas - Vilnius.
Railway infrastructure	Correspond to the Directive 2012/34/EU of the European Parliament and of the Council of 21 November 2012 establishing a single European railway area (recast), as well as it includes freight and passenger terminals and infrastructure and rolling stock maintenance facilities and the

	ground underneath them and the airspace above them to the extent that the national legislation permits the ownership of the ground and the airspace.
Railway station	Part of a railway containing necessary sidings and necessary equipment, which allows to perform train traffic organization (change of direction, overtaking, crossing) and commercial (passenger exchange, freight operations, etc.) operations. The border of a railway station is a station border (an entry signal or a border sign).
Reliability, Availability, Maintainability and Safety	As per RAMS requirements and RAMS methods, the obligatoriness Directives, Regulations and Standards following the Directives (EU) 2016/797 and Regulation (EU) 2013/402, the standard EN50126-1, Rail Baltica RAMS Design Guidelines and procedures.
Technical Working Group (TWG)	Group of technical experts from Client, Implementing Bodies and involved parties nominated by Client specifically to deal with administrative and technical matters during Agreement implementation.
Technical Specification (TS)	This document with all its Annexes and references, which is an integral part of the Agreement.
Technical Specifications for Interoperability (TSI)	"TSIs define the technical and operational standards which must be met by each subsystem or part of subsystem in order to meet the essential requirements and ensure the interoperability of the railway system of the European Union." as defined in Directive (EU) 2016/797.
Value Engineering (VE)	Analysis of different technical options from the perspective of Global project to increase functionality for the increased value of the infrastructure and provide the most cost-effective and efficient ways to achieve the required final result, without jeopardising safety, quality and overall integrity.
Design Data	Collection of design information and solutions produced until publishing of this procurement.

1 General

1.1 Introduction

The Baltic countries Estonia, Latvia and Lithuania have historically been linked to the east-west railway transport axis using the 1520 mm gauge railway system. Because of the existing historical and technical constraints, the existing rail system is incompatible with mainland European standards, thus there is a consensus that Estonia, Latvia and Lithuania need to be fully integrated into the wider European rail transport system. Currently there is no efficient 1435 mm railway connection along the Warsaw-Kaunas-Riga-Tallinn axis, i.e. there are missing links or significant bottlenecks. Thus, there are no direct passenger or freight services along the railway axis as the existing infrastructure does not allow for competitive services compared to alternative modes of transport. Thus, the clear majority of the North-South freight is being transported by road transport and the overall accessibility in the region is low.]

The ambitions of the Rail Baltica Global project (Global Project) are:

- to become a powerful catalyst for sustainable economic growth in the Baltic States;
- to set a new standard of passenger and freight mobility;
- to ensure a new economic corridor will emerge;
- sustainable employment and educational opportunities;
- an environmentally sustainable infrastructure;
- new opportunities for multimodal freight logistics development;
- new intermodal transport solutions for passengers;
- safety and performance improvements;
- a new value platform for digitalization and innovation;
- completion of Baltic integration in the European Union transport ecosystem.

Rail Baltica is already designed to become a part of the EU TEN-T North Sea – Baltic Core Network Corridor, which links Europe's largest ports of Rotterdam, Hamburg and Antwerp – through the Netherlands, Belgium, Germany and Poland – with the three Baltic States, further connecting to Finland via the Gulf of Finland short sea shipping connections with a future fixed link possibility between Tallinn and Helsinki. Further northbound extension of this corridor shall pave the way for future connectivity also with the emerging Arctic corridor, especially in light of the lucrative prospects of the alternative Northern Circle maritime route development between Europe and Asia. Furthermore, the North Sea – Baltic Corridor crosses with the Baltic-Adriatic Corridor in Warsaw, paving the way for new supply chain development between the Baltic and Adriatic seas, connecting the Baltics with the hitherto inadequately accessible Southern European markets. In a similar fashion, Rail Baltica shall strengthen the synergies between North-South and West-East freight flows, creating new transshipment and logistics development opportunities along the Europe and Asia overland trade routes. The new Rail Baltica infrastructure would, therefore, not only put the Baltics firmly on the European rail logistics map, but also create massive opportunities for value creation along this infrastructure with such secondary economic benefits as commercial property development, revitalization of dilapidated urban areas, private spin-off investment, new business formation, technology transfer and innovation, tourism development and other catalytic effects. Rail Baltica aims to promote these effects from the early stages of the Global Project, learning from the key global success stories and benchmarks in this regard.

The contracting authority RB Rail AS was established by the Republics of Estonia, Latvia and Lithuania, via state-owned holding companies, to coordinate the development and construction of the fast-conventional standard gauge railway line on the North Sea – Baltic TEN-T Core Network Corridor (Rail Baltica II) linking three Baltic states with Poland and the rest of the EU.

The shareholders structure of RBR is presented in Figure 1.

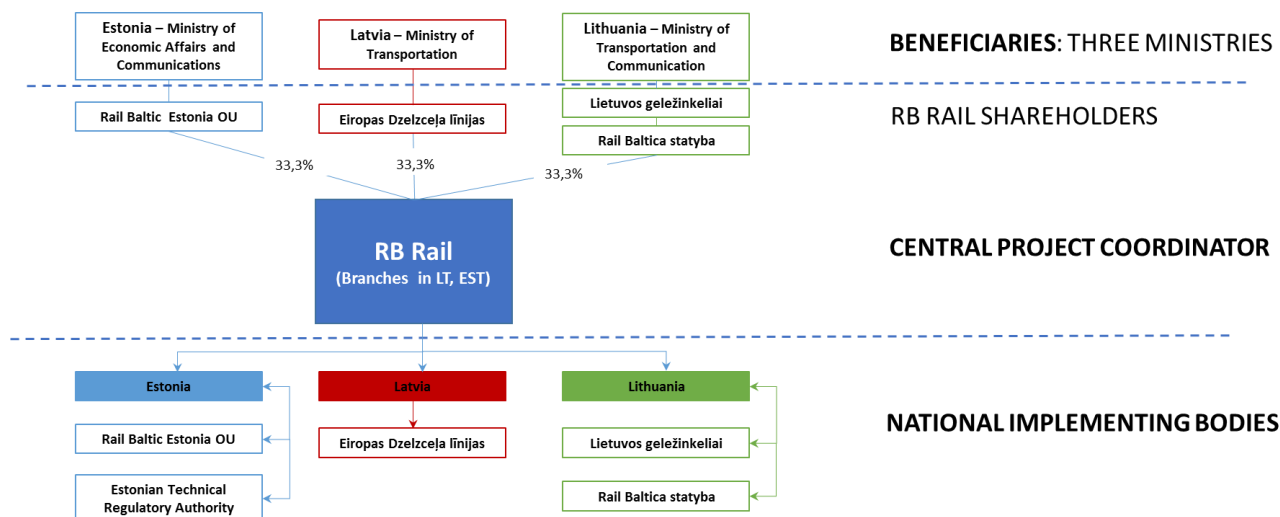


Figure 1: The shareholders' structure

RBR together with governments of Estonia, Latvia and Lithuania (represented by the ministries in charge of transport policy) have applied for the CEF co-financing in 2015, 2016 and 2017 (three applications in total). Three applications were successful and INEA grants are available to support the Global Project expenses.

Rail Baltica is a joint project of three EU Member States – Estonia, Latvia and Lithuania – and concerns the building of a fast conventional double track 1435 mm gauge electrified railway line on the route from Tallinn through Pärnu (EE), Riga (LV), Riga International Airport (LV), Panevėžys (LT), Kaunas (LT) to the Lithuania/Poland state border (including connection Kaunas - Vilnius). In the longer term, the railway line could potentially be extended to include a fixed link between Helsinki and Tallinn, as well as integrate the railway link to Warsaw and beyond.

The expected core outcome of the Rail Baltica project is a European gauge (1435mm) double-track railway line of almost 900 km in length meant for both passenger and freight transport and the required additional infrastructure (to ensure full operability of the railway). It will be interoperable with the TEN-T Network in the rest of Europe and competitive in terms of quality with other modes of transport in the region. The indicative timeline and phasing of the project implementation can be found here: <http://www.railbaltica.org/about-rail-baltica/project-timeline/>.

Further information is available in <http://www.railbaltica.org/>

1.2 Legal references

The Consultant shall follow EU directives, all Country's construction and other national legislation, EU standards, Country-specific legislation/standards/rules and other legal acts applicable for the provision of the Design Services. Main applicable legal acts (non-exhaustive list) are shown below in the chapter:

Table 3: Main applicable legal acts (non-exhaustive list)

No.	Title	Proposes resources ¹
1.	Country's register of legal construction acts and other legal acts related with the implementation of the Services	https://em.gov.lv/lv https://em.gov.lv/lv/nozares_politika/buvnieciba/normativie_akti/normativo_aktu_saraksts/ http://www.vzd.gov.lv/lv/normativie-akti/normativie-akti/ http://www.lgia.gov.lv/LGIA/Normativie_akti/Noteikumi.aspx
2.	Country's register of legal acts	https://likumi.lv/
3.	National environmental and spatial planning legislation	http://www.varam.gov.lv/lat/ http://www.varam.gov.lv/lat/likumdosana/ https://www.daba.gov.lv/public/ https://geolatvija.lv/geo/

1.3 Description of the Services

The Services include Design and Design Supervision Services for the construction of the railway track substructure, superstructure as well as related civil structures, roads, the Affected parties impacted infrastructure and utilities on the new standard gauge (1435 mm) double-track electrified railway Rail Baltica line from Riga International Airport to Misa and from Upeslejas to railway station "Rīga – Preču".

The Design up to Detailed Technical Design level shall be prepared in accordance with the Design Guidelines (Annex No. 1), Operational Plan (Annex No. 2), EIA (Annex No. 3), TSIs requirements, Building Permits, Technical Conditions of the Affected Parties (Annex No. 16), etc., and for a design speed of up to 249 km/h for passenger trains and up to 120 km/h for freight trains. The Services also includes reconstruction of existing 1520 mm gauge railway infrastructure.

The Consultant shall note that Preliminary Design, EIA, Value Engineering, Initial ground investigations (geotechnical investigations) for Value Engineering and preferred RB alignment alternative with the structures have been approved for further Design implementation. Building Design in Minimum Composition (BDMC) prepared and Building Permits (BP) with the Technical Conditions (TC) received from the Affected parties for all of the BP, except BP3.4., where new BDMC, BP and TC process shall be initiated. Further TC validity shall be ensured by the Consultant. The very conceptual WIP Master Design solution have been prepared (Annex No. 17), which shall be detailed to the DTD level. Further investigations (geotechnical, geodetic and topographical, etc.) shall continue. Design interface alignment with the other designers, design disciplines, system (CCS, ENE) solutions, the external neighbouring designs (roads, municipality, railway, utilities, etc.) processes shall be provided.

For the territories impacted by the design solutions all the required land acquisition cards with the supporting information shall be prepared at the Master Design.

The Consultant shall ensure sufficient teams of experts, including mandatory certified experts to ensure preparation and approval of deliverables in English and Latvian languages, as well as the approvals of DTD in accordance with the construction legislation (including design expertise, NoBo/AsBo, the Affected parties approvals and the Construction Board).

The above description of the main Services are defined in this Technical Specification.

¹ Client shall not be responsible for the availability and content of the information available online (except for www.railbaltica.org website).

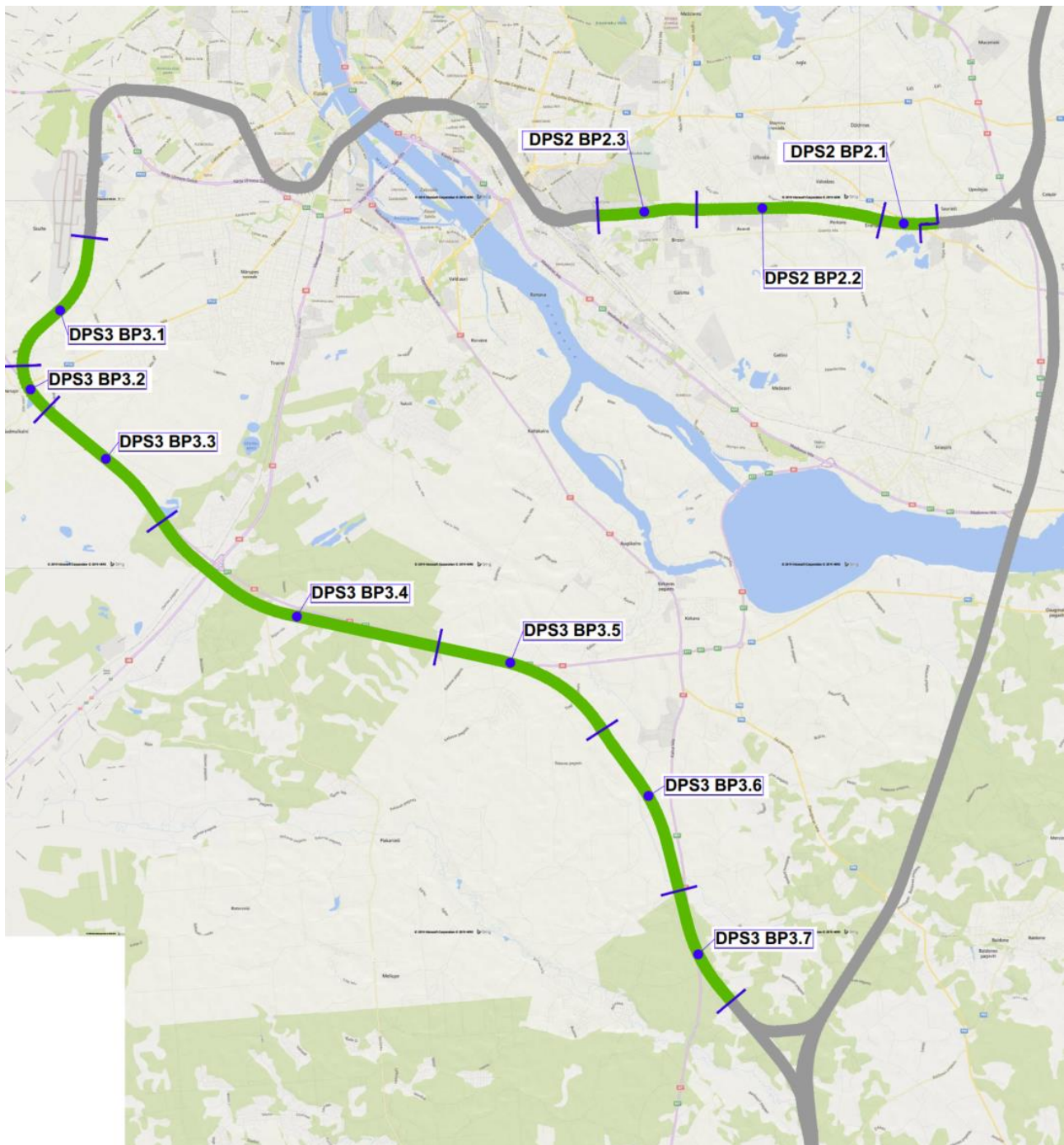


Figure 2: Location of mainline section

1.4 National state institutions related to the Design Services

1.4.1. The following table provides the list of main Country's national state/regulatory institutions (non-exhaustive list) as a guidance for the Consultant to consider throughout the Agreement implementation.

Table 4: Main Country's national state/regulatory institutions (non-exhaustive list)

No.	Title	Online link
1.	The State Railway Technical Inspectorate (Valsts dzelzceļa tehniskā inspekcija)	http://www.vdzt.gov.lv
2.	The State Construction Control Bureau of Latvia (Būvniecības valsts kontroles birojs)	http://bvkb.gov.lv/
3.	The Latvian State Roads (VSIA Latvijas Valsts ceļi)	https://lvceli.lv
4.	Riga city Development department (Rīgas valstspilsētas pašvaldības Pilsētas attīstības departaments) This entity fulfils Construction Board functions in Riga city.	http://www.rdpad.lv/
5.	Salaspils municipality Construction Board (Salaspils novada būvvalde)	http://www.salaspils.lv/
6.	Ropaži municipality Construction Board (Ropažu novada pašvaldības būvvalde)	https://www.stopini.lv/ https://www.ropazi.lv/
7.	Marupe municipality Construction Board (Mārupes novada būvvalde)	http://www.marupe.lv/
8.	Olaine municipality Construction Board (Olaine novada pašvaldības būvvalde)	http://www.olaine.lv/
9.	Kekava municipality Construction Board (Kekava novada būvvalde)	http://www.kekava.lv
10.	AS Sadales tīkls	https://sadalestikls.lv/
11.	Augstsprieguma tīkls AS	https://ast.lv/
12.	AS Gaso	https://www.gaso.lv/
13.	VAS "Latvijas dzelzceļš"	https://www.ldz.lv/

1.4.2. The Consultant shall consider and follow any legal acts, rules or regulations issued by the Country's national institutions and applicable for the implementation of the Design Services and Design Supervision Services.

2 Scope of the Services

2.1 Main task

2.1.1. The Consultant shall perform all necessary tasks to provide the Services and to get approval of the deliverables of the Design Services in compliance with Rail Baltica Global project requirements, the Design Guidelines, Operational Plan, EIA, Country's national legislation and standards, TSI requirements and this TS. The main tasks part of the scope of the Services of the Consultant are as follows:

- (a) review and analyse all references necessary for the provision of services under the Agreement;
- (b) familiarize himself with VE and other related input documentation;
- (c) develop and improve solutions included in the BDMC and initial (conceptual) solutions of MD (as in WIP Annex No. 17) and further detail solutions in Master Design and Detailed Technical Design deliverables. BDMC solutions have been prepared according to approved VE which was based on PD solutions, CPTD recommendations and included the Consultant's option;
- (d) develop MD to determine and ensure the Client and the Consultant of the principal outcome of the Detailed Technical Design;
- (e) undertake necessary site investigations, including geodetic, topographical, geotechnical, hydrometeorological, environmental, hydrology, hydrogeological, etc.;
- (f) based on the accredited laboratory tests carry out the quality check of mineral materials (in accordance with the requirements in Design Guidelines) from local quarries to be used in substructures;
- (g) analyse existing data on archeologic, cultural heritage objects and implement/complete implementation of necessary investigations;
- (h) obtain any permits required to start, implement and complete the Design Services;
- (i) proactively apply for any information from Client, and to cooperate with him, in order to implement this information in the deliverables of the Design Services;
- (j) apply for technical conditions from Affected parties and implement the received requirements that fall under the concept of Rail Baltica Global project;
- (k) cooperate with all parties involved in the approval process and obtain any approvals required during the design process (from Client, National Safety Authority, NoBo, AsBo, Design expertise/review service provider, Affected parties, etc.) including obtain agreements/approvals with landowners, where design solutions are foreseen/designed outside of road and railway right of way (RoW);
- (l) prepare BP documentation (Building Case in Building information system (BIS)) for the existing Building Permits and apply for the necessary number of Building Permits by ensuring the provision of necessary design data in accordance with Country's construction legislation;
- (m) obtain necessary number of Building Permits, including permits for cultural heritage objects, in accordance with Country's construction and other national legislation by implementing requirements received from involved Country's state institutions during the Building Permits' issuing process;

- (n) cooperate with NoBo, AsBo, design expertise providers in order to implement their comments and receive their acceptance for the design;
 - (o) ensure the coordination of provision of the Design Services (including, inter alia, any required interdisciplinary design checks) with Implementing bodies, Affected parties and any other state, private entities, persons involved in the design process;
 - (p) prepare Detailed Technical Design fit for purpose;
 - (q) support the Client with all the relevant data for the EIA and/or environmental screening procedures. Implement all other EIA procedures/activities and relevant mandatory environmental screening procedures, including approvals'/permissions' obtainment, monitoring and surveys;
 - (r) in case of deforestation, harvesting, transplantation or other removal of existing forest, protected trees and shrubs or other vegetation is needed to be foreseen in order to implement construction and installation works later – to perform field studies, to prepare mandatory documents (e.g., deforestation plans, etc.), perform all relevant mandatory procedures, including approvals' and permissions' obtainment;
 - (s) carry out public consultations and presentations on different aspects of technical solutions of designs, environmental impact assessments and further development approaches;
 - (t) prepare Bill of Quantities and cost expenditure (construction cost estimation) calculations for each Construction object;
 - (u) provide the Design Supervision Services, including cultural heritage objects' design (reconstruction) supervision, during the construction in accordance to the Country's national legislation and Agreement's conditions;
 - (v) prepare maintenance requirements and manuals for the designed objects. Maintenance manuals shall consider the most optimum ways of maintaining the infrastructure objects with regards to, inter alia, safety, ease and speed of maintenance;
 - (w) provide any other Services required in accordance with applicable national and international legislation, as well as requirements falling under the Global project concept that may be required and expected from a responsible and prudent Consultant;
 - (x) investigate the possibly contaminated areas and prepare the technology (to be applied during the construction) for the disposal / utilisation of hazardous substances or mixtures;
 - (y) be available for regular liaison as and when required with the Client and Affected parties as may be required for the successful completion of the Services;
 - (z) The Consultant shall develop necessary solutions and requirements for safety measures related to the railway protection zones considering the Design Guidelines and Country's national legislation;
 - (aa) Design of right of ways, red lines and protection zones for railway and other infrastructure where it is applicable by Country's national legislation;
 - (bb) Coordination and development of interface documents with neighbouring designs and design sections, point type objects, railway subsystems, affected parties.
- 2.1.2. The Consultant shall design road infrastructure considering applicable requirements of RB Design Guidelines (Annex No. 1).
- 2.1.3. Consultant for the bearing capacity calculations shall consider the loads of all constructions, regardless their level of detalisation in Master design or Detailed Technical design as well as relevant construction phases, methods and equipment. All bridges, overpasses, eco-ducts, tunnels, culverts,

segregated grade crossings, railway substructure and superstructure shall be designed with the consideration and calculations of all the impacts and all the loads, including the locations of the future loads of the catenary poles, lighting poles, GSM-R towers, substations, noise barriers, retaining walls, signals, landscaping and other objects. In case of using or adjusting existing structures for Rail Baltica line, Consultant shall conduct all required data for existing object, evaluate impact from new infrastructure, carry-out re-calculations if necessary and propose the most technical-economical way forward.

- 2.1.4. The Consultant shall be responsible at its own cost for the correction and resubmission for the confirmation/approval process (if necessary) at any stage of provision of the Design Services in case of design mistakes and/or noncompliance with Technical specification, Rail Baltica Design Guidelines, Country's construction legislation or other mandatory requirements.
- 2.1.5. The Consultant shall prepare land acquisition plans (if necessary for the approved design option) in accordance with the land acquisition approach agreed with the Client, consisting of layouts, drawings, updated (up to date) cadastral information and explanatory note on territories, which need to be obtained for railway and its related infrastructure, with cadastral unit markings, boundaries and surface data.
- 2.1.6. Separately for every Building Permit the Consultant shall prepare the construction technology and work organisation planning covering construction phasing (calendar planning), general layout of construction works, site preparation requirements, the labour protection and health protection plan, explanatory description, assembly load schemes, traffic organisation plan construction technologies to be used, logistics and construction works organisation, additional land plots necessary. Construction technology and work organisation planning shall be developed in accordance with Country's legal acts. The Consultant must prepare a design by assessing the requirements of the EIA and TC for the preparation of construction sites, warehouses for the construction materials, waste management, construction equipment and vehicles used for construction. The detalisation level of construction technology and work organisation plan in Master design and Detailed technical design shall be agreed with the Client.
- 2.1.7. The Consultant shall analyse all the requirements for design and works mentioned in this Technical Specification and the documents derived therefrom, prepare, submit all necessary applications and fulfil the Design Services in accordance with additionally obtained requirements and conditions.
- 2.1.8. The Consultant shall consider the design solutions having as low as possible negative impact on the capacity as well as operation of the existing railways, roads, utilities and other infrastructure during and after the construction. The design solutions (as well as construction technology solutions) influencing the capacity of any infrastructure shall be aligned with the corresponding Affected parties. The design solutions shall be designed considering the existing AP infrastructure and shall ensure connectivity and compatibility with it.
- 2.1.9. The Consultant shall be responsible for undertaking all the Services required and that can be reasonably expected from an experienced, responsible and prudent design contractor for similar Services, including and especially contractor for similar services in Latvia.
- 2.1.10. The design must be technically and economically justified and the Consultant must avoid overdesign (design that is excessively complex, expensive or that exceeds usual standards) wherever possible.
- 2.1.11. The Scope of Services described in the Technical Specifications are minimum and the Consultant shall foresee the required input information for the Services (including evaluation and design work

on alternatives/options) and to design the best selected alternative with all the respective approvals.

- 2.1.12. The Consultant shall comply with the BIM Requirements and shall design in a BIM environment as requested in the Technical Specification.
- 2.1.13. The Consultant shall provide up to date design information for implementation in Global Project GIS portal and regularly (reasonable frequency agreed between the Consultant and the Client) share work in progress design information with the Client.
- 2.1.14. The Consultant is obliged to answer to the Client's questions, concerns and requested justifications no matter what design stage it is.
- 2.1.15. The Consultant shall follow already established Site codification (RBR-VolSysZone) for all elements and use it in all required documentation, models and other data fields. The list will be provided by the Client. All additions, deductions or modifications of Site codification table can be performed only with the Client's approval.

2.2 Country specific scope of the Design Services

- 2.2.1. The Consultant shall design the demolition of the objects, buildings and structures required to be demolished and removed (including those not indicated in the PD, Value Engineering and Master design solutions).
- 2.2.2. The Consultant shall receive preliminary approvals from the Affected parties of the proposed technical solutions during Master design, in order to secure further DTD elaborations without modifications.
- 2.2.3. The Consultant shall be responsible for the amendments in Building Permits or Building design in a minimum composition (BDMC), according to the applicable law and legislation, if applicable and necessary during the provision of the Design Services. Especially, but not only, this requirement would be applicable to the construction objects of Affected parties (e.g., utilities – new power supply connections, high voltage power supply lines, high pressure transmission gas pipelines etc.) which could require a separate Building Permit.
- 2.2.4. The Consultant shall not be responsible for the land acquisition process. However, the Consultant shall put all efforts to ensure that the process of provision of the Design Services is implemented. In case the land acquisition process limits the provision of Design Services, the Consultant shall prove that there are no other possibilities to continue the provision of the Design Services, but wait for the completion of land acquisition process.
- 2.2.5. The Consultant shall order a road safety audit and evaluate its recommendations according to the applicable legislation.
- 2.2.6. The Consultant shall foresee public transport detours and coordinate the routes with local municipalities, entity responsible for public transport and other Affected Parties per necessity.
- 2.2.7. The Consultant shall integrate all the requirements of EIA and SEB Opinion No.5. (hereinafter – environment requirements) for the applicable design sections in to the MD and DTD as well as to prepare separate additional chapter in DTD describing every applicable requirement integration into the DTD and further requirement implementation plan during construction. Based on the design data and the information given by Client the Consultant shall analyse what Design Services is already done and approved, and what is missing and to be done by Consultant. Summarized environment requirements are attached in the Annex No. 7 ("Implementation plan of environmental impact assessment conditions for Rail Baltica project in Latvia").

- 2.2.8. Consultant shall be responsible to comply with the environment requirements all over the Design Services and in deliverables. For that purpose, during the Design Services period, the Consultant shall also carry out all the additional monitoring, assessments, consultations, investigations and necessary activities of the environment requirements with the involvement of certified experts in the respective field. The Consultant shall coordinate all the environment requirements and prepare the required applications/reports/amendments and receive all the necessary approvals from the respective responsible environmental authorities.
- 2.2.9. Taking into the account the Client's EIA implementation plan, as attached in the Annex No. 7 ("Implementation plan of environmental impact assessment conditions for Rail Baltica project in Latvia") the Consultant shall integrate the activities/requirements of EIA implementation plan in the Services and deliverables. The environment requirement implementation process during the Design Services for the applicable sections shall be submitted together with the progress reports. Every quarter the Consultant shall provide environment reports about EIA implementation plan covering specific sections, such as monitoring, assessment, actions and measures carried out and planned to be carried out.
- 2.2.10. The Consultant shall implement requirements set in mammal monitoring program for the Rail Baltica project sections in Latvia (in the Annex No. 9. "Mammal monitoring program for newly constructed railway lines for the Rail Baltica section in the territory of Latvia") which has been approved by the Nature Conservation Agency in March 2021, and defines different monitoring phases and species which shall be monitored during the Design Services, summarized in report and approved with the Nature Conservation Agency. First stage two year pre-construction mammal monitoring results are summarized in Annex No. 10 ("Mammal monitoring report of the mainline section through Riga"). According to Mammal monitoring program requirements only third year dormouse monitoring shall be conducted and summarized in report during the design services.
- 2.2.11. For the reference and design purposes of animal passages in Design Section, the first draft of mammal monitoring program had been approved in April 2018 and feasibility study had been carried out and Interim monitoring report had been approved by the Nature Conservation Agency in July 2018. (in the Annex No. 6 mammal monitoring program "Monitoring program for the European gauge railway line Rail Baltica impact to the mammals" . and "Monitoring interim report, A5 and C3 section feasibility study and specification of activity"). Bird monitoring program for the Rail Baltica project sections in Latvia (in the Annex No. 11. "Rail Baltica bird fauna monitoring program") has been approved by the Nature Conservation Agency in July 2023, which defines that in DS1 section bird monitoring is not necessary.
- 2.2.12. The Consultant shall prepare all the technical information, solutions, layout drawings, technical descriptions, expert's assessments and all the supporting information as from the Consultant's perspective for the respective BPs or Design Priority Section for the environmental procedures (including application for environmental screening or new EIA) as requested by the authorities. The Client shall be responsible for the communication, applications and coordination of the further environmental procedures. Applications to receive TC, including amendments of TC shall be Consultant's responsibility.

2.3 Main objects

- 2.3.1. The main objects, inter alia, falling under the Consultant's scope of Services that must be fully addressed in the Design are as follows:
- (a) earthworks (including soil mass balance (analysis of reuse of excavated material), including analysis of potential material storage places), embankment, cutting, subgrade, blanket layer (sub-ballast);

- (b) railway superstructure, i.e. railway tracks covering turnouts, ballast, rails, concrete sleepers/beamers with the fastenings, slab track structures, etc.;
- (c) station tracks, platforms, depot and multimodal access track connections (if required), passing loops and crossovers;
- (d) drainage, ditches, culverts, groundwater and storm water management systems;
- (e) structures (bridges and tunnels (e.g. railway, road, pedestrian, animal etc.), road viaducts, railway viaducts, retaining walls, eco-ducts (animal crossovers), segregated grade pedestrian crossings) and necessary equipment (e.g. lifts, pumping stations, lighting (including power supply connections and/or other utilities), etc.);
- (f) road infrastructure (maintenance roads, access roads, merchant roads, municipality roads, state roads, home roads, etc.), including lighting, lighting power supply and other necessary equipment to ensure railway (and its related infrastructure's, AP impacted infrastructure's) safety, maintainability, accessibility and connectivity as well as connection with existing road infrastructure;
- (g) cable channels and manholes (with the required spare capacity) for the main signalling, communication cables, cable ducts to the turnout point machines, point heating systems, axle counters and signals, passenger platforms with the access walkaways/equipment and cable ducts, power supply substation land plot layouts;
- (h) additional cable channels and manholes for the future communication needs;
- (i) all structures/solutions/equipment for PRM, fences with access gates, noise barriers (including ones for related infrastructure or Affected parties infrastructure, if required), separation walls, retaining walls and other structures for different infrastructures;
- (j) landscaping for the railway right of way, designed structures and objects of the Affected parties, designed roads and road bridges etc.;
- (k) location of catenary constructions, lighting poles, radiocommunication towers, substations, signals, facilities (including buildings) for signalling equipment and other objects if applicable;
- (l) railway station infrastructure (supply utilities, power supply, lighting, communication, drainage, water supply, car parking place etc.) at the Conceptual design level for international stations and regional stations, stops (at the Conceptual design level);
- (m) demolishing buildings and other structures (including utilities);
- (n) Temporary buildings, structures, access roads and bypasses required for the implementation of the design solutions;
- (o) Deforestation of land plots and trees for the affected infrastructure and for the right of way including necessary safety zone adjacent to the right of way;
- (p) Design for construction site preparation/cleaning before and after construction works;
- (q) Fire protection strips according to country specific requirements;
- (r) Embankment settlement and frost heave monitoring systems in locations of particular interest;
- (s) monitoring systems for structures (ie. bridge/overpass/viaduct/tunnel);
- (t) locations of catenary supporting structures (fixing elements shall be integrated into structures and designed);
- (u) Reallocation of buildings, structures, objects, Affected party infrastructure and utilities,

- (v) Design for reconstruction or relocation of existing 1520mm railway infrastructure (eg. Railway track, stops, stations, signalling, automation, catenary, etc.) of any Affected parties, including integration of any changes made in signalling and traffic management systems. Design for dismantling of existing 1520mm railway infrastructure (eg. Railway track, stops, stations, signalling, automation, catenary, etc.) of any Affected parties;
- (w) Temporary railway connections required for uninterrupted operation of existing 1520mm railway network;
- (x) Design for a land amelioration where needed, including outside of road and railway right of way (RoW), to ensure flow continuity for drainage systems;
- (y) ENE / CCS land plot reservation areas (for radiocommunication towers, facilities (including technical rooms or buildings) for ENE/CCS equipment, and other objects);
- (z) Acquire necessary input data and ensure necessary assessments (existing conditions, planned development, future impact during construction, operational phase etc.) of the existing and planned neighbouring, adjacent and interfaced objects/structures (roads, railways, bridges, buildings, utilities, landscaping etc.).

2.3.2. The following objects shall be designed by the Consultant at the Conceptual design level:

- (a) Technical buildings necessary for the railway operations and maintenance;
- (b) Traction power substations, overhead contact line system, snow cleaning systems;
- (c) Future connections to railway tracks;
- (d) Stations and station infrastructure.

2.3.3. The list of main objects defined in the 2.3.1 is indicative on the basis of existing studies. The Consultant remains fully responsible of establishing the list of objects and exact amount/volume of the structures to be designed, in order to ensure the overall performance of the Services.

2.4 Client's responsibility

- 2.4.1. Any work done prior to the approval of Consultant's documents by the Client shall be at the Consultant's risk and responsibility. The Client shall have the right to amend the Client's Requirements, request any additional details and to require the Consultant to make any changes in the required Services pursuant to the provisions and procedure specified in the Particular conditions and the Design Guidelines.
- 2.4.2. Approval of any of the Consultant's documents by the Client shall not relieve the Consultant of the responsibility to meet all of the requirements or of the responsibility for the correction of the documents furnished by the Consultant. The Consultant shall have no claims for additional costs or extension of time on account of delays due to revisions of the documents, which may be necessary for ensuring compliance with the Agreement or the applicable law. In the case of the later discovery of errors, omission, or inconsistencies within a Consultant's document, the Consultant shall promptly submit the revised document, to the Client's approval within 30 (thirty) days after date of notification. Pursuant to the provisions and procedure specified in the Particular conditions and the Design Guidelines the Client shall have the right to require the Consultant to make any changes in the approved Consultant's documents and other performed Services.

2.5 Design priority sections

- 2.5.1. In order to ensure proper planning and management of design process, the whole Design Section covered under the scope of the Design Services is split into the Design Priority Sections that are prioritised from the design process.
- 2.5.2. The following Design Priority Sections are identified in Technical specification, which the Consultant shall follow:

Table 5: Design Priority Sections

Id. No.	Priority	Title	Range VE chainage (MD chainage)	Notes
LV-DS1DPS2	II	Upeslejas to railway station "Rīga – Preču"	3,590 km - 12,900 km (0+000 km - 9+310 km)	Ropaži municipality Salaspils municipality Rīga municipality
LV-DS1DPS3	III	Riga International Airport to Misa	33,910km - 66,000km (0+000 km – 31+926 km)	Mārupe municipality Olaine municipality Ķekava municipality

2.6 Building Permits and Construction objects

- 2.6.1. Building Permit (in Latvian: "Būvatļauja") in this TS also means future Construction Object to be built within Global project in accordance with the construction legislation. The Consultant shall carry out all necessary activities at its own cost to obtain necessary Building Permits for all Construction Objects according to the Country's national construction legislation.
- 2.6.2. The Consultant shall be responsible for the applications to receive the Building Permits and provision of necessary information. The Client shall confirm every application of the Building Permit/BDMC.
- 2.6.3. The Consultant shall fully take into account the time periods specified in Country's construction legislation for the administration process of Building Permits, Technical conditions of the Affected Parties and DTD implementation.
- 2.6.4. The indicative list (non-exhaustive) with minimal amount of current Building Permits and Construction Objects is shown in this chapter in order for the Consultant to understand its needs for the necessary resources and appropriate time planning within the scope of provision of the Design Services to ensure full design packages (covering the corresponding approvals and issuing of Building permits in accordance with Country's construction legislation) are prepared for every Building Permit.
- 2.6.5. If Building Permits and list of Construction Objects needs to be amended during the provision of the Design Services to ensure implementation of DTD, the arrangement and split of objects into the Construction Objects shall be done in accordance with the following:
- (a) Country's national construction legislation;

- (b) financial resources allocation for the implementation of design (construction) activities;
- (c) Consultant's experience and best practices of high speed railway design;
- (d) better coordination and management of the Design Services;
- (e) envisaged ownership of the designed and build constructions;
- (f) Technical conditions received from Affected parties.

2.6.6. The Consultant shall note that due to the above-mentioned reasons, the final number and list of Construction Objects might change during the Design Services.

2.6.7. The Consultant shall prepare an implementation schedule of design of Construction object (Building Permit) within Design Priority Section and submit it for approval. This implementation schedule shall be updated monthly and included in Progress report. The Client may change the priorities for design of Construction objects.

2.6.8. The following table shows list of current Building Permits and Construction Objects based on Value Engineering and initial Master Design solutions and acquired Affected Party Technical Conditions which the Consultant shall take into account in the development of the Design and liaise with the Client regarding any necessary changes identified. Building permit BP3.4. and corresponding AP TC had been received, but later cancelled due to necessity to carry out additional environmental procedures which has been done, thus the Consultant shall prepare BDMC for this BP and apply for the BP and AP TC.

Table 6: Building Permits and Construction Objects based on Value Engineering and initial Master Design solutions and acquired Affected Party Technical Conditions

BP No.	Design priority section	Building Permits and Construction Object title	Location ² (range), km VE chainage (MD WIP chainage ³)
BP2.1.	LV-DS1-DPS2 Design Priority Section No.2 Upeslejas to railway station "Rīga – Preču"	"High speed railway line "Rail Baltica" DS1 section "The Mainline Section Through Riga" subsection DPS2, Ropaži municipality. Building permit Nr.2.1."	3+590 km – 5+140 km (0+000 km – 1+550 km)
BP2.2.		"High speed railway line "Rail Baltica" DS1 section "The Mainline Section Through Riga" subsection DPS2, Ropaži municipality. Building permit Nr.2.2."	5+140 km - 10+200 km (1+550 km – 6+610 km)
BP2.3.		"High speed railway line "Rail Baltica" DS1 section "The Mainline Section Through Riga" subsection DPS2, Ropaži and Riga City municipalities. Building permit Nr.2.3."	10+200 km - 12+900 km (6+610 km + 9+310 km)

² Location to be detailed in further stages of design.

³ Shall be interfaced and aligned with the neighbouring sections and their designs.

BP No.	Design priority section	Building Permits and Construction Object title	Location ² (range), km VE chainage (MD WIP chainage ³)
BP3.1.	LV-DS1-DPS3 Design Priority Section No. 3 Riga International Airport to Misa	"High speed railway line "Rail Baltica" DS1 section "The Mainline Section Through Riga" subsection DPS3, Mārupe municipality. Building permit Nr.3.1"	33+993 km - 38+100 km (0+000 km – 4+107 km)
BP3.2.		"High speed railway line "Rail Baltica" DS1 section "The Mainline Section Through Riga" subsection DPS3, Mārupe municipality. Building permit Nr.3.2"	38+100 km - 39+500 km (4+107 km – 5+507 km)
BP3.3.		"High speed railway line "Rail Baltica" DS1 section "The Mainline Section Through Riga" subsection DPS3, Mārupe and Olaine municipalities. Building permit Nr.3.3"	39+500 km - 43+900 km (5+507 km – 9+907 km)
New BP3.4.		NEW BP 3.4 to be applied for by the Consultant. Original BP3.4. was cancelled.	43+900 km - 52+435 km (9+907 km – 18+442 km)
BP3.5.		"High speed railway line "Rail Baltica" DS1 section "The Mainline Section Through Riga" subsection DPS3, Olaime and Ķekava municipalities. Building permit Nr.3.5"	52+435 km - 57+660 km (18+442 km – 23+667 km)
BP3.6.		"High speed railway line "Rail Baltica" DS1 section "The Mainline Section Through Riga" subsection DPS3, Ķekava municipality. Building permit Nr.3.6"	57+660 km - 62+540 km (23+667 km – 28+547 km)
BP3.7.		"High speed railway line "Rail Baltica" DS1 section "The Mainline Section Through Riga" subsection DPS3, Ķekava municipality. Building permit Nr.3.7"	62+540 km - 65+922 km (28+547 km – 31+926 km)

2.7 Affected parties' objects

- 2.7.1. The Consultant shall be responsible for the coordination and management of activities of the Design Services with Affected parties within and/or in association with the Scope of the Services. The Consultant shall be responsible for necessary alignment and approvals to be obtained from the Affected parties as well as for provision of necessary analysis and data related to Design Services at the request of the AP.
- 2.7.2. The Consultant shall maintain and update an Affected parties management plan or Stakeholder Management Plan that includes methodology, processes and tools for management to be implemented by the Consultant throughout the provision of Services. The prepared Stakeholder

Management Plan shall be consulted with the Client. The Stakeholder Management Plan shall be reviewed regularly and updated accordingly. Any stakeholder engagement shall be documented and traceable. Stakeholder management activities, drawing particular attention to activities taken and planned by the Consultant in context of early risk mitigation, shall be included in the regular progress reports.

- 2.7.3. Based on the approved Value Engineering, commenced Master Design other design data and following the design solution development process the Consultant shall apply for and maintain validity of Technical Conditions from Affected parties. This includes necessary updates of Technical Conditions as a result of changed design solutions, new affected landplots and properties etc.
- 2.7.4. The scope of Affected party Technical Conditions might cover the following construction activities that shall be incorporated in the design by the Consultant during provision of the Design Services:
- (a) New construction, reconstruction, demolition, upgrade;
 - (b) Relocation, protection, restoration, preservation;
 - (c) Any other construction activities in line with Rail Baltica Global project objectives.
- 2.7.5. The Consultant shall coordinate and align the scope of Affected party Technical Conditions before the application and after the receipt with the Client to ensure that Technical Conditions are legitimate and in line with Rail Baltica Global project.
- 2.7.6. Deviations from Affected party Technical Conditions shall be aligned with the Client and Affected parties.
- 2.7.7. The Consultant shall be responsible for the implementation of the requirements of Affected party Technical Conditions during the provision of the Design Services.
- 2.7.8. The Consultant shall be responsible for the implementation, update and transfer to the Client of the database of technical conditions, correspondence and any other document related to the requirements of Affected party management.
- 2.7.9. Coordination with Affected Parties shall include coordination with private owners inter alia coordinating solutions for roads, hydrology solutions, protections zones etc.
- 2.7.10. The Consultant shall be responsible for stakeholder management and coordination activities with Affected parties within and/or in association with the Scope of the Services. The indicative (non-exhaustive) list of Affected parties is as follows:
- (a) Transport infrastructure operators/owners: railways, roads, airports and others;
 - (b) Power transmission operators (high voltage) and power suppliers (low and medium voltage);
 - (c) Oil/gas transmission operators;
 - (d) State/municipal institutions;
 - (e) Landowners and private owners;
 - (f) State Forest Service;
 - (g) Telecom (communication cable lines, mobile operators);
 - (h) Fire/Rescue services and military authorities;
 - (i) Private enterprises;
 - (j) Railway authorities;

- (k) State/municipal service companies (water supply, heat supply etc.);
- (l) Environmental and nature protection institutions;
- (m) Culture heritage protection institutions;
- (n) Land amelioration and land drainage authorities and owners;
- (o) Any other institution the requirements thereof shall be considered by the Consultant during the Design Services provision.

2.8 Design expertise and Conformity assessment

- 2.8.1. Conformity assessment of subsystems and interoperability constituents will be in accordance with Directive 2008/57/EC and Directive 2016/797/EU to ensure interoperability between the Rail Baltica Global project and the European railway network (NoBo assesement). Conformity assessment of safety requirements will be in accordance with Directive 2016/798/EU and Regulation No 402/2013/EU to ensure safe operation of Rail Baltica railway system within European Union (AsBo assesement). NoBo/AsBo assessments start with design works phase and end with formal certification of each separate completed railway subsystem.
- 2.8.2. Design expertise as well as NoBo/AsBo assessments are under the responsibility of the Client. The Consultant shall cooperate with the design expertise as well as NoBo/AsBo assessments service providers with the Client and provide all necessary data. The Consultant shall implement the comments (correct the design documents) received from design expertise as well as NoBo/AsBo assessments service providers within 1 week of receival of such comments.

3 Design Works Performed

3.1 Preliminary Design and EIA

- 3.1.1. RB Preliminary Design has been developed from 2014 until 2016 and served as the basis for Environmental Impact Assessment completed in 2016. Opinion No.5 of the Environment State Bureau (ESB) has been issued on 3 May 2016, the document is available in Latvian (Annex No. A16).

3.2 Value Engineering, BDMC, BP

- 3.2.1. Value Engineering through different alternative analysis was developed from 2019 – 2020. VE (railway alignment with the related and impacted infrastructure, structures etc.) with the best selected alternative have been approved by the Beneficiary at the end of 2020. VE was the basis for BDMC preparation in 2021 and the application of the Building Permits from the Construction Board – "The State Railway Technical Inspectorate" NSA. All current progressing BP are listed in the Table 6 and BP with the TC are available in Annex No. 16. The Consultant shall be responsible of the further administration, clarification, and ensurance of validity of the BP documentation (Building Case in Building information system) and TC in order to achieve an approved DTD. The Consultant shall organize and manage changes in BP split if necessary.

3.3 Investigations for Value Engineering

- 3.3.1. Investigations, including ground investigations (geotechnical investigations) for Value Engineering have been carried out during VE. The Consultant shall ensure update and validity of geodetic and topography surveys for the Design Services in accordance with the Annex No. 18. For the Design Service implementation the Consultant shall use geotechnical investigations for Value Engineering, if necessary validate these investigations with the additional geotechnical investigations foreseen in the Agreement. The further investigations, including Remaining first stage geotechnical investigations and Second stage investigations the Consultant shall carry out in accordance with the Annex No. 18.

3.4 Initial solutions of Master Design

- 3.4.1. Master design development was commenced in 2021. The initial solutions of MD (Annex No. 16) for Design Priority Sections and BP have been prepared and also communicated with the main AP (Latvian State Roads, Latvian Railways, Municipalities etc.). The initial conceptual solutions of MD (railway alignment, roads, hydrology, structures etc.) and other design data is available in the Annex No. 17. Neither NoBo, AsBo, Design Expertise nor Clients technical teams have commenced the technical review of the initial solutions of MD, therefore the Consultant must take full responsibility of compliance with such reviews and approvals of MD and DTD.

3.5 Public presentations of solutions

- 3.5.1. During VE, implementation of BDMC and initial solutions of MD, RB solutions have been presented to public, municipalities and NGOs. The Consultant in collaboration with the Client shall continue consultations and presentations of further development solutions to achieve DTD solutions fit for purpose and Rail Baltica Global Project requirements.

During Design Services the Consultant with the local expert involvement shall participate in the presentation as well as provide technical input to the Client for public, Affected Parties, NGO and authorities discussions on the proposed solutions. Such discussions are planned once every 5 months when organized by the Client or IB or more frequently if organized by local authorities according to the procedures described in the local legislation.

3.6 Design progress of Building Permits and initial solutions of Master Design

- 3.6.1. The following table provides general design progress made until the December 2023 and list of main issues (non-exhaustive list) to be solved and implemented in the Design Services – MD and DTD deliverables as well as supporting Site Investigations. Considering each design discipline and exercising prudent professional Consultant's judgment the Consultant must scrutinize all the progressing design solutions and design data provided by the Client, particularly in the initial solutions of MD (Annexes No. 17). Consequently, the information presented in the following table does not release the Consultant from any responsibility of the Design Services in accordance with the Agreement. The Consultant must present to the Client the updated table (approach) with the proposed solutions per every BP.

Table 7: General design progress made until the December 2023 and list of main issues (non-exhaustive list) to be solved

Building permit	Structures (in Latvian: "būves") in BP	List (non-exhaustive) of comments and known issues to be solved within the design (the design must comply with the TS of the Agreement, Rail Baltica Design Guidelines, Affected Party technical conditions, applicable standards and regulations)
DPS2 Upeslejas to railway station "Rīga – Preču"		
BP2.1.	Rail Baltica railway (including related infrastructure - Sauriešu station, utilities, access roads, affected existing streets and roads, maintenance roads, etc.)	<p>Railway horizontal and vertical alignment conceptually fixed.</p> <p>Interface with connecting Rail Baltica design section .</p> <p>Secondary emergency exit from both platforms shall be designed.</p> <p>Interface with Saurieši regional station design project.</p>
	Saurieši station pedestrian crossing	<p>Mixed pedestrian and bicycle crossing with access to platforms.</p> <p>North ramp connection with urban area and Saurieši regional station needs to be adjusted.</p> <p>Underpass height must be reassessed to provide a solution that is technically and economically justified.</p>
	Road P5 overpass over RB and 1520mm railways	<p>P5 road alignment to be reassessed in order to provide compliance with LSR requirements (incl. future E22 road project implementation feasibility).</p> <p>Noise barriers to be verified for cumulative noise mitigation within noise modelling task and designed where needed.</p> <p>Vertical gauge that complies with RBDG and AP requirements must be ensured over railway.</p> <p>Vertical gauge that complies with RBDG and AP requirements must be ensured under existing high (330kV) voltage overhead power supply line.</p>
	State regional road P5	<p>P5 road alignment and road connections to be reassessed in order to provide compliance with LSR requirements (incl. future E22 road project implementation feasibility).</p> <p>Noise barriers to be verified for cumulative noise mitigation within noise modelling task and designed where needed.</p> <p>Connection of designed and existing P5 road pedestrian infrastructure must be ensured.</p>
	Railway line (gauge 1520mm) reconstruction	<p>Reconstruction of all existing infrastructure, including signalling system and other sub-systems (without ENE).</p> <p>Interface with neighbouring 1520mm railway "Saurieši" station redesign.</p>

BP2.2.	Rail Baltica railway (including related infrastructure – utilities, access roads, affected existing streets and roads, maintenance roads, etc.)	<p>Railway horizontal and vertical alignment conceptually fixed.</p> <p>Connection of RB tracks to side track to railway station "Rīga – Preču" must be designed at conceptual level.</p>
	Acone Pedestrian Crossing	Mixed pedestrian and bicycle crossing.
	Pedestrian crossing of road "Pļaviņas-Raugas"	<p>Mixed pedestrian and bicycle crossing.</p> <p>Underpass height must be reassessed to provide a solution that is technically and economically justified.</p> <p>Length of structure must be reassessed to ensure access to adjacent properties.</p>
	Piķurga river animal crossing	To be designed with the best engineering practice for combined structures that serve also for wildlife crossing purposes.
	Railway line (gauge 1520mm) reconstruction	Reconstruction of all existing infrastructure, including signalling system and other sub-systems (without ENE).
	TEC-2 pedestrian crossing	<p>Mixed pedestrian and bicycle crossing.</p> <p>Underpass height must be reassessed to provide a solution that is technically and economically justified.</p>
	Other issues	
	Daugupīte river	River realignment foreseen.
BP2.3.	Rail Baltica railway (including related infrastructure – utilities, access roads, affected existing streets and roads, maintenance roads, etc.)	Railway horizontal and vertical alignment conceptually fixed.
	Railway viaduct over 1520mm (Rīga-Preču stacija)	
	Heating utility tunnel under RB and 1520mm railways	

	Railway line (gauge 1520mm) reconstruction	Reconstruction of all existing infrastructure, including signalling system and other sub-systems (without ENE).
DPS3 Riga International Airport to Misa		
BP3.1.	Rail Baltica railway (including related infrastructure - utilities, access roads, affected existing streets and roads, maintenance roads, etc.)	<p>Railway horizontal and vertical alignment conceptually fixed.</p> <p>Interface with connecting Rail Baltica design section.</p> <p>Access road interface with A5 design and future RIX railway cargo terminal must be considered.</p> <p>Location and design of electromagnetic protection screen (absorption tunnel) for railway.</p>
	RIX railway viaduct (closing span)	To be interfaced and aligned with the neighbouring approved design, considering conclusions of NoBo, AsBo and design expertise.
	Railway viaduct over aircraft path	Necessity of the crossing to be reassessed.
	Municipality road C-10 underpass under Rail Baltica	Best location and type of the structure for the railway crossing must be assessed .
	Municipality road C-10	
	Municipality road C-40	Structure excluded from the BP. Currently part of the access road network.
	Other issues	
	Latvian State Road A5 design ⁴	Critical interface with neighbouring design (both temporary and permanent design solutions shall be foreseen).
	RIX terminal	Connection for RIX terminal with the reserved territory for railway alignment and CCS, ENE systems shall be foreseen at conceptual level.

⁴ The A5 road solutions included in the Environmental Impact Assessment of the "A5 Riga bypass (Salaspils – Babite) section from km 11,6 (Kekava bypass) to km 38,2 (A10) reconstruction into a high-speed highway" have been developed at a conceptual level. During further detailing of A5 solutions they may change in accordance with the limit values set in the Law "On Environmental Impact Assessment".

BP3.2.	Rail Baltica railway (including related infrastructure - Jaunmārupe station, utilities, access roads, affected existing streets and roads, maintenance roads, etc.)	<p>Railway horizontal and vertical alignment conceptually fixed.</p> <p>Adjustments to the track layout must be carried out to increase the length of service platform close to planned Jaunmārupe rollingstock depot according to the schematic drawing provided in the Annex No. 17.</p> <p>Interface with Jaunmārupe regional station design project.</p> <p>Secondary emergency exit from both platforms shall be designed. Access road network must be reassessed.</p>
	P132 North ramp overpass over Rail Baltica	North ramp's alignment and connection with P132 and A5 must be reassessed.
	P132 overpass over Rail Baltica and A5	A5/P132 road junction conceptually fixed, but must be reassessed and aligned with A5 designer and Mārupe municipality.
	P132 South ramp overpass over Rail Baltica	Must be excluded from the BP as the conceptually agreed A5/P132 road junction solution does not foresee it.
	Regional state road P132	A5/P132 road junction conceptually fixed, but must be reassessed and aligned with A5 designer and Mārupe municipality.
	Municipality road C-40	Structure excluded from the BP. Currently part of the access road network.
	Jaunmārupe station pedestrian crossing	Future enlengthening over A5 must be foreseen and feasibility of it ensured in the overpass design.
	Other issues	
	Latvian State Road A5 design ⁴	Critical interface with neighbouring design (both temporary and permanent design solutions shall be foreseen).
BP3.3.	Rail Baltica railway (including related infrastructure - utilities, access roads, affected existing streets and roads, maintenance roads, etc.)	<p>Railway horizontal and vertical alignment conceptually fixed.</p> <p>Connection to Jaunmārupe rolling stock depo shall be designed at conceptual level.</p> <p>Increase the length of the service platform in Jaunmārupe.</p>
	Municipality road C-11 overpass over Rail Baltica	BP must be amended to include structure for municipality road C-11 overpass over A5.
	Municipality road C-11	
	Main state road A5 overpass	
	Main state road A5	

	Municipality road C-40	Structure excluded from the BP. Currently part of the access road network.
	Other issues	
	Latvian State Road A5 design ⁴	Critical interface with neighbouring design project (both temporary and permanent design solutions shall be foreseen)
	Neriņa river	River realignment foreseen.
New BP 3.4. (to be applied for by the Consultant)	Rail Baltica railway (including related infrastructure - Olaine station, utilities, access roads, affected existing streets and roads, maintenance roads, etc.)	<p>Railway horizontal and vertical alignment conceptually fixed.</p> <p>Interface with Olaine Regional station design project.</p> <p>Secondary emergency exit from both platforms shall be designed.</p> <p>Access road network must be reassessed.</p> <p>Connection to industrial business park of Olaine municipality shall be designed at conceptual level.</p>
	Railway viaduct over V13; A8; 1520mm LDz	1520mm impacted railway infrastructure redesign required.
	State local road V7 overpass	The overpass design shall ensure efficient parallel access road network and the additional span design for the overpass.
	State local road V7	Connection with access road network and industrial business park must be analysed and implemented.
	State local road V13 ramp	Must be reassessed and aligned with A5 solutions.
	State main road A8 ramp	Must be reassessed and aligned with A5 solutions.
	Ecoduct over Rail Baltica and A5 (Olaive municipality)	Ecoduct must include necessary structures to cross Rail Baltica Railway, access road parallel to railway, two carriageways of A5 and access road parallel to A5. As a consequence there will be a large animal crossing structure which should be designed in a balanced way considering design guideline principles and the best engineering practice for such structures to achieve expedient and proportionate solution that meets the environmental objective.
	Existing 110kV high voltage overhead power line crossing	
	Existing 330kV high voltage overhead power line crossing	
	Other issues	

	Latvian State Road A5 design ⁴	Critical interface with neighbouring design project (both temporary and permanent design solutions shall be foreseen).
	Pedestrian and bicycle underpass crossing at high railway embankment	The Consultant shall design pedestrian and bicycle underpass at high railway embankment in crossing of municipality road PC21 (Rīgas apvedceļš – Birznieki – Jaunolaine).
	New BP 3.4.	The Consultant shall prepare a new BDMC considering above-mentioned and apply for new building permit.
BP 3.5.	Rail Baltica railway (including related infrastructure - utilities, access roads, affected existing streets and roads, maintenance roads, etc.)	Railway horizontal and vertical alignment conceptually fixed. Interface with Ķekava regional station design project. Secondary emergency exit from both platforms shall be designed.
	Railway bridge over Daugava-Misa channel	
	"A/C A5-A/C V6 (Vilciņi)" overpass over Rail Baltica	
	"A/C A5-A/C V6 (Vilciņi)" overpass over A5	
	Municipality road "A/C A5-A/C V6 (Vilciņi)"	Pedestrian connection from the embankment to the station area must be ensured. Connection with area between RB and A5 must be assessed and provided in line with the solutions for emergency exits.
	Ziemeļu street	BP must be amended to include Ziemeļu street as it is a continuation of municipality road overpass.
	Local state road V6 overpass	BP must be amended to exclude this structure.
	Local state road V6	
	Ecoduct over Rail Baltica and A5 (Ķekava municipality)	Ecoduct must include necessary structures to cross Rail Baltica Railway, access road parallel to railway and two carriageways of A5. As a consequence there will be a large animal crossing structure which should be designed in a balanced way considering design guideline principles and the best engineering practice for such structures to achieve expedient and proportionate solution that meets the environmental objective.
	Ķekava station pedestrian crossing	
	Existing 330kV high voltage overhead power line crossing	
	Other issues	

	State Environmental Authority TC	The Consultant should take into account that in this section environmental technical conditions were received in the early stage of design and will need amendments according to the updated design solutions.
	Latvian State Road A5 design ⁴	Critical interface with neighbouring design project (both temporary and permanent design solutions shall be foreseen).
	Access road crossing with Daugava-Misa Channel	Solution in line with existing situation, nearby infrastructures and best design practice must be provided for road crossing over the channel.
BP 3.6.	Rail Baltica railway (including related infrastructure - utilities, access roads, affected existing streets and roads, maintenance roads, etc.)	Railway horizontal and vertical alignment conceptually fixed.
	Railway bridge over Butleru stream	
	Railway bridge over Ķekava river	
	Railway bridge over Ķekava river by A7	
	"A/C V6 (Palejas)-A/C A7" overpass over Rail Baltica	
	Municipality road "A/C V6 (Palejas)-A/C A7"	
	Merchant road "Balkas-Vācu kapi" overpass	
	Merchant road "Balkas-Vacu kapi"	Impact to state road A7 must be assessed and design solutions completed accordingly.
	Ecoduct over Rail Baltica railway line	The Consultant should take into account that in this section the structure have to cross Rail Baltica railway infrastructure and the wildlife crossing structure should be designed according to the design guideline principles to meet the environmental objective as well as considering the best engineering practice for such structures.
	Other issues	
	State Environmental Authority TC	The Consultant should take into account that in this section environmental technical conditions were received in the early stage of design and will need amendments according to the updated design solutions.
	Latvian State Road A7 enlargement project	Interface with neighbouring project.
	Access roads crossings with Butleru stream and Ķekava river (2 crossings)	Solution in line with existing situation, nearby infrastructures and best design practice must be provided for road crossings over the rivers.

BP 3.7.	Rail Baltica railway (including related infrastructure - utilities, access roads, affected existing streets and roads, maintenance roads, etc.)	Railway horizontal and vertical alignment conceptually fixed. Interface with connecting Rail Baltica design section. Interface with future design of main state road A7.
	Main state road A7 overpass	Cross section of A7 road must be reassessed and aligned with LSR (incl. alignment with A7 enlargement solutions).
	Main state road A7	Cross section of A7 road must be reassessed and aligned with LSR (incl. alignment with A7 enlargement solutions).
	Municipality road "Vārpu ceļš" overpass	
	Municipality road "Vārpu ceļš"	Impact to state road A7 must be assessed and design solutions completed accordingly.
	Other issues	
	State Environmental Authority TC	The Consultant should take into account that in this section environmental technical conditions were received in the early stage of design and will need amendments according to the updated design solutions.
	Latvian State Road A7 enlargement project	Interface with neighbouring project.
	Dobupīte river	River realignment foreseen.

4 Design Process

4.1 Site investigations

- 4.1.1. The Consultant shall carry out all the necessary site investigations/surveys/studies – inter alia, geodetic and topography, geological, geotechnical and hydro-geology, hydrology, traffic, environmental (e.g. protected trees), noise, vibration, EIA if applicable and any other investigations necessary to receive responsible authorities/institution approvals (result registrations) in accordance with Country's applicable legislation, regulations, standards and other requirements covered in the Technical Specification, Design Guidelines and Rail Baltica Additional requirements for site investigations (Annex No. 18).
- 4.1.2. The Consultant shall comply with Affected party requirements that define site investigations/surveys related to Affected party infrastructure and/or Affected party's area of supervision.

- 4.1.3. For the site investigations the Consultant shall prepare program for each investigation, receive all the necessary and applicable permissions (from the Client, state authorities and other) to carry out the respective site investigations and at the end of investigation shall prepare report for each investigation.
- 4.1.4. The Consultant shall validate the geotechnical investigations performed during Value Engineering phase taking full responsibility of the investigation information usage in the Consultant's design. To comply with this requirement the Consultant has an access to pool of verification investigations which usage have to be aligned with the Client.
- 4.1.5. In case responsible Affected Party does not define requirements for geotechnical investigations and testing the Consultant shall comply with LVS EN 1997-2 "7. Eirokodekss. Ģeotehniskā projektēšana. 2. daļa: Pamatnes grunts izpēte un testēšana" where applicable. On Consultant's responsibility it is permissible to use railway investigation data for design of infrastructure that is located parallel to the railway, and where railway axis is not more than 40 m away from the corresponding investigation points.
- 4.1.6. For all culverts with a width $\geq 2\text{m}$, the Consultant shall carry out at least 2 geotechnical investigation points (if the requirement is not covered by geotechnical investigations performed during Value Engineering phase).
- 4.1.7. The Ground Investigation Report (GIR), in accordance with subsection 3.4 of EN 1997-1, must be submitted concurrently with the relevant deliverable (MD or DTD according to Annex No. 18) and corresponding Building Permit. Approval of the deliverable by the Client will serve as confirmation of the completion of relevant site investigations.
- 4.1.8. Geotechnical investigation reports shall include soil mass balance (analysis of reuse of excavated material), including analysis of potential material storage places).

4.2 Specific requirements for structures

- 4.2.1. Consultant shall design eco-ducts according to Eurocodes and based on Country's legal requirements. Following LM3 traffic loads as per EN 1991-2 Annex A shall be considered for eco-duct design:
 - 1) If planned traffic is missing, then minimum calculated vehicle load should be 600 kN (for emergency situation) and axle load 150 kN;
 - 2) If local traffic will pass eco-duct then calculated vehicle load should be 1200 kN, and axle load 150 kN.
- 4.2.2. Braking loads (from different traffic directions and in various combinations) shall be considered in the design.
- 4.2.3. In order to achieve common visual identity already considered in designs by other Consultants architectural, landscaping and visual identity implementation for structures shall consider mutually agreed principles between various designers.
- 4.2.4. Where possible structures shall be designed as integral structures without joints.

4.3 Master Design structure

- 4.3.1. The first major deliverable for the Design process is the Master Design. The Master Design contains all technical parts of the design and consists of technical description, drawings, calculation notes and cost estimate. Detail solutions shall be worked out on the level that Client could analyse the construction budget. The purpose of the Master Design is to determine and ensure the Client and the Consultant of the principal outcome of the Detailed Technical Design. No major changes are expected after the approved Master Design barring exceptional circumstances.
- 4.3.2. The technical solutions defined in the Master Design shall provide sufficient and clear detail of the project scope for the appropriate authorities to evaluate the interoperability, safety, environmental aspects, rationality and technical performance of the railway and related facilities to approve the project.
- 4.3.3. The technical solutions (by design discipline) defined in Master Design shall be previously aligned with the Client via TWG meetings.
- 4.3.4. Master design shall include proof that designed road network is aligned with responsible municipalities and infrastructure future owners.
- 4.3.5. The technical requirements for the Master Design are as follows:
- 1) Prepared technical solutions for the section of Rail Baltica infrastructure, including typical drawings for the railway line and relevant cross-sections, (including electrification, control, command and signalling (CCS) and communications systems, stops, snow cleaning systems) stations and civil structures – road and railway crossings, river crossings and culverts, pedestrian and animal crossings, utility crossings, landscape design, noise reduction solutions, fencing, etc.;
 - 2) All necessary investigations complete according to Annex No. 18;
 - 3) All existing utilities and their connections need to be shown in the design with information of the owner of each specific utility;
 - 4) Prepare detailed technical drawings with a detailing level corresponding to a master design – general, but precise enough so that the main details and the main requirements for precise detailing in further design works process are clear;
 - 5) Prepare the necessary crossing schematic drawings according to the requirements for multi-level crossings, ensuring a safe and comfortable crossing of the railway track. Solutions must be created in consultation with responsible Affected parties;
 - 6) Design the plans and longitudinal profiles of the proposed crossings to a detailing level that would provide enough input information for the civil designs and work estimation;
 - 7) Based on the input of the Client, show the electric sub-station locations for the railway;
 - 8) Design railway bridges together with catenary post, grounding and signalling and catenary cable channels according requirements in Design Guidelines;
 - 9) Prepare cost estimate with a detailed split for infrastructure elements, types of work, sections of railway based on required Bill of Quantities;
 - 10) Prepare right of ways and red lines for railway and other infrastructure where it is applicable by Country's national legislation;

- 11) Prepare a final list of real estates and land plots with borders needed for the railway, related civil structures and infrastructure. For each land plot a detailed drawing must be prepared, indicating current (up to date) cadastral information, necessary territory for land acquisition, access options and surface area values, which takes into account, local practice, national legislation, local municipality rules of land division and provision of access to the remaining land plot parts;
- 12) The Consultant shall design solutions, that impose lowest possible negative impact on the capacity as well as operation of the existing railway infrastructure during and after the construction. The Consultant shall develop and align construction sequence and phasing to ensure continuous operations of any existing infrastructure. The design solutions (as well as construction technology solutions) influencing the capacity of any public infrastructure shall be aligned with the corresponding Affected parties and Implementing Body;
- 13) Prepare technical solutions for the railway and related infrastructure, including:
- 14) Schematic track layout for the railway line including main track and side tracks, station areas, passing loops, crossovers etc.;
- 15) Railway line layout (horizontal alignment) (scale 1:1000) with related ditches, roads, utilities, other structures/buildings placement and planned railway tracks with turnouts, crossovers (with coordinates x, y);
- 16) Railway line longitudinal profiles (vertical alignment) (vertical scale 1:200, horizontal scale 1:5000) combined with railway line layout (scale 1:5000) on ortophoto, including structures, switches, crossings, platforms with level data, cant diagram, utilities, culverts, ditches, geological data, hydrogeological data with information about calculated groundwater and highest water level;
- 17) Cross-sections (scale 1:100) every 100m on the railway mainline and at unique locations including superstructure, substructure, platforms with level data, land plot boundaries, drainage structures, ditches, typical cableway connections to land plot reservation areas for CCS and ENE equipment, typical undertrack crossings with ducts, etc; geological data, hydrogeological data with information about calculated groundwater and highest water level;
- 18) Diagram of design speed permitted according to the alignment parameters;
- 19) Railway civil structure part: bridges with catenary fixing elements, grounding and signalling, catenary cable channels, crossings; overview plan, cross-section, elevation and longitudinal section, indicating the length of spans, used materials and dimensions of bearing structures;
- 20) Culverts, groundwater, drainage and storm water management systems;
- 21) Passenger platforms;
- 22) Road and pedestrian segregated-grade crossings and necessary equipment (e.g. lifts, pumping stations, lighting [including power supply connections and/or other utilities], etc.);
- 23) Noise barriers and other technical solutions for reduction of noise and vibration (including noise reduction measures on road and pedestrian segregated-grade crossings);
- 24) Cabling along railway line;
- 25) Access or maintenance roads along railway line;
- 26) Access to the embankment and superstructure for maintenance purpose;

- 27) Access to affected land plots;
- 28) Communication and utility networks, including crossings, local roads, state roads and other affected infrastructure;
- 29) Any additional drawings and documents according to Country's legislation.
- 30) The Consultant shall provide a list of text and graphical documents, such as drawings, sketches, plans, schemes, diagrams, etc., and propose exact appearance of these documents for Master design to define the scope of graphical documents and minimum level of detailing. Alternative scales may be offered. The Consultant shall correct/improve/supplement the list and/or minimum level of detailing and get Client's approval. Consultant shall provide any additional graphic materials/documents or other information if it is necessary to do according to reasonable requirements of approving authorities;
- 31) Includes a collection of all technical conditions received and preliminary approvals by the Affected parties that issued them;
- 32) All power supply, catenary, signalling, ERTMS posts and cables layout without systems based on Design Guidelines shall be designed as Conceptual design. All loads from catenary system shall be calculated and integrated to embankment, structures (ie. Bridges, tunnels, viaducts ecoducts, culverts etc.) and platforms;
- 33) All local passenger platforms with lighting (with designed network connections from energy suppliers), catenary posts and catenary and signalling cable layouts with passengers' information system facilities (without systems) of local passenger stops, snow cleaning systems shall be designed in Conceptual design level (land plot borders shall be determined) according Detail BIM Strategy;
- 34) All Master Design documentation shall be delivered in DWG or other format (as required by the Affected parties, Design Expertise, NoBo, AsBo), PDF format, including other native-editable source file format (e.g., MS Word, MS Excel, Autodesk Civil3D, Bentley OpenRail / OpenRoad, NWC, Primavera P6, etc.) and shall include all styles and external references to allow the Client to fully re-create the drawings when needed, and non-editable/open file formats (PDF, NWD, XML, IFC);
- 35) For every Design priority section of final DTD solutions the Consultant shall prepare the visualization as required in this TS;
- 36) The Consultant shall ensure that railway track design solutions are aligned with neighboring Design Sections and conceptually designed at least 1 kilometer outside of the Design boundaries;
- 37) The Consultant shall submit track alignment data (track number, DPS chainage start and end, global chainage start and end, alignment element type, length of element, coordinates of start and end of element, radius, cant, slope, design speed, gauge type) in spreadsheet format as per template provided by the Client;
- 38) The Consultant shall prepare the BoQ following national legislation and requirements for mainline railway track related objects set out in Annex No. 20;
- 39) The Consultant shall prepare TSCs for relevant disciplines according to national legislation, requirements for mainline railway track related objects set in Annex No. 20, requirements for roads set in latest version of Latvian State Roads Road Construction Specifications (available at: <https://lvceli.lv/celu-tikls/tehniskie-noteikumi-metodiskie-noradijumi/specifikacijas/autocelu-specifikacijas/>) and requirements for bridges set in latest

version of Latvian State Roads Bridge Specifications (available at: <https://lvceli.lv/celutikls/tehniskie-noteikumi-metodiskie-noradijumi/specifikacijas/tiltu-specifikacijas/>). The Consultant shall follow the principles set in the provided references and align with the Client if deviations from them or prevention of conflict between them is needed;

- 40) The Consultant shall produce maintenance manuals for all Construction objects, following examples provided in Annex No. A10, where among other things the Consultant shall include:
 - a) requirements for maintaining the designed infrastructure objects to ensure their effective and safe operation;
 - b) set of values for immediate action limits, intervention limits and alert limits;
 - c) measures to be taken to mitigate the risk not to meet prescribed limits and prevent occurrence of defects (e.g., speed/operation restriction, reaction time for repair).
- 41) The Rail Baltica Railway maintenance manual describes the maintenance activities which are considered necessary to carry out the maintenance works of the railway line referring to civil works and track works. The Consultant shall use the manual "Railway Infrastructure Maintenance (Civil Works, Track)" (RBDL-SOD-ZZ-ZZ-OAM-R-00002) provided in Annex No. A10. The key focus areas included but not limited to are as follows:
 - a) the system safety and its availability regarding civil works and track works;
 - b) minimization of operating costs;
 - c) configuration of the system to facilitate its operation;
 - d) provision of all procedures necessary for safe, reliable, and efficient operations.
- 42) The Consultant shall provide dedicated maintenance manuals for specific point type objects;
- 43) The Consultant shall note, that provided manual "Railway Infrastructure Maintenance (Civil Works, Track)" is a draft document and shall be used when developing the maintenance manual, either by improving current document or working on sections not covered (as indicated in Annex No. A10, Appendix I);
- 44) The Consultant shall propose to the Client the best suitable locations for material storage sites. The Consultant shall align the suitability of proposed locations with the Client prior to submission of Master Design deliverables.

4.4 Master Design review and approval

- 4.4.1. The Master Design shall be submitted to Client for review.
- 4.4.2. During Master Design process Consultant shall provide required information to NoBo, AsBo as well as design expertise expert (to be organised separately by the Client).
- 4.4.3. Administrative review. After receipt of the provided Master design in a period of up to 10 (ten) days Client will carry out administrative review. The aim of the administrative review is to check whether the Master design provided is complete. If submission is incomplete, Client requests resubmission of the Master design in full scope.
- 4.4.4. Technical review. After receipt of a complete Master Design in a period of up to 35 (thirty five) days Client will prepare the technical review report.
- 4.4.5. At least one review meeting with Client takes place during the review period.

4.4.6. The technical review report has three decision options in Latvia:

- (a) confirming that the Master design is compliant and work on Detailed Technical Design can be started with no additional recommendations.
- (b) confirming that the Master design is compliant and work on Detailed Technical Design can be started with recommendations to be implemented. The Consultant is responsible for implementing the recommendations in the Detailed technical design.
- (c) defining the Master design as non-compliant and requiring resubmission of the Master design.

4.4.7. In case technical review report rejects the deliverable, the Consultant shall submit new revision in 20 (twenty) days with all the comments and discrepancies resolved.

4.4.8. The Consultant shall receive preliminary approvals from the Affected parties of the proposed technical solution and cross-section with the railway during Master design level in order to secure further DTD elaborations without extensive modifications.

4.5 Detailed Technical Design structure

4.5.1. In accordance with the "Appendix 3 Programme" and "Appendix 4 Remuneration and Payment" of the Agreement DTD submission, review and approval is carried out in the following two deliverables per every BP:

- 1) DTD before upload in BIS;
- 2) DTD approved in BIS.

4.5.2. Detailed Technical Design shall be prepared in such detailed level to ensure implementation of the requirements of Technical Specification, applicable Technical standards, best engineering practice and to receive all approvals required during the design process. Detailed Technical Design shall provide complete technical solutions for future suppliers and construction companies/personnel to execute the works, with all the constructive solutions and materials.

4.5.3. All Detailed technical design documentation shall be delivered in BIM, DWG or other format (as required by the Affected parties, Expertise, NoBo), PDF format, including Word and Excel file formats and other native-editable source file format (e.g., MS Word, MS Excel, Autodesk Civil3D, Bentley OpenRail / OpenRoad, NWC, Primavera P6, etc.) and shall include all styles and external references to allow the Client to fully re-create the drawings when needed, and non-editable/open file formats (PDF, NWD, XML, IFC).

4.5.4. Designer shall design Detail Technical Design ("Būvprojekts") according to the applicable requirements of the construction legislation (e.g. Ministru kabineta noteikumi Nr.545 "Noteikumi par Latvijas būvnormatīvu LBN 202-18, "Būvniecības ieceres dokumentācijas noformēšana") described above and additional requirements agreed with the Client and in BIM at the required Level of Definition (LoD) described in TS.

4.5.5. As a result of approved DTD for every BP the design for building and structure demolishing shall be prepared for every impacted land plot in accordance with construction legislation. Approved designs for reallocation of buildings, structures and different structure objects shall be delivered within 4 months after DTD approval.

4.5.6. Deforestation plans (for the affected infrastructure and for the right of way including necessary safety zone adjacent to the right of way) with physical boundary markings for every forest land plot and /trees in city areas shall be prepared by the Consultant and approved with the responsible

authorities. Cabinet of Ministers regulations No.1019 "Zemes kadastrālās uzmērīšanas noteikumi" must be followed.

- 4.5.7. All materials and products shall be described via technical requirements and technical characteristic.
- 4.5.8. Consultant shall prepare the maintenance manuals for the design constructions objects as a part of Detailed Technical Design.

4.6 DTD before upload in BIS – review and approval

- 4.6.1. The Consultant shall submit to the Client deliverable "DTD before upload in BIS" in full set including the Second stage investigations reports as defined in the Technical Specification. All volumes of the design shall contain statement of compliance with the Country's construction legislation and Technical Specifications. Deliverable "DTD before upload in BIS" shall be implemented in BIM ensuring adherence to Level of Definition (LoD) 300 of Design guidelines.
- 4.6.2. The approval process of the Client will be carried out as follows:
 - Administrative review. After receipt of the provided Detailed Technical Design in a period of up to 10 (ten) days Client will carry out administrative review. The aim of the administrative review is to check whether the Detailed Technical Design provided is complete. If submission is incomplete, Client requests resubmission of the Detailed Technical Design in full scope;
 - Technical review. After receipt of a complete Detailed Technical Design in a period of up to 45 (forty five) days Client will prepare the technical review report;
 - The Client will review the Consultant's DTD documentation and return it with the indications „approved", „approved with corrections", or „returned for correction". Two last indications shall be supported by the Client's Review Reports.
- 4.6.3. When any Consultant's Document commented by the Client and bear the note „returned for corrections", the Consultant shall submit new revision in 20 (twenty) days with all the comments and discrepancies resolved. The Client's comments, including NoBo, AsBo, Design expertise/review provided during review of the deliverable "DTD before upload in BIS" shall be integrated into the deliverable that will be uploaded in BIS.

4.7 DTD approved in BIS

- 4.7.1. The Consultant shall upload DTD in BIS per every BP in full set in accordance with the legislation and submit the same DTD documentation (including BIM LoD 300) to the Client with the additional Second stage investigations reports, if necessary. All volumes of the design shall contain statement of compliance with the Country's construction legislation and Technical Specifications.
- 4.7.2. The Consultant shall acquire necessary AP approvals in BIS and submit to the Client resulting DTD deliverable.
- 4.7.3. The approval process of the Client, including Design expertise and AsBo/NoBo, for the AP approved DTD will be carried out as follows:
 - Administrative review. After receipt of the provided Detailed Technical Design in a period of up to 10 (ten) days the Client will carry out administrative review. The aim of the administrative review is to check whether the Detailed Technical Design provided is

complete. If submission is incomplete, Client requests resubmission of the Detailed Technical Design in full scope;

- Technical review. After receipt of a complete Detailed Technical Design in a period of up to 45 (forty five) days Client will prepare the technical review report;
- The Client will review the Consultant's DTD documentation and return it with the indications „approved“, „approved with corrections“, or „returned for correction“. Two last indications shall be supported by the Client's Review Reports.

4.7.4. When any Consultant's Document commented by the Client and bear the note „returned for corrections“, the Consultant shall submit new revision in 20 (twenty) days with all the comments and discrepancies resolved. All corrections shall be consecutively numbered for the construction permit.

4.7.5. After the approval of NSA in BIS the Consultant submits to the Client the final approved deliverable of DTD or "DTD approved in BIS" in full set. The deliverable shall include all investigations per all investigation stages applicable to the DTD and shall be fully implemented in BIM LoD 300 in accordance with the Design Guidelines.

4.7.6. Considering that "DTD approved in BIS" in BIM LoD 400 is additional service or "on demand service" the Client can request the Consultant to proceed with the implementation of the service as indicated in the Agreement.

4.8 Meetings

4.8.1. During provision of the Design Services, the following meetings shall be organised and held:

Table 8: Meetings

Title	Responsible party organising the meeting	Scheduling	Participating parties (from both parties of the Agreement)
Kick-off meeting	Consultant	1 week after commencement date of the Agreement	Consultant and Client project management team
Inception meeting	Consultant	2 weeks after commencement date of the Agreement	Consultant and Client project management team and necessary experts
Progress meetings	Consultant	Every 1 month following the Inception meeting	Consultant and Client project management team and necessary experts
Technical Working Group (TWG) meetings	Consultant	Every 2 weeks	Client will appoint representatives according internal rules and invite Consultant experts according Client needs. Client shall inform Consultant minimum 1 week ahead. Client and Consultant project managers or deputies shall take part in all meetings
BIM collaboration meetings	Consultant	When needed	Consultant's and sub Consultant's specialists (if required), representatives of Client (if required) and Affected party authorized representatives (if required)

Title	Responsible party organising the meeting	Scheduling	Participating parties (from both parties of the Agreement)
Meetings with Affected parties	Consultant	When needed	Consultant's and Client's design process managing representatives (when needed) and Affected party authorized representatives
Implementing body and beneficiary management meetings	Client	When needed (approximately on quarterly basis)	Client and Consultant project managers or deputies shall take part in all meetings
Meeting with NoBo/AsBo and design expertise	Client	When needed	Consultant's and Client's design process managing representatives
Design Review Coordination Meeting	Consultant	When needed. (Mostly, during Design Review and Conformity Assessment)	Consultant and Client project management team, and necessary experts
Interface Management Meetings	Consultant	When needed.	Consultant and Client project management team, and necessary experts
Other meetings (e.g. risk; claims and variations; schedule meetings)	Consultant	When needed. (Mostly, during Design Review and Conformity Assessment)	Consultant and Client project management team, and necessary experts

* The Client reserves the right to request the Consultant to participate in the meetings together with the sub-contractors.

4.8.2. The minimal content to be followed during the meetings is defined in the following table:

Table 9: The minimal content to be followed during the meetings

Id. No.-Title	Main content and objectives of the meeting	Input data to be provided before the meeting
RBDTD-RBDTD-LV-DS1-Kick-off meeting	<ol style="list-style-type: none"> 1. Presentation of Rail Baltica Global project and the general scope of the Design Services by the Client; 2. Organizational structure of the Consultant. Presentation of Consultant's Team; 3. Split of responsibilities at Consultants Team; 4. Preliminary planning of the Design Services activities; 5. Client expectations to quality assurance plan. 	<ol style="list-style-type: none"> 1. Slides to be presented by the parties; 2. List of experts, certification documentation.

Id. No.-Title	Main content and objectives of the meeting	Input data to be provided before the meeting
RBDTD-LV-DS1-Inception meeting	<ol style="list-style-type: none"> 1. Presentation of updated detailed Programme; 2. Scheduling of activities of the Design Services; 3. Scheduling of all meetings; 4. Presentation and agreement on progress reporting structure and format. 	<ol style="list-style-type: none"> 1. Programme, key activities; 2. Assessment of the solutions; 3. Draft version of Progress report; 4. Draft version of Progress Report; 5. Draft version of Claims and Variations Report; 6. Draft Version of Programme Analysis Report.
RBDTD-LV-DS1-Progress meetings No. XX	<ol style="list-style-type: none"> 1. Presentation of monthly progress; 2. Agreement on Progress report; 3. Solving of administrative issues of implementation of the Design Services; 4. Risk management. 	<ol style="list-style-type: none"> 1. Monthly progress report; 2. Administrative issues on implementation of the Design Services.
TWG meetings	<ol style="list-style-type: none"> 1. Presentation of technical issues and proposal of solutions; 2. Agreement on the way forward for every technical issue. 	<ol style="list-style-type: none"> 1. List of technical issues to address during the meeting with the proposed solution options; 2. Input data for design analysis.
Implementing body and beneficiary management meetings	<ol style="list-style-type: none"> 1. Presentation of progress; 2. Administrative issues; 3. Agreement on the way forward for every technical issue; 4. Risk management. 	<ol style="list-style-type: none"> 1. Programme review; 2. Status Presentation; 3. Technical issues.
RBDTD-LV-DS1-Affected party meeting No. XX	<ol style="list-style-type: none"> 1. Presentation of administrative and/or technical issues related to Affected party and proposal of solutions; 2. Agreement on the way forward for every administrative and/or technical issue. 	List of administrative and/or technical issues to address during the meeting with the proposed solution options.
Meeting with NoBo, AsBo and design expertise	<ol style="list-style-type: none"> 1. Presentation of design solutions, comments from NoBo or design expertise and proposal solutions; 2. Agreement on the way forward for every comment. 	List of comments to address during the meeting with the proposed solution options.
Design Review Coordination Meeting	<ol style="list-style-type: none"> 1. Presentation of consolidated checklist; 2. Review and resolution of open comments. 	Consolidated checklist.
Interface Management Meeting	<ol style="list-style-type: none"> 1. Presentation of progress regarding Interface Management process; 2. Agree on the next steps. 	<ol style="list-style-type: none"> 1. Interface list; 2. Interface Control Forms.

4.8.3. Party responsible for the organising the meeting shall ensure the following:

- (a) Informing of the participants on the meeting with the request to submit agenda items and necessary data (at least 2 weeks in advance, in case of TWG meeting at least 1 week in advance);
- (b) Obtaining necessary input data for the meetings and sharing with the Client;
- (c) Managing the agenda of the meetings. The final agenda will be set by the Client. The Consultant will be obliged to distribute data before the meetings (at least 1 week in advance);
- (d) Prepared documents according agenda shall be prepared 2 (two) days before meeting and upload to CDE;
- (e) Leading of the meetings. The Client will lead and chair kick-off meeting, inception meeting and progress meetings,;
- (f) Organising a venue for the meetings;
- (g) Distribution of the signed minutes of the meetings and data after the meeting (at least 1 week after the meeting). The Client will check and confirm/approve all the meeting minutes.

4.8.4. The Consultant shall be responsible for the preparation of minutes of all meetings where Consultant participates during the Design process. The Consultant shall have acceptance from the Client on the prepared minutes of the meeting.

4.8.5. The Consultant shall be responsible for the interpretation services to Country's language of meetings where Affected Party participates during the Design process, if necessary.

4.9 Risk management

4.9.1. The Consultant shall plan in advance all its activities necessary to carry out the full scope of the Services in due time and in the agreed quality by considering the all relevant risks and minimising their adverse influence on costs and time schedule. Without limitation, such risks include:

- Restrictions by landowners to access the land plots for the site investigation;
- Weather conditions which may affect site investigation performance;
- Possible track realignment outside the borders of approved Rail Baltica route;
- Delays, inactivities, procrastination of the Affected parties regarding the provision of the Services;
- BIM strategy development and system implementation delays for any reason;
- Land acquisition process, Environmental impact assessment and related procedures;
- Delayed commencement of the Works and delayed Works during construction;
- Changes in the Design guidelines and the Client's requirements
- Changes in applicable laws and regulations;
- Legal actions by third parties.

4.10 Language

4.10.1. The Consultant shall prepare bilingual design documentation, i.e. in English and Country's language.

4.10.2. Client is not and shall not be responsible for the translation of national legislation into English language. The Consultant shall cover the costs for the translation of national legal acts and any other documents, if necessary for the Consultant for implementation of the Services.

4.10.3. The Consultant shall ensure the required technical, legal level of communication in English and Country's language.

4.10.4. Document translations without proofreading and involvement of an experienced experts would be rejected. List of the documents to be provided and translated:

Table 10: List of the documents to be provided and translated

No.	Document name	English language	Country's language
Agreement implementation			
1.	Correspondence between Consultant and only Client	YES	NO
2.	Correspondence and minutes of meetings between Consultant and Affected Parties	YES	YES
3.	Inception, Progress, Technical Working group (TWG), BIM collaboration meetings (agenda, necessary data, minutes of meeting)	YES	NO
4.	Meetings with Implementing body, Beneficiary, NoBo, AsBo, design expertise (agenda, necessary data, minutes of meeting)	YES	NO
5.	Programme	YES	NO
6.	Quality Assurance Plan	YES	NO
7.	BIM Execution plan (BEP)	YES	NO
8.	Design progress reports	YES	NO
9.	Design supervision progress reports	YES	NO
10.	Final report after completion of the Design Services	YES	NO
11.	Final report after completion of the Design Supervision Services	YES	NO
Site investigation (per investigation)			
12.	Investigation Programs	YES	YES
13.	Permissions	YES	YES
14.	Site investigation reports	YES	YES

No.	Document name	English language	Country's language
15.	Application for approval investigation program, reports, receiving permits	YES	YES
16.	Payment documentation	YES	YES
17.	Presentations	YES	YES
Design documentation			
18.	Master design	YES	NO considering the following: Shall be translated in Latvian if requested by AP for the purpose of acquiring the preliminary approval at MD stage.
19.	Applications for receiving Technical conditions from Affected parties	YES	YES
20.	Technical conditions from Affected parties	YES	YES
21.	Applications for building permits	YES	YES
22.	Building permits	YES	YES
23.	Conceptual design	YES	YES
24.	Detail technical design	YES	YES
25.	Construction technology and work organisation part	YES	YES
26.	Bill of quantities	YES	YES
27.	Maintenance manual	YES	YES
28.	Environmental reports (including monitoring report, surveys and studies).	YES	YES
29.	Land acquisition plan	YES	YES
30.	Plans for deforestation of land plots and cutting of trees	YES	YES
31.	Building design in a minimum composition (BDMC). Application for Construction Permits according to national law and inquiring technical conditions	YES	YES

5 Scope of Deliverables

- 5.1.1. During provision of the Design Services, the Consultant shall prepare all deliverables necessary for the implementation of Technical specification requirements, required to obtain the approved DTD for all BP.
- 5.1.2. The Consultant shall prepare all necessary deliverables within the deadlines specified in the Agreement. All deliverables and documentation shall be delivered in, PDF format and other native-editable source file format (e.g., MS Word, MS Excel, Autodesk Civil3D, Bentley OpenRail / OpenRoad, NWC, Primavera P6, etc.) and shall include all styles and external references to allow the Client to fully re-create the drawings when needed, and non-editable/open file formats (PDF, NWD, XML, IFC). The main deliverables to be provided as part of the Services, but not limited to, are as follows:

5.2 Design deliverables

- (a) Site investigation reports;
- (b) Master Designs;
- (c) Land acquisition plans;
- (d) Conceptual design;
- (e) Detailed Technical Design before upload in BIS;
- (f) Building and structure demolition designs;
- (g) Detailed Technical Design approved in BIS (by VDzTI);
- (h) BIM models, data and documents according to EIR and BEP;
- (i) Building design in a minimum composition (BDMC) to receive Building Permits according to Country's legislation and technical conditions as well as to ensure validity of the technical conditions;
- (j) On Demand Services - "DTD in BIM LoD 400" (if requested by the Client).

5.3 Agreement implementation process deliverables

- 5.3.1. The Consultant shall be responsible for the provision of the following Agreement implementation process deliverables:
- (a) Programme;
 - (b) Design progress report (monthly);
 - (c) Design Supervision progress report;
 - (d) Final report after completion of the Design Services;
 - (e) Final report after completion of the Design Supervision Services;
 - (f) Minutes of the meetings.

5.4 Bill of quantities

- 5.4.1. A classification system for all elements and assets will be used by the Consultant in order to deliver the Bill of quantities. The requirements for the Classification system will be described in the Design guidelines "Building Information Management (BIM) Employer's Information Requirements".
- 5.4.2. The Bill of quantities needs to be delivered to the CDE in the required file formats. In addition, all files shall also be delivered in Excel, Word and PDF format.
- 5.4.3. The Consultant shall deliver the Bill of quantities according to the requirements of Country's legislation, laws, rules and standards.

5.5 Visualisation of technical solutions

- 5.5.1. The Consultant, after agreement with the Client on the scope and content, shall prepare the visualisation for every Design priority section of final DTD solutions.
- 5.5.2. The Consultant shall follow the following minimal requirements and guidelines for the preparation of the visualisation data set:
 - 1) Overview of the planned alignment and landscape situation including orthophotos;
 - 2) A flyover video of full design section shall be created showing the administrative municipality, town and city borders including a 360-degree flyover of most interesting and meaningful point-type construction objects;
 - 3) Detailed and realistic render of 100 m wide corridor along the track alignment axis;
 - 4) 500 m - 1 km on both sides of the track of simplified surrounding terrain including forest areas, buildings, bodies of water (e.g. rivers or lakes), high voltage lines and other meaningful landmarks;
 - 5) Designed and existing bridges, viaducts, tunnels, eco-ducts, roads and other ecosystems;
 - 6) Designed noise barriers, fences, electric cables, catenary posts, lighting equipment;
 - 7) Designed underground utilities shall be represented by using a cross section cut at several places of the design section;
 - 8) Moving passenger and freight (where applicable) train models;
 - 9) Moving existing train and road vehicles, if applicable - In situations if the designed alignment corridor crosses or comes near (up to 3 km from alignment axis) to the existing train or road infrastructure;
 - 10) All the graphics, texts or numbers used in the video must align with visual identity of the project and must be agreed with the Client;
 - 11) Technical specifications of the video:
 - Resolution: 1920x1080px;;
 - File format: *.MP4 or *.MOV (encoded using H.264 codec for the best quality/file size ratio);
 - At least 25 fps.

6 Design Supervision Process

- 6.1. The Consultant shall ensure the Design Supervision Services for the Design sections with the involvement of the experts responsible for the Design Services. The Consultant shall carry out the Design Supervision Services for all sections/construction objects/building permits in accordance with Country's construction legislation and these Technical Specifications. The Design Supervision Services includes supervision of cultural heritage objects' design (reconstruction) implementation in accordance with Country's legislation.
- 6.2. The Consultant shall provide the Design supervision reports to the Client. The Consultant shall coordinate with the Client the decisions taken by the Consultant during the Design Supervision Services provision. The Consultant shall agree with the Client the approval of variation orders being issued during the construction process.
- 6.3. The Consultant is responsible for construction site visits according to the programme of the Design Supervision Services to ensure work and material quality standards, and each construction site survey shall be entered in the author's supervision journal.
- 6.4. The Consultant shall attend construction work consultations and construction site meetings at the time coordinated with the Client's representatives and, if required, other parties involved in the construction works. The meetings shall be attended by specialists according to implemented construction activities. It is planned that Design Supervision Services will include regular construction site meetings (e.g. contract mobilization, progress, design supervision, question and answer, environmental, pre-commission, as-built coordination meetings) that will take place on weekly and monthly basis or as per necessity.
- 6.5. The Consultant, without request of the additional compensation, shall attend construction site also outside normal working hours. The Client shall be informed on the technical reasons of the visit.
- 6.6. The Consultant shall carry out the corrections of design errors and insufficiencies during the course of the construction works, without additional compensation. The Consultant shall provide the corrected design errors to the constructor for the approval within 5 days after being noted about the non-conformity or agree with the involved parties on a different deadline if necessary. The Consultant undertakes to inform the Client in writing immediately about the discovery of any deviation from the design. The Consultant shall carry out the necessary DTD modifications and additional technical solutions with the approval of the Client and/or Affected party and/or NoBo/AsBo and/or Design Expertise and/or Construction board as applicable in a fastest possible manner and format, so that construction works could progress without or with minimum delays. The Consultant shall propose and agree the modification procedure with the Client, before start of the design supervision works. The files shall be provided to the Client in editable formats (DWG, DGN, etc.).
- 6.7. The Consultant shall carry out changes or corrections of the MD and/or DTD without additional compensation if the need arises due to mistake or nonconformity in the design or other fault or inaction of the Consultant. In such cases the Consultant ensures repeat technical assessment of the DTD, approvals in the state and municipal institutions, Design Expertise and Construction Board (if needed) on its own expenses and without variations.
- 6.8. The Consultant shall ensure conformity with the DTD during commissioning of completed construction works within the scope of the Designer's responsibility.
- 6.9. The Consultant shall check construction work (including technological and other equipment, construction products and materials) compliance with the DTD and shall not allow works non-compliant with the DTD. The Consultant shall consult the Client on current issues and, if necessary.

- 6.10. The Consultant shall check if the DTD and as-built documentation is up-to-date.
- 6.11. Upon the request of the Client, performer of construction work, construction supervisor, construction inspector or other official the Consultant shall arrive to the construction site as early as possible, but latest within 24 hours after the request is received.
- 6.12. The Consultant undertakes to provide the Services carefully, in the best interests of the Client and for the best benefit of the Client, to act during the Services on the level of a professional, responsible and prudent consultant and to prevent damage to the Client.
- 6.13. The Consultant undertakes to immediately inform the Client in writing in all substantial circumstances related to the provision of the Services, in particular those that may induce the Client to change the instructions given to the Consultant. Disclosure of performance difficulties shall not limit the Consultant's liability arising from this Agreement.
- 6.14. The Consultant undertakes to submit to the Client once per month a written report on the provision of the Services (content, volume, delivery time etc.).
- 6.15. The Consultant shall return to the Client everything that has been received and created during the period of provision of the Services, as well as what Designer has received from the Client and which he did not use for the provision of the Services. The Consultant is obliged to transfer the documents obtained or provided during provision of the Services to the Client within 30 (thirty) days after the necessity to work with the documents has expired.
- 6.16. The Consultant shall be present in the following tests/inspections when requested considering such notifications:
- Site test - 1 day before the test/inspection;
 - Factory acceptance test - 7 days before the test/ inspection;
 - Laboratory test – 2 days before the test/inspection.
- 6.17. The Consultant shall issue approval for the tests/inspections within 4 working days. BIS approval, when necessary, within 2 working days.
- 6.18. The Consultant shall reply to the request for information (RFI) within 10 working days.
- 6.19. The Consultant shall issue approval for the method statement within 10 days. Following BIS approval, when necessary, within 2 working days.
- 6.20. The Consultant shall issue opinion of material and product conformity within 10 working days. BIS approval, when necessary, within 2 working days.
- 6.21. The Consultant shall issue approval for shop drawings within 9 days or agree with the involved parties on a different deadline if necessary. BIS approval, when necessary, within 2 working days.
- 6.22. The Consultant shall issue approval for RAMS and interoperability documents within 7.
- 6.23. The Consultant shall respond to following performer's of construction work design reports within 28 days:
- 6.23.1. Constructability report;
- Report on construction implementation solutions applied across design documentation to achieve potential time savings and adapt to contractor's technologies, including analysis of design against time schedule implementation and general potential derogations from proposed construction works across all design leading to time schedule optimisation.
- 6.23.2. Scrutiny report;

Report addressing verification of submitted documentation, including:

- (a) Items for which the contractor considers the design does not contain necessary details to proceed with construction works;
- (b) Items for which the contractor considers the DTD contains errors to in force guidelines and regulations leading to project or whole life cost issues;
- (c) Items for which clarification shall be submitted by the Consultant;

6.23.3. Cost optimization report

Report on cost evaluation and technical amendments of the design (in accordance with applicable laws) that may reduce CAPEX, including:

- (a) Technical justification of proposed change;
- (b) Alternative cost evaluation of submitted design;
- (c) Whole life cost assessment of potential OPEX changes;
- (d) Estimate of redesign and re-expertise costs and approximate time for delivery.

7 Building Information Modelling (BIM)

- 7.1. BIM requirements below and particularly regarding defined Level of Definition (LoD) applies to the Design Services as far as described in this Technical Specification.
- 7.2. Client's BIM requirements with all additional documents (templates etc.) are outlined in Design Guidelines. The Consultant shall follow these documents throughout all Design process.
- 7.3. BIM requirements shall apply to full scope of Services, including all technical disciplines that are included in the Consultant's design scope (including Affected parties infrastructure and utilities), if not required otherwise in this TS.
- 7.4. The Consultant shall follow BIM Requirements and use the Templates set in Design guidelines to prepare BIM documents and related deliverables. See Annex No. 1 for more details.
- 7.5. The Consultant shall use Master Bills of Quantities table when creating metadata for quantity take off for all models generated.
- 7.6. The CDE and the whole document management system shall be hosted by the Client. The Client shall provide a limited number of licenses for the access to CDE.
- 7.7. The Consultant shall prepare and provide for Client's approval a full BEP with TIDP, MIDP according to the BIM Requirements. As a minimum, but not limited to, BEP shall also contain following information:
 - (a) Organizational Roles and Staffing;
 - (b) Modelling and clash test tolerances;
 - (c) Coordinate system and models' alignment rules and procedures;
 - (d) Model partitioning principles and interfaces;
 - (e) Rules on nomenclature of file names;

- (f) Collaboration Plan and Quality Control;
 - (g) All Quantity Take-offs and Extractions;
 - (h) Updated Objects Attribute Matrix;
 - (i) CDE usage for the design deliverable submission;
 - (j) Level of Detail (LOD) - Level of Geometry (LOG) and Level of Information (LOI) – for Conceptual Design and Detail Technical Design Stage;
 - (k) 3D model details – for Conceptual Design and Detail Technical Design Stage;
 - (l) Assemblies of the structure models.
- 7.8. All changes, clarifications or amendments shall be represented and updated in BEP during the execution of the Services. Any deviations or changes in the BEP, if those are recommended or necessary, shall be permitted only after Client's approval.
- 7.9. The Consultant shall follow all CAD standards set in Design Guidelines and BIM Requirements. These CAD Standards define minimum standards and requirements for the drawings:
- (a) Drawing and Model referencing procedures;
 - (b) Exchange and revision procedures;
 - (c) Line-types;
 - (d) Text and Dimensioning;
 - (e) Annotations;
 - (f) Layers/Levels;
 - (g) Drawing Templates.
- 7.10. The Consultant shall provide native-editable and *.IFC 3D models according to DG BIM EIR listed requirements. Native-editable model files shall be delivered with all their parent component library files. Native-editable models shall be delivered as editable format for further model development and upgrades. Native-editable files and their component library will be the Clients property when it will be delivered in the Clients' CDE.
- 7.11. The Consultant shall include all 3D reference models of technical disciplines which are directly interfering and are needed for spatial coordination of the models but are beyond the Consultant's design scope in Master Design and DTD design deliverables. Such reference models may be provided in LOD (LoG and LoI as per EIR definitions) which is lower than specified by the Rail Baltica Design Guidelines.
- 7.12. In case LoG (Level of Geometric detail) definitions of the Design Guidelines are unclear the Consultant shall seek for clarification from the Client or in BIMForum Level of Development requirements, version no older than 2020, available at website bimforum.org.
- 7.13. In cases when the Consultant notices rationally unjustified duplication in design information content required by Client's BIM requirements and Client's other requirements (e.g., requirements for printed documents when their function can be fulfilled by BIM content and/or processes) the Consultant shall inform the Client and get approval for a respective work optimization.
- 7.14. The Consultant shall ensure the sufficient performance capacity of hardware and software necessary to undertake 3D model analysis (clash check, etc.) and deliver the Services at the level set in DG BIM Requirements. The Client shall not accept software limitations as the reason for failure to fulfil the design requirements set in this TS and BIM requirements.

- 7.15. The Client shall ensure the necessary training for the Consultant's personnel working with CDE and other workflows. The Consultant shall be responsible for the participation of the required personnel in these trainings.
- 7.16. The Consultant shall submit work-in-progress models 3 (three) days prior BIM Collaboration Meeting. The Consultant is responsible for presenting this model during the meeting.
- 7.17. The Consultant must inform the Client on the design issues and propose solutions before submitting it to the Client's CDE.
- 7.18. All utilities (existing/renovated/reconstructed/relocated) shall be designed as 3D models with full geometry as mentioned in DG BIM EIR document.
- 7.19. In cases where utilities must connect to an existing utility network outside Designed railway and its related infrastructure's right of way, these utility connections shall also be designed in 3D with full geometry as mentioned in DG BIM EIR document. Extent of these connections to existing utility infrastructure shall be modelled to the closest utility connection point (valve, electricity mast, connection box, manhole/well, etc.) and shall be included in BIM model.
- 7.20. For all utilities with unknown locations, the Consultant shall agree 3D modelling details with the Client in BEP separately.
- 7.21. The Consultant shall provide planting areas in 3D models according to the landscaping design data.
- 7.22. The Consultant shall identify Geodetic CP0 benchmarks and show development with correct coordinate and altimetry systems in federated models in each stage of the design.

8 Consultant's Team

8.1 Requirements for key-experts

- 8.1.1. The Consultant shall ensure the participation of key experts, including certified/licensed experts for implementation of the Design Services as described in procurement documents:

Table 11: Requirements for key-experts

Project manager	
Main responsibilities	Management of design process at administrative level;
Project experience	experience as a Project manager in managing at least one fully completed railway or state or regional importance highway road detailed technical design project; - design is completed within the previous 10 years (2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022 and 2023);
Language level	English at least B2 Level ⁵ .

⁵ Language skill level is based on Common European Framework of Reference for Languages (see <http://europass.cedefop.europa.eu/resources/european-language-levels-cefr>)

Design manager (Būvprakses tiesības dzelzceļa sliežu ceļu projektēšanā)	
Main responsibilities	Management of all design disciplines and design processes at technical level; Certified in the relevant area of the Design Services in accordance with Country's legislation;
Professional level	Following Country's construction legislation authorised to design railway tracks;
Project experience	experience as a Design manager (lead designer) in at least one fully completed railway track detailed technical design project covering the following: - design is completed within the previous 10 years (2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022 and 2023); - 1435 mm gauge and TSI verified railway; - design speed ≥ 201 km/h;
Language level	English at least B2 Level.
Railway track designer (Būvprakses tiesības dzelzceļa sliežu ceļu projektēšanā)	
Main responsibilities	Technical solutions for 1435mm gauge railway tracks design; Certified in the relevant area of the Design Services in accordance with Country's legislation;
Professional level	Following Country's construction legislation authorised to design railway tracks;
Project experience	experience as Railway track designer in at least one fully completed railway track design project covering the following parameters: - design is completed within the previous 10 years (2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022 and 2023); - 1435 mm gauge and TSI verified railway; - design speed ≥ 201 km/h;
Language level	English at least B2 Level.
Bridge designer (Būvprakses tiesības tiltu projektēšanā)	
Main responsibilities	Technical solutions for the structural design; Certified in the relevant area of the Design Services in accordance with Country's legislation;
Professional level	Following Country's construction legislation authorised to design constructions and structures;
Project experience	experience as Construction designer in at least in at least two fully completed railway or road bridge or viaduct new construction detailed technical design projects; - within the previous 10 years (2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022 and 2023);
Language level	English at least B2 Level.

Road designer (Būvprakses tiesības ceļu projektēšanā)	
Main responsibilities	Technical solutions for the roads design; Certified in the relevant area of the Design Services in accordance with Country's legislation;
Professional level	Following Country's construction legislation authorised to design roads;
Project experience	experience as Road designer in at least one fully completed State or Regional importance road detailed technical design project; - design is completed within the previous 10 years (2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022 and 2023);
Language level	English at least B2 Level.
Land Amelioration designer (Būvprakses tiesības Meliorācijas sistēmu projektēšanā)	
Main responsibilities	Technical solutions for the roads design; Certified in the relevant area of the Design Services in accordance with Country's legislation;
Professional level	Certified in field of Land Amelioration System Design;
Project experience	During the last 10 years (2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022 and 2023) has gained experience as Land Amelioration Designer in at least one fully completed design project.

8.2 Approval process of key-experts

- 8.2.1. Consultant shall receive an approval from the Client on the proposed key-experts. The Client shall reject the proposed key-expert in case of non-compliance with minimal qualification requirements.
- 8.2.2. If a certificate or/and other legal recognition document is required according to Country's national legislation for an expert to carry out the Design Services, is not available before the Consultant submits the list of key-experts for the approval by the Client, the Consultant is required the following:
- (a) to prove that such expert has submitted an application to receive a certificate;
 - (b) the Consultant shall ensure that such expert has necessary education and experience to fulfil Country's national requirements to receive a certificate or/and other legal recognition document;
 - (c) the Consultant takes full responsibility for the risk if such expert would not receive a certificate due to Consultant's fault or insufficient understanding of Country's national regulations regarding certification procedures and this situation would delay the provision of the Design Services.
- 8.2.3. The Consultant shall provide written and signed reference from a client proving key-expert's required project experience. In case a certain reference is not available, the Consultant shall provide a self-signed declaration proving key-expert's required project experience with client's contact information.

8.3 Certification requirements for key-experts

- 8.3.1. The Consultant shall be responsible for ensuring that the proposed Key-experts would have necessary certificates or/and other legal recognition documents in accordance to the Country's construction legislation.

8.4 Change procedure for the key-experts

- 8.4.1. Only in exceptional cases key-experts included in the Agreement can be replaced. The Consultant has no right to change the key-expert without the approval of the Client. For each key-expert change, the Consultant shall obtain Client approval.
- 8.4.2. The proposed key-expert's qualifications must be equivalent or better than the replaced key-expert.
- 8.4.3. The Client reserves the right to request the Consultant to replace a key-expert in case of any of the following reasons:
- (a) repeated careless performance of duties;
 - (b) incompetence or negligence;
 - (c) non-fulfilment of obligations or duties stipulated in the Agreement;
 - (d) poor knowledge of English language (unsatisfactory presentation, writing skills in English);
 - (e) termination of employment relations with the Consultant (Sub Consultant);
 - (f) design rights no longer exist, or certificate expired during design.
- 8.4.4. Failing of the Consultant to propose another key-expert with equivalent or better qualifications within 10 (ten) days, the Consultant is considered to be under Delay of obligations pursuant to the Agreement.
- 8.4.5. To change the key-expert, The Consultant shall submit a request with all documents necessary for the Client to make sure that the proposed key-expert satisfies the qualification requirements set for him.
- 8.4.6. The Client shall approve or reject the replacement, by specifying the reasons for rejection, of a key-expert as soon as possible, but no later than within 10 (ten) days after the receipt of all information and documents necessary for a decision and approval in accordance with the provisions in this Agreement.

8.5 Additional experts

- 8.5.1. The Consultant shall ensure the participation of all the necessary additional experts, including certified/licensed experts in the number that is required to complete the Services and this shall not cause any additional costs to the Client.
- 8.5.2. The following non-exhaustive list of additional experts, including certified and licensed experts required to complete the Services:

Table 12: Additional experts

No.	Additional experts
1.	Track & Alignment design team (1435mm gauge)
2.	Track & Alignment design team (1520mm gauge)
3.	Structures design team
4.	Hydrology and drainage design team
5.	Geotechnical team
6.	Geodesy experts/engineers
7.	Railway sub-systems design team (1520mm gauge)
8.	Railway sub-systems design team (1435mm gauge)
9.	Road design team
10.	Drainage design team
11.	Public utilities design team. All certified/licensed designers/experts to reconstruct all Affected parties' utilities (e.g. gas supply networks, heat supply networks, water supply networks, canalization networks, communication cables, drainage systems etc.)
12.	Construction planning expert/engineer
13.	Cost estimation expert
14.	System Engineering Manager
15.	Reliability, Availability, Maintainability, and Safety (RAMS) Engineer
16.	Verification manager
17.	Requirements manager
18.	Configuration manager
19.	Contract Manager
20.	Project Planning Manager
21.	Stakeholder Manager / Public relations coordinator
22.	Design Quality Control engineer
23.	Geographical information systems (GIS) Expert
24.	Technical translators (from/to Latvian-English language)
25.	Land Acquisition expert
26.	Environment experts team

	All certified/licensed experts in the related field of environment issue (e.g. mammal monitoring, species and habitat protection experts, noise expert etc.) assessment, investigations, monitoring and consultations as required in the environment requirements.
27.	Noise & Vibration expert
28.	Cultural heritage expert,
29.	Deforestation expert (to prepare deforestation plans),
30.	Stations Design expert
31.	Spatial planning expert / Architect
32.	Tunnel expert
33.	Interface manager
34.	BIM Coordination team
35.	Demolitions (experts for different structure and building demolishing designs), temporary works and construction process

9 Quality Assurance

- 9.1. The Consultant must prepare and submit to the Client the Consultant's Quality Assurance Plan. The Consultants is responsible for and shall guarantee that the investigation works and the Design Services are controlled at all aspects of the Project implementation, and compliance with standards and requirements is ensured. The Quality Assurance Plan shall be submitted to the Client with the Programme.
- 9.2. The Quality Assurance plan shall include at least the following, but not limited to:
 - (a) Scope
 - (b) Quality plan inputs
 - (c) Quality Objectives
 - (d) Quality Plan Responsibilities
 - (e) Control organization and procedures;
 - (f) Control of documented information
 - (g) Control of nonconforming outputs
 - (h) Staff organization, resources and means;
 - (i) Customer and other interested parties' communication;
 - (j) Management system and responsibility;
 - (k) Design control and management and development;
 - (l) Identification and traceability
 - (m) Monitoring and measurement
 - (n) Calculation checks and documentation;

- (o) Review procedures;
 - (p) Control of measurement and tests, and control of remedying of deficiencies;
 - (q) Control of suppliers and sub-Consultants;
 - (r) Document, designs, report register control (document management plan).
 - (s) Audits
- 9.3. The Consultant's Quality Management Systems shall comply with the main requirements of the RBR quality management system.
- 9.4. The Consultant shall provide access to appropriate business premises and shall participate amicably in any audit activities requested by the Client and according to provided Audit plan.
- 9.5. The Consultant shall confirm audit dates no later than 10 (ten) days after the Client's request to audit.

10 Document Control

- 10.1. The Consultant shall ensure that all the documents delivered to the Client are prepared according to Document Control requirements set in Annex A 11.
- 10.2. The Consultant shall ensure that all the documents delivered to the Client contain the following minimum, but not limited to, information:
- 10.2.1. RBR Logo, Document number, Title, Revision, Date of revision, Author – on cover sheet
 - 10.2.2. RBR Logo, Document number, Title, Revision - on headers of all document pages (including annexes)
 - 10.2.3. Table with referenced Documents (Number and Title) – on the last page of the document (before annexes).
- 10.3. The Consultant shall ensure that Document numbering and coding procedure set in Annex A 11 is rigorously followed. The Consultant shall use the latest version of Client's Code Register. The Client shall update the Code register during the period of Services and shall inform the Consultant, when update has been released.
- 10.4. The Consultant shall provide all deliverables with Deliverables Issue Register provided in Annex A 11 containing information about all provided documents, their previous submissions, version history, etc.
- 10.5. The Client shall check if the deliverables are in line with Document Control requirements during Administrative Review. If any non-compliance is found during the review, the documents shall be rejected.
- 10.6. The Client shall provide access to Client's document management system. The Client shall supply not more than 3 licenses for the Consultant's use, as well as access to available training material. If additional training is needed, the Client shall provide training at Consultant's request.

11 Conformity Assessment

- 11.1. Conformity assessment of subsystems and interoperability constituents will be in accordance Directive 2016/797/EU to ensure interoperability between the Rail Baltica Global project and the European railway network (NoBo assessment). NoBo assessment starts with Services and ends with formal certification of each separate completed railway subsystem.
- 11.2. The Client shall organize AsBo / NoBo assessment services. The Consultant shall cooperate with AsBo / NoBo assessment service provider and the Client, and provide all necessary design and supporting documentation.
- 11.3. Only full complete BP documentation, related to railway part of the design, shall be forwarded to Conformity assessor.
- 11.4. The Consultant shall ensure DeBo assessments are performed in case Affected Parties request such Conformity assessment to be done.

12 RAMS / CSM Requirements

- 12.1. The Consultant shall implement Reliability, Availability, Maintainability, Safety (RAMS) and CSM (Common Safety Methods) according to Regulation (EU) 2013/402, EN50126-1 standard, Rail Baltica RAMS Design Guidelines and RB Rail AS related procedures.
- 12.2. The Consultant shall design Rail Baltica high speed railway to meet the following RAMS high level requirements:
 - (a) The Design Guidelines shall determine Reliability Availability Maintainability and Safety targets (RAMS) which must be achieved by the operating Rail Baltica railway.
 - (b) The Rail Baltica railway transport system shall be safe, secure, efficient, cost effective, robust, reliable, durable and comfortable in all aspects, capable of delivering high standards of service quality within the forecasted levels of capacity and employ modern technology with proven performance characteristics.
 - (c) Performance and reliability shall be delivered at levels comparable to other leading international railway infrastructure.
- 12.3. The Consultant shall deliver the following RAMS/CSM documentation:
 - (a) Design Safety Plan;
 - (b) System definition;
 - (c) Hazard log following Risk assessment;
 - (d) Risk assessment report;
 - (e) Design Safety Report;
- 12.4. The Client undertakes to review of the Consultant documentation, where the part related to Risk management and Risk assessment as per Regulation 2013/402 shall be assessed by AsBo, according to the provisions set in 10. Conformity Assessment.

13 System Engineering Management

- 13.1. The Consultant shall carry out Design under a System Engineering approach following the RAMS life cycle (V-cycle) as indicated in the EN 50126 standard. The Consultant shall detail which evidence are to be provided at each stage as proof of compliance and fulfilment of each phase in the RAMS life cycle (V-cycle).
- 13.2. The Consultant shall prepare and provide all plans mentioned in this System Engineering Management section for Client's approval.
- 13.3. The Consultant is entitled to follow System Engineering activities as detailed in the RASCI matrixes included in the different system engineering processes.
- 13.4. The Consultant shall follow the RBR System Engineering Management Plan (Annex No. A3) and provide a detailed System Engineering Management Plan documenting the approach that will be adopted for the overall railway system engineering activities in the project.
- 13.5. The Consultant shall follow the RBR Requirements Management Plan (Annex No. A4) and provide a detailed Requirements Management Plan documenting the approach that will be adopted regarding Requirements Management.
- 13.6. The Consultant shall follow RBR Design Management Plan (Annex No. A6) and provide a detailed Design Process Management Plan documenting the approach that will be adopted regarding Design Process Management.
- 13.7. The Consultant shall follow RBR Configuration Management Plan (Annex No. A5) and provide a detailed Configuration Management Plan documenting the approach that will be adopted regarding Configuration Management.
- 13.8. For the design scope of works, the Consultant shall follow RBR Design Management Plan/Process and RBR Verification & Validation Management Plan (Annex No. A7)/Process provide a detailed Design Management Plan and Verification Management Plan (two plans) documenting the approach and program (planning) regarding Design and Verification of requirements. It shall cover design implementation and design verification activities performed by the Consultant up to final approval by RB Rail.
- 13.9. The Consultant shall provide Verification evidence (Report and Certification) of the correct implementation of design verification as agreed in the Verification Plan. Correct implementation meaning the fulfilment of the verification criteria as agreed in the Verification Plan. After internal approval of a Design Package based on the verification criteria, the Consultant will present the Deliverable officially to the Client that will accept/reject the delivery based on the verification criteria agreed.
- 13.10. The Consultant shall follow RBR Interface Management Plan (Annex No. A8) and requirements listed in Section "Interface Management" and provide a detailed Interface Management Plan documenting the approach that will be adopted regarding Interfaces.
- 13.11. The Consultant shall use the Requirements Management Environment defined by the Client. JAMA is the tool that shall be used for Requirements Management. The Consultant shall be responsible for purchase of the number of licenses necessary to carry out Requirements Management activities.
- 13.12. The Consultant shall ensure the Requirements Management Environment is used for tracking the Activity progress. The actual progress shall be live and up to date at any time during the provision of Services.
- 13.13. In order to track the progress of Activities, the Consultant shall report monthly (as part of Monthly Progress Reports) on the variation of the state of requirements with respect to the previous report. JAMA will be

used to issue Requirements Status Reports and to track changes between the reporting periods. The Consultant shall justify the variation of the state of requirements based on evidence. Evidence shall also be included in JAMA and traced to its related requirement.

- 13.14. The Client may request the Requirements Status Report at any time and the Consultant shall provide it within 2 days if such a request is made.
- 13.15. The Consultant shall provide an Organization Chart with the organization planned (roles and number of persons) to carry out the System Engineering activities fulfilling the project plan. The Consultant shall appoint at least the following resources:
 - 1) Design manager.
 - 2) Verification manager.
 - 3) Requirements manager.
 - 4) Configuration manager.
 - 5) Interface manager.

14 Interface Management

- 14.1. The Consultant shall ensure the responsibilities assigned to Consultant in ICFs are followed during the provision of Services.
- 14.2. The Consultant shall ensure technical expertise throughout the full Design, design supervision/Design service deployment and apply/contribute to the Interface management process by Interface identification, definition, agreement, design implementation, verification, and validation of interface requirements.
- 14.3. The Consultant during participation of Interface Management process implementation shall cover either Responsible Entity functions or Supporting Entity functions (as detailed in the Interface management process).
- 14.4. The Consultant shall be responsible for management of all technical interfaces, creating or supporting the definition and implementation of Interface control forms, related to Services, in particular, but not limited:
 - 1) Interfaces with Control Command and Signaling (CCS) subsystem;
 - 2) Interfaces with Infrastructure (Main Line and Local Facilities);
 - 3) Interfaces with Energy (ENE) subsystem;
 - 4) Interfaces with Rolling Stock;
 - 5) Interfaces with Shadow Operator (alignment with Operational and Maintenance concepts);
 - 6) Interface with Third Parties/Affected parties;
 - 7) Interfaces between 1435mm and 1520mm railways;
 - 8) Interfaces between neighbouring RB design sections;
 - 9) Interface between regional station designs.
- 14.5. The Consultant shall ensure that all requirements presented in Interface Management Register and all Interface Control Forms (ICFs) provided in Annex No. A12, as well as in the interfaces identified during the execution of contract works, are implemented in Detailed technical design, and verified and validated according to the Verification and Validation processes. The Client leaves the possibility to update Interface

Register and given Interface Control Forms during the full design and design supervision services deployment, the Consultant shall ensure all Interfaces and Interface Control Forms are resolved as described in Interface Management Plan.

- 14.6. The Consultant shall appoint an Interface Manager as a responsible person for implementation of Interface Management process internally and with other parties/subsystems.
- 14.7. The Consultant shall organize weekly Interface meetings with Client to discuss ongoing works and agree on next steps.
- 14.8. The Consultant shall be responsible (in case of being Responsible Entity) for organizing meetings to solve Interface matters with Supporting Entity. RBR appointed Interface Manager must always be informed of the meetings held and status of the ICFs discussions.
- 14.9. During Inception phase, the Consultant shall use the Interface Register and the interface related information provided in the contract to identify all pending interface requirements to be implemented in designs. Interface requirements pending to be implemented shall be all interface requirements in ICFs applicable but not implemented, and those requirements implemented but with issues identified in the respective Common Review Sheet. The Consultant will create a Traceability Matrix out of that information and provide it to the Client for discussion and approval. The Client will support the Consultant to clarify the interface requirements in ICFs in case needed.
- 14.10. Traceability Matrix of interface requirements implementation shall be produced prior to the start of activities for Detailed technical Design. Once approved by the Client, all pending or faulty requirements will become scope of the Design works. The production and agreement of an Interface requirements Traceability Matrix shall be foreseen as activity in Project schedule.
- 14.11. The Consultant shall contribute to the Interface Process, so that the clarification of interface requirements in ICFs provided, or the definition, agreement, and signature of new Interface Control Forms (if any) is accomplished within 60 days from the beginning of the ICF discussions, and all ICFs are signed prior to the start of activities for Detailed technical Design. The ICF Discussion phase shall be foreseen as activity in Project schedule.
- 14.12. Any additional ICF provided by the Client shall be added as part of the designs. For this, the Consultant shall foresee that ICF definition, agreement and signature activities is finished within 60 days from the receipt of request by the Client.
- 14.13. The Consultant shall ensure that all requirements in each Interface Control Form are implemented in the first submission of Detailed technical Design deliverables.
- 14.14. The Consultant shall ensure that each signed Interface Control Form is included in the final Detailed technical Design packages before that Detailed technical design is approved by the Client.

15 Project Management and Control

15.1 General Project Management Requirements

- 15.1.1. The Consultant shall be responsible for all aspects of the management and execution for the full scope of the Services, included but not limited to planning, control, reporting, supervision, administration, management of sub-contractors and stakeholders, quality assurance, health & safety management, security, development of procedures, ensuring all necessary qualifications and certifications for experts are valid.

- 15.1.2. Independent from all management and control activities which may be taken by the Client, the Consultant is fully responsible for:
- 15.1.3. Managing and controlling all Project activities with the target to keep and optimize the Project plan in any phase of the Project;
- 15.1.4. Foreseeing risks and possible problems and taking measures in advance;
- 15.1.5. Analysing and solving all problems and Informing the Client.
- 15.1.6. The Consultant shall be responsible for the provision of the following Services implementation deliverables:
 - a) Programme (Detailed and Summary);
 - b) Services progress report (monthly);
 - c) Design Supervision Services progress report (monthly);
 - d) Final report after completion of the Services;
 - e) Final report after completion of the Design Supervision Services;
 - f) Minutes of the meetings;
 - g) Official correspondence with all parties except for the Client;
 - h) All prepared presentations.

15.2 Project Execution Plan

- 15.2.1. The Consultant shall prepare PEP, the document that describes how the project will be executed, monitored, controlled, and closed in accordance with Project Management best practices, such as PMBOK (Project Management Body of Knowledge), IPMA (International Project Management Association) or other equivalent/similar requirements.
- 15.2.2. PEP shall include the following sections:
 - a) Project goals and objectives;
 - b) Affected parties and their responsibilities;
 - c) Clearly defined scope of work per BP;
 - d) Work Breakdown Structure (WBS);
 - e) Organization Chart (including Consultant team members and sub-consultants);
 - f) Responsibility Matrix;
 - g) Cost Breakdown Structure (CBS)
 - h) Requirements Management Plan;
 - i) Configuration Management Plan;
 - j) Quality Management Plan;
 - k) Resource Management Plan;
 - l) Change / variation management process;
 - m) Risk management plan, including list of possible risks and mitigation strategies;

- n) Communications plan, including what is to be communicated, to whom and when;
- o) Clearly defined milestones and the process for verifying when milestones are reached.

15.2.3. The Consultant shall submit PEP as part of Programme and shall update it every 6 months during execution of the Services.

15.3 Project Planning and Programme

15.3.1. Programme shall include WBS, which should fulfil Level 3 AACE requirements. The Consultant's WBS shall be based on the RBR WBS provided in Annex No. 19 and shall start at the lowest level of the RBR WBS (for each BP and DPS).

15.3.2. The Consultant shall provide a Detailed Programme (AACE Level 04) based on the developed WBS which will cover all Design Services scope and sufficient project milestones and other significant deliverables against which progress can be reported. The Detailed Programme shall consist of a precedence network diagram using the Critical Path Methodology (CPM) to show each essential activity in sequence to meet the contractual milestones. It shall be detailed to a level where activities duration and resource can be estimated accurately, and progress could be confidently assessed. A basis of estimate for both attributes shall be provided for each activity. All Programme basis and assumptions must be documented and all interfaces and influences that could impact the work must be shown in the Programme.

15.3.3. The Consultant shall ensure that the following requirements as well as the requirements set in Annex No. 19 are respected during the provision of the Services. No activity in the Programme shall exceed 60 (sixty) calendar days in duration. The Programme must not include any negative float and open-ended activities. The completion date must be modelled using a "Finish-On-or-Before" and no other activity apart the commencement and the completion dates shall be constrained. More than 95% of the relationships shall be "Finish-To-Start". Activities should not be logic tied using negative lags (leads) and positive lags should be kept to a minimum (less than 5% of the relationships and not exceed fourteen (14) days. "Start-To-Finish" logic ties are not allowed. Float in the Programme is not to be used by the Consultant as a substitute for contingency. Failure to comply with these requirements will invalidate the Programme Submission.

15.3.4. The Detailed Programme shall be developed using the latest version of Oracle Primavera P6 as scheduling tool and within the RBR Oracle P6 Cloud environment as prescribed in Annex No. 19. The Primavera P6 settings shall be in accordance with the Client's requirements, which enables easy and efficient control of the progress and changes in the Programme. The Client will provide 1 (one) Primavera P6 license to the Consultant.

15.3.5. An overall Progress Curve using the resource loading and comparing earned and forecast progress to planned progress in terms of percent complete against a monthly time scale. Consultant's assessment of actual progress must be verifiable by the Client. This section will be in the monthly progress report and shall also include incremental and cumulative manpower histograms and curves comparing actual and forecast manpower levels to those planned (including subcontractors identified separately).

15.3.6. A Cumulative Schedule Variance shall be calculated: The following criteria are to be used to define the minimum required actions on the Consultant's side to address schedules deviations:

- a) Negative cumulative variance exceeding 5% must be addressed with a recovery plan or mitigation plan including a timeframe for the results to be achieved;
- b) Cumulative negative variance under 5% requires a list of preventive/corrective actions;

- c) Positive variance will be accepted, and cash flow forecast and impact will be adjusted accordingly.

15.3.7. The Summary Programme is used as the basis for developing and reporting to management and key stakeholders from initiation to completion. The Summary Programme will be developed in time-scaled format and should be limited to 1 page. The Summary Programme activities and progress status must be related to the status performed on the Detailed Programme.

15.3.8. Submissions made by the Consultant shall be in both non-editable file (.PDF) and native Primavera P6 (.XER) file formats for the Detailed Programme and native Microsoft EXCEL (.XLSX) for the report. The Consultant's Programme will form an integral part of the overall Client delivery Programme and Reporting structure.

15.3.9. In addition, the Consultant shall submit a complementary and detailed narrative description of its plan for performing the work including, but not limited to:

- a) Summary Description of the scope;
- b) Format of activity descriptions including any abbreviations used;
- c) Staffing plan indicating total manpower required per reporting period, inclusive of subcontractors;
- d) Activity calendars used, particularly non-standard work patterns;
- e) Holidays, weather windows and other non-work periods;
- f) Assumptions and Constraints;
- g) Assumed production rates, equipment, and personnel requirements by craft to complete a resource loaded Programme;
- h) Description of the critical path;
- i) Description of the near critical paths (these activities being defined as a total float below fifteen (15) days);
- j) Listing of key interfaces with the Project Manager/ Client/ Affected Parties/Implementing Body or others and the dates those interfaces are planned to occur;
- k) Listing of information required by the Consultant to meet Programme together with the date that the information is required;
- l) Details of any significant changes including revisions to the critical path since previous Approved or Submitted Detailed Programme;
- m) Impact of Progress;
- n) Details of Changes to Key Dates, Milestones, and Associated float and time risk allowances;
- o) List of Implemented / Predicted Changes or Variations;
- p) Any delay mitigation measures incorporated;
- q) All dates for the Contractual Milestones and Key Dates, Deadlines (including intermediate terms) and Commencement, Completion and Handover Milestones. Any other milestones and/or activities provided by the Client;
- r) All dates when the Consultant plans to submit any particulars or deliverables of the design or temporary works design;

- s) All dates when any information to be provided by the Client or third parties will be required by the Consultant;
- t) Details of any consents, permits and licenses development, preparation, submission, and approvals allowing enough time for each stage of the process and allowances for resubmission;
- u) Details of any Affected Parties interfaces and/or documents preparation, submission and approvals allowing enough time for each stage of the process and allowances for resubmission;
- v) The Consultant shall describe details of any measures to be taken to minimize the effect of the Consultant's operations on the public including as a minimum (where applicable): intended working hours, safety risk assessments;
- w) Clear details on Services completion processes and timeframes;
- x) Clear identification of any Client obligation;
- y) Project Control Management Plan;
- z) Programme Narrative.

15.3.10.

Design Progress Performance report The Consultant shall retain the Approved Detailed Baseline in all Detailed Programmes submitted during monthly reports, unless the Client permits the baseline to be amended. This will facilitate the assessment of progress, cost, and performance.

15.3.11.

Together with each Monthly Progress report the Consultant shall provide a Programme Analysis Report:

- Updated Detailed Programme for approval, showing the progress, remaining duration, actuals, physical percentage complete and forecast completion dates and submit it to the Client for acceptance;
- Updated Summary Programme with progress aligned with Updated Detailed Programme;
- Updated Programme Change log where every modification done on the Detailed Programme (activities, logic before and after, Constraints, etc...) are recorded;
- Updated Programme Narrative;
- Programme Variance Report for review by the Client at Monthly Progress Meeting which shows cumulative and period movement data. Any areas which show significant schedule or Cost variance shall be investigated, explained and mitigation measures identified if applicable.

15.3.12. The Consultant shall undertake ad-hoc or as requested Programme exercises as specified by the Client (which may include 'what-if scenarios'). These exercises shall be undertaken by the Consultant within 10 (ten) days of the request.

15.3.13. The Consultant shall ensure that the updates and changes in the Programme follow these requirements:

- The Programme shall remain a relevant document capable of accurate reporting on an ongoing basis and able to be relied upon when other associated parties are planning their

works. If it becomes apparent that this is not as described, the Consultant shall revise and re-submit the Programme for approval by the Client;

- If it is evident that the rate of progress is insufficient to ensure timely completion as per the contractual milestones and time periods, the Consultant shall revise their Programme to demonstrate the intended plan to recover. A list of associated mitigating measures shall also be included;
- If the Consultant requests an extension of time to the dates specified in the Contract, justification shall be provided as the Client deems it necessary. The supporting information used for justification shall include a cause-and-effect type Programme produced in P6 using recognized delay analysis method (e.g. time impact analysis) so the impact of the delay to the activities in question can be demonstrated;
- If any logic changes are required to be made to the Programme, a Change Request shall be submitted by the Consultant requesting the change and the justification for the Change;
- If any of the works necessary for the performance of the Contract is not included, this shall not relieve the Consultant of the obligation to complete all necessary work until the respective deadline of each phase or all Works, parts thereof, regardless of the Project Manager/ Client approval of the Programme or any sub - Programme.

15.3.14. All Programme submissions made by the Consultant shall be clearly titled (e.g. Baseline Programme, Monthly Programme, What-if Programme), numbered (e.g. Period 00, 01, 02, ...), revision coded (e.g. Rev 00, 01, 02, ...) and dated (DDMMYYYY).

15.4 Change Management

15.4.1. The Consultant shall inform the Client of request for changes immediately upon discovery of such need. The Consultant shall Change Request form (provided in the Contract) consisting of:

- The reason for change;
- Who is requesting the change;
- The consequences of the change, including maintenance, health and safety, time, quality, cost (and who will bear the cost);
- Proposals for mitigation of any consequences;
- The risks associated with the change;
- Alternatives to the proposed change;
- Time by which the change must be instructed.

15.4.2. The Client shall evaluate the proposal within 20 (twenty) days upon receipt of Change Request.

15.5 Reporting

15.5.1. The Consultant shall prepare monthly progress report on Services broken down by DPS and BP which shall include the following information:

- Contract Status and key achievements (including received building permits, other permits, approvals from Affected parties and authorities, etc.);
- Progress per Discipline;

- Progress per BP;
- Interface Management Report;
- Requirements Status Report;
- Risks management & Opportunities report;
- Contract and Commercial status;
- Critical Items Action Report;
- Co-Ordination Report;
- Open Items Report;
- Claims and Variations Report;
- Affected parties engagement activities including progress achieved on open/solved issues;
- Updated Detailed Programme;
- Updated Programme Change log;
- Updated Summary Programme;
- Programme Variance Report;
- Health and Safety.

15.5.2. The Consultant shall maintain a Critical Items Action Report (CIAR) which will be maintained in conjunction with the Early Warning system:

- A critical item is defined as any item that has caused or is likely to cause an impact to a Milestone or Key Date or to overall contract Completion. It should be noted that not every delay result in an impact to a key date or milestone and therefore not every delay counts as a critical item;
- The main task of the CIAR is the analysis of the Programme to determine which items are critical or potentially critical;
- The CIAR shall be reviewed at Monthly Progress Meetings to discuss corrective actions or alternatives to eliminate the programme impact of the critical items;
- The Consultant shall nominate a CIAR coordinator from within his team. The CIAR coordinator shall be responsible for development, maintenance and production of the CIAR;
- The Consultant shall define a template for CIAR;
- The Consultant shall continually identify and highlight activities in the programme that are at risk of being delayed. A list of any events causing delay or likely to cause delay is to be maintained including the proposed mitigating measures which may be performed by the Consultant for consideration by the Client.

15.5.3. The Consultant shall produce a monthly Co-ordination Report showing the Authorities and Affected Parties contacted, their feedback, actions taken, future needed actions and documents exchange between the parties. Detailed format of the report will be agreed with the Client. The dates and the scope from the report must be reflected to Primavera P6 Schedule.

15.5.4. The Consultant shall produce a monthly Open Items Report showing all the items raised on meetings, Request for Information (RFI) and Project Change Requests (PCR) submitted during the period and previous periods which have not received resolution to the date. The report shall show also all the decisions taken at working level meetings and open items from those meetings (Meeting Items). The report will be accompanied with RFI, PCR, Meeting Items and Open Items tracker which displays all the history of items raised and decisions taken. Detailed format of the report and the tracker will be agreed with the Client.

15.5.5. The Consultant shall produce a monthly Claims and Variations report showing all Claims and Variations issued since the start of the Services, actions taken, future needed actions and documents exchange between the parties.

15.5.6. The Consultant shall produce a weekly Design Progress Performance report as specified in Annex No. 19.

16 On Demand Services – DTD in BIM LOD 400

- 16.1. This part of Technical Specification, On Demand Services "DTD in BIM LoD 400", (including updated Bill of Quantities) shall be considered as the integral part of Design Services and the Technical Specification and its Annexes, particularly with the Annex No. 1 "Design Guidelines".
- 16.2. The Consultant is obliged to deliver On Demand Services in accordance with the Agreement and Technical Specification. The Consultant must submit the financial proposal with the On Demand Services "DTD in BIM LoD 400", whereas the Client, in the defined time period, may decide whether to implement in full or partly these On Demand Services.
- 16.3. After obtaining DTD approval in BIS for all BP within 4 months the Client may request to the Consultant to proceed with On Demand Services for one, several or all BP as deemed necessary. The approved DTD (including utilities and the AP infrastructure) shall be fully implemented in BIM LoD 400 in accordance with the Design Guidelines.
- 16.4. On Demand Service shall be delivered to the Client not later than 3 months from the Client's Notice requesting to proceed with the On Demand Services.
- 16.5. The review and approval process of the Client for the On Demand Services "DTD in BIM LoD 400" will be carried out as follows:
- 16.6. Administrative review. After receipt of the provided deliverable in a period of up to 10 (ten) days the Client will carry out administrative review. The aim of the administrative review is to check whether deliverable provided is complete. If submission is incomplete, Client requests resubmission of the deliverable in full scope.
- 16.7. Technical review. After receipt of a complete deliverable in a period of up to 45 (thirty five) days Client will prepare the technical review report.
- 16.8. The Client will review the Consultant's deliverable and return it with the indications „approved“, „approved with corrections“, or „returned for correction“. Two last indications shall be supported by the Client's Review Reports.

- 16.9. When any Consultant's Document commented by the Client and bear the note „returned for corrections“, the Consultant shall submit new revision in 20 (twenty) days with all the comments and discrepancies resolved. All corrections shall be consecutively numbered for the construction permit.
- 16.10. Payments will be made for every approved On Demand Service per BP as detailed in Detailed Financial Proposal.

17 List of Annexes attached to the Technical Specifications

The Consultant shall fully take into account for the purpose of completing the Services all Annexes, guidelines, studies, reports etc. developed in relation to the Rail Baltica Global project in their current version at the time of performing the Services. Main documents and Annexes listed below shall be read together with the Technical Specification. The most up to date version of the reference document shall be applied when the Agreement is signed.

ALL FURTHER LISTED ANNEXES CONTAIN LIMITED ACCESS INFORMATION INTENDED FOR FULFILING OF PROFESSIONAL DUTIES AND TASKS ONLY!

1. Please note, the document and all referable annexes (file, document folder) contain limited access information.
2. Limited access information intended for a limited number of persons for the purpose of fulfilling the assigned professional duties and tasks and disclosure or loss whereof due to the nature or content of such information impedes or could impede the functioning of RB Rail AS, related companies thereof or another institution involved in the fulfilment of the tasks of ail Baltica project or/and state administration, becomes detrimental or could become detrimental to the legitimate interests of persons.
3. Please follow the "need to know" principle in respect of handling limited information and circulation of documents of limited accessibility, i.e., limited information for work purposes is received and used only by the employee to whom it concerns.
4. Dissemination of information without the written permission of joint venture company (RB Rail AS) is not allowed.

Table 13: List of Annexes attached to the Technical Specifications

Annex Ref.	Name	Version	Date	File Codification Number
Annex No. 1	Design Guidelines	0142	2023.12.29	A_1_RBR_DG_Version_0142.zip
Annex No. 2	Operational Plan	8.0	2023.10.16	RBDN-SOD-ZZ-ZZ-DRW-R-00001
Annex No. 3	Environmental impact assessment report	-	2015.11.25	A_3_Environmental impact assessment report.zip
Annex No. 4	Opinion No.5 of the Environment State Bureau (ESB) issued on 3 May 2016, the document is available in Latvian.	-	2019.05.03	A_4_Opinion No.5.pdf
Annex No. 5	"Monitoring program for the European gauge railway line Rail Baltica impact to the mammals"	-	2018.07.05	A_5_Monitoring program RB impact mammals ENG.pdf

Annex Ref.	Name	Version	Date	File Codification Number
				A_5_Monitoringa programma RB ietekme ziditajdzivnieki LV.pdf
Annex No. 6	"Monitoring program for the European gauge railway line Rail Baltica impact to the mammals" Monitoring interim report A5 and C3 section feasibility study and specification of activity	-	2018.07.05	A_6_Monitoring program_A5_C3_feasibility_study.zip
Annex No. 7	Implementation plan of environmental impact assessment conditions for Rail Baltica project in Latvia	-	2018.05.29	A_7_EIA_plan_LV.pdf
Annex No. 8	EIA conditions implementation table	-	2018.07.02	A_8_EIA_plan_LV.xlsx
Annex No. 9	Mammal monitoring program (2021)	-	2021.03.26	A_9_RB Monitoringa programma 2021.pdf
Annex No. 10	Mammal monitoring report (2022)	-	2022.07.26	A_10_Mammal monitoring final report ENG 2022.pdf A_10_Mammal monitoring final report LV 2022.pdf
Annex No. 11	Bird monitoring program (2023)	-	2023.06.22	A_11_Rail Baltica Putnu monitoringa programma.zip
Annex No. 12	Climate change study (2019)	-	2019.02.15	A_12_Climate change study_final-report.pdf
Annex No. 13	Upeslejas EIA noise model data (2023)	-	2023.06.05	A_13_Upeslejas EIA.zip
Annex No. 14	Rail Baltica Study on Supply of Mineral Materials for Rail Baltica in Latvia.	-	2018.06.05	A_14_MinMat_Study_Report_LV.zip
Annex No. 15	Study of potential electromagnetic impact on ATM/CNS systems of the SJSC "Latvijas Gaisa Satiksme" due to the Rail Baltica railway infrastructure project and further train operations, at Riga international airport.	-	2018.01.03	A_15_Study_ATM_CNS_LGS.pdf
Annex No. 16	DSP3, DPS2 BP2.1-BP2.3 Building design in minimum composition, Building permits,	-	-	A_16_LVDS1_BP_TC.zip A_16_Regio_Station_BP_TC.zip

Annex Ref.	Name	Version	Date	File Codification Number
	Technical conditions, TC clarifications with presentations			
Annex No. 17	Railway Track alignment, structure, road WIP plan Railway Track longitudinal plan Jaunmarupe service platform	-	-	A_17_LVDS1_layout.zip A_17_Railway_longitudinal_p.zip A_17_Jaunmarupe_service_platform.zip
Annex No. 18	Additional requirements for site investigations: - geological and hydrogeological surveys - geodetic and topography survey	1.0 -	2024.01.22 -	RBDL-GEO-SPC-SI-R-00001 A_18_Add_r_SI_Geodetic_Topo.pdf
Annex No. 19	Schedule Management Plan Primavera P6 Cloud Operational Requirements Work Breakdown Structure Design Progress Performance Guidelines	4.0 3.0 2.0 1.0	2023.02.08 2023.02.08 2023.02.08 2023.04.03	RBDL-PCR-PLN-Z-00001 RBDL-PCR-QRG-Z-00001 RBDL-PCR-LST-Z-00001 RBDL-PCR-GDL-Z-00001
Annex No. 20	Requirements for Technical specification for Construction	4.0 1.0 2.0	2023.07.27 2022.12.23 2022.11.30	RBCN-RBR-SPC-R-00001 RBCN-RBR-SPC-R-00002 RBCN-RBR-BOQ-R-00001
Annex No. 21	Fence Components	4.0	2023.07.27	RBCN-RWM-SPC-R-00004
Annex No. 22	Noise Barrier Elements	4.0	2023.07.27	RBCN-RWM-SPC-R-00005

Before granting access to the above listed Annexes of the Technical Specification, the interested suppliers/the Consultant shall sign and submit a Non-Disclosure Undertaking as stipulated in the Procurement Regulation.

18 List of Annexes to be provided after the Agreement signature

The Client will provide the following relevant Annexes with the most up to date version to the Consultant for the Agreement implementation. All these Annexes will be handed over to Consultant within 15 days after the Agreement signature.

Table 14: List of Annexes to be provided after the Agreement signature

Annex Ref.	Name	Version	Date	File Codification Number	Description
Annex No. A1	Consolidated Material Supply elements	2.0	2022.03.14	RB068-PMD-LST-R-00001	Describes all infrastructure components and elements, that will be supplied in a consolidated way according to Framework agreements signed between the Suppliers, RB Rails AS and Implementing Bodies.
Annex No. A2	Health and Safety Requirements	1.0	2022.06.06	RBGL-HSD-STN-Z-00002	Describes standards that maintain high level H&S management and performance within RBGP. The Standard should serve as a tool to implement "0 accident workplace" policy.
Annex No. A3	System Engineering Management Plan	2.0	2022.08.26	RBGL-RNC-PLN_SE-O-00001	Establishes a methodology describing both technical and managerial System Engineering activities to ensure that the activities developed during design, construction/installation, System Validation, System Acceptance of the completed work are in accordance with the foreseen specifications.

Annex Ref.	Name	Version	Date	File Codification Number	Description
Annex No. A4	Requirements Management Plan	2.0	2022.08.26	RBGL-RNC-PLN_RQ-O-00001	Defines the process of how requirements will be documented, analysed, traced and prioritised throughout the lifecycle of the Project and act as the basis for more detailed plans to be developed and implemented by designers / contractors engaged on the Project.
Annex No. A5	Configuration Management Plan	2.0	2022.09.30	RBGL-RNC-PLN_CM-O-00001	Describes the strategies, process and methods that are required for the effective management of configuration / technical changes throughout the Rail Baltica Railway Project.
Annex No. A6	Design Management Plan	3.0	2022.10.07	RBGL-RNC-PLN_DN-O-00001	Describes how engineering design shall be organized and managed, and how the designs shall be checked and approved through an agreed assurance process.
Annex No. A7	Verification and Validation (V&V) Management Plan	2.0	2022.09.20	RBGL-RNC-PLN_VV-O-00001	Defines the process to be followed to verify and validate all the requirements coming, among others, from Contractual requirements and System Engineering processes.
Annex No. A8	Interface Management Plan	4.0	2022.09.08	RBGL-RNC-PLN_FC-O-00001	Describes the process of managing project technical interfaces. It details the organization, methods and tools to be implemented and used for the management of interfaces internally within Rail Baltica systems and externally with other Stakeholders, government entities and other railways.
Annex No. A9	RB RAIL Deliverables Information traceability	2.0	2022.12.20	D0007-SEA-XX-XX-INS_QA-R-00001	RB RAIL Deliverables Information traceability quality requirements for AsBo/NoBo serves as guidance to

Annex Ref.	Name	Version	Date	File Codification Number	Description
	quality requirements for AsBo/NoBo NOBO GUIDANCE FOR CONTRACTORS INTRODUCTION TO CSM-RA APPLICATION SYSTEM ASSURANCE REQUIREMENTS ON MAINLINE TRACK AND CIVIL WORKS CONTRACTOR	3.0 1.0 1.0	2022.06.27 2022.12.08 2023.10.26	RBDL-CTF-GDL-O-00001 RBDL-CTF-GDL-O-00002 RBGL-SEA-SPC-R-00001	generate quality deliverables in terms of traceability of amendments, information representation, complete answer provision etc. for further transmittal to the Conformity Assessor. NoBo guidance for contractors summarizes the more relevant texts contained in the Interoperability Directive regulatory framework. Introduction to CSM-RA application summarizes the most relevant available texts related with Commission Implementing Regulation No 402/2013, and to outline the expected tasks to be performed by the RB Rail risk management responsables. System assurance requirements defines requirements which must be followed during the DTD design and/or construction works.
Annex No. A10	MANUAL RAILWAY INFRASTRUCTURE MAINTENANCE (CIVIL WORKS, TRACK) Appendix I: FMEA and RCM matrix Appendix II: Inspection checklists	2 1 1	- - -	RBDL-SOD-ZZ-ZZ-OAM-R-00002 RBDL-SOD-ZZ-ZZ-MTX-R-00001 RBDL-SOD-ZZ-ZZ-TPL-R-00001	Describes activities which are considered necessary to carry out the maintenance works of the Rail Baltica Railway line referring to civil works and track works to maximize the system safety and its availability regarding to civil works and track works and to minimize operating costs.
Annex No. A11	Document numbering procedure Document Numbering and Master Coding	2.0 16.0 -	2023.06.13 2023.10.11 -	RBGL-DMT-PRC-Z-00001 RBGL-DMT-LST-Z-00001 RBGL-DMT-TPL-Z-00002	Establishes a clear and standardized methodology for the numbering, organization, and categorization of all

Annex Ref.	Name	Version	Date	File Codification Number	Description
	Deliverables Issue Register				documents generated throughout the Rail Baltica Global Project lifecycle.
Annex No. A12	Interface Management Register extract Interface Control Forms (ICFs) RASCI for System Engineering Activities regarding Design.	1.0 - 1.0	2023.02.15 - 2023.02.15	RBCR-PRC-LV1200-XX-REG-Z-00001 RBCR-PRC-LV1300-XX-REG-Z-00001 DS1 DPS2 Specific ICF included.zip DS1 DPS3 Specific ICF included. Zip Generic ICFs included.zip RASCI System Engineering Activities for ML.xlsx	Interface Management Register records all interfaces with their attributes and tracks progressive development. ICFs includes and/or refers to design drawings with the aim of clarifying to the other parties the interface features to achieve an appropriate degree of completeness. RASCI describes responsibilities for each entity in the development of System Engineering activities.
Annex No. A13	Rail Baltica Utility Requirements	-	2019.04.04	RBDL-TRG-SPC_RQ-00001	Describes requirements for utilities constructions, rehabilitation and re-construction in railway right-of-way and in relation to railway.
Annex No. A14	Value engineering - DPS2 - DPS3	-	-	A_A14_VE.zip	Approved deliverables of performed analysis on different technical alternatives.
Annex No. A15	Site investigations -DPS2 -DPS3	-	-	A_A15_Sl.zip	Approved deliverables of site investigations performed during Value engineering stage.
Annex No. A16	"Detailed technical study and environmental impact assessment of the Latvian section of the European gauge railway line Rail Baltica" including railway	-	-	A_A16_EIA_PD.zip	

Annex Ref.	Name	Version	Date	File Codification Number	Description
	alignment with the technical solutions of the detailed technical study or preliminary design.				
Annex No. A17	Archaeological studies of relevant areas along the planned route. Route Section 4. "Ķīvuļurga – "Jelgavas iela"	-	-	KVI_4.posms_uzsaksanas_zinojums_apsti_prinats.zip	
Annex No. A18	Draft Master Design solutions for BP3.5.; BP3.6.; and BP3.7.	1.0	2022.12.20	A_A18_MD.zip	WIP/draft solutions of MD in BP.3.5, BP3.6, BP3.7.