RAIL BALTICA MAINLINE CONSTRUCTION IN LATVIA

ENGINEERING AND CONSTRUCTION SUPERVISION SERVICES









Co-financed by the Connecting Europe Facility of the European Union



PRESENTATION OVERVIEW

- EDZL AS RAIL BALTICA PROJECT IMPLEMENTING BODY IN LATVIA
- RAIL BALTICA PROJECT GOVERNANCE MAIN STAKEHOLDERS, STRUCTURE AND FINANCING ARRANGEMENTS
- ENGINEER SERVICES PROCUREMENT PROCESS AND TENDER SCHEDULE
- ENGINEER SERVICES PROCUREMENT SCOPE
- MAIN LINE CONSTRUCTION WORKS OVERVIEW OF TASK
- CONSTRUCTION CONTRACTS OVERVIEW FIDIC, PRICING BASIS, PAYMENT PROCEDURE, BILL OF QUANTITY EXTRACT EXAMPLE
- ENGINEER WORK'S ORGANISATION EXAMPLES FROM EDZL MANAGED CONSTRUCTION OBJECT
- TECHNICAL SCOPE OVERVIEW EXAMPLE OF BRIDGE STRUCTURES, EMBANKMENT, ETC.

ABOUT WORK PROGRESS IN EDZL MANAGED CONSTRUCTION OBJECTS



Link to video: https://youtu.be/5dTccDZXYYo



PROJECT ORGANISATIONAL STRUCTURE AND FINANCING

Kaspars Vingris

Head of the Management Board



SIA EIROPAS DZELZCELA LINIJAS



Members of board:

Kaspars Vingris Tālis Laizāns

Established:

By Ministry of Transport in October 15th, 2014

Share capital EUR 4 445 400



EDZL ROLE AND RESPONSIBILITIES



1. Implementation of project by:

- Design and construction of point type objects;

- Construction of main line;

- Organization of land acquisition;

2. Establishment of infrastructure management system in cooperation with other Baltic states

3. Shareholding of Joint Venture

RAIL BALTICA: A FLAGSHIP MEGAPROJECT TO CREATE A NEW NORTH EAST EUROPEAN ECONOMIC CORRIDOR

Bremerhaven

Bremen (

Osnabrück

Köln

Amsterdam

Rotterdam (

Bruxelles

Antwerpen

Hamburg

Hannover

- EU Rail Freight Corridors: North Sea-Baltic & Baltic-Adriatic
- 1435/1520mm gauge railway crossroads
- Extensions to the Arctic Corridor & Northern Sea Route

North Sea-Baltic

Baltic-Adriatic



Rail Baltica Governance structure





PROJECT FINANCING



plan of financing object of several Agreements.



STRUCTURE OF RAIL BALTICA FINANCING

CINEA FINANCING

- The implementation of the Rail Baltica project is financed by co-funding from the European Union up to 85% of the total eligible costs and from national state Budgets Estonia, Latvia and Lithuania. EU financing is included in framework of the <u>Connecting Europe Facility (CEF)</u> funding instrument.
- Generally financing of each activity is forecasted between 81 85% for CINEA and 15% 19% for Beneficiary (State).
- Compensation, time and description of related activities to be performed are fixed at signing of each Grant Agreement signed between Beneficiary and CINEA (5 Grant Agreements signed till now).
- Each Grant Agreement is based on a project application to be prepared by Beneficiary following input of
 coordinator and Implementing bodies and evaluated by CINEA mostly on the basis of maturity of project and
 specific criteria defined in Call.



STRUCTURE OF RAIL BALTICA FINANCING

STATE FINANCING

- State contribution is included in State budget of each year and already reserved.
- VAT is financed by the state but does not impact the Budget (actually in Latvia on construction Reverse Tax VAT is applied).
- The Ministry of Transport by law is not a VAT taxable person The Ministry shall transfer VAT directly to the State budget as a non-eligible cost, VAT is fully financed from the state budget.
- The invoices are paid to the Contractor by the Beneficiary Ministry of Transport of Latvia on base of instruction received from Implementing Body (the contracting authority).





EUROPEAN YEAR OF RAIL 2021

Rail Baltica Global project need-to-knows'

Girts Bramans Head of Strategic stakeholders and Communications Rail Baltica joint venture RB Rail AS



.



870 km greenfield railway infrastructure 1435 mm Double track Ē ERTMS Level 2 + FRMCS* Electrified 2x25kV AC Maximum length of freight trains: 1050m $\overline{\mathbf{x}}$ Axle load 25t Design speed: _₿ 249 km/h for passenger trains 120 km/h for freight trains SE-C (Swedish) loading gauge

* Subject to confirmation

Rail Baltica Procurement Types



Contracting authority: RB Rail AS

- Global project studies
- Design of main line
- Common Standards
- Commercialisation
- Marketing & Branding

Contracting authority: RB Rail AS on behalf of BENs

- Sub-systems (CCS&ENE)
- Consolidated procurements of Raw Materials and Key Components
- Cross-border Mainline Sections



Contracting authority: National implementing bodies

- Mainline Construction
- Major Engineering Structures
- Local Facilities (including terminals)



Rail Baltica Procurement Governance

Rail Baltica



www.railbaltica.org



| 5 1 | PROCUREMENT FOR EXPERTS | |
|-------------------------|--|------------------------------|
| ifc itl na ose | Ongoing Tenders RB Rail Tender Archive Procurement Plan 2021 Contracting Authorities Fair and transparent project implementation Procurement Regulation & Supplier Qualification Apply for Procurement News E-Procurement System General terms of agreement Pd tenders of KB KAIL AS, g | www.railbaltica.org/tenders/ |

| RB Rail AS | | | | | | |
|-----------------------|---|------------|------------|--------------------|----------|--|
| Procurement ID No. | Title | Announced | Updated | Submission Date | Language | |
| | Invitation to consultation with interested suppliers for procurement procedure "Rail Baltica mainline construction in Latvia" | | | | | |
| RBR 2021/21 | Global Project Cost Benefit Analysis (CBA) and Long Term Business Plan | 26.08.2021 | 26.08.2021 | 30.09.2021 | | |
| RBR 2021/18 | Data center services | 11.08.2021 | 26.08.2021 | 07.09.2021 | = | |
| RBR 2021/16 | Railways tunnels expert services | 11.08.2021 | 02.09.2021 | 02.09.2021 | | |
| RBR 2021/15 | Competitive procedure with negotiations "Consolidated supply of rails for Rail Baltica railway construction" | 09.08.2021 | 01.09.2021 | 23.09.2021 | | |



Updates on Project progress and plans, incl.:

- Ensuring Safety and Interoperability in Rail Baltica
- Raiway system (ENE&CCS) development
 - Consolidated construction material procurements

https://forum.railbaltica.org/2021

BIM requirements

9) EN-



This is the official website of the Rail Baltica Global Project

ABOUT RAIL BALTICA BENEFITS NEWS & EVENTS PROJECT IMPLEMENTERS PROCUREMENT

Search.

RB Rail's BIM documentation

RB Rail AS is currently working towards implementing the BIM Strategy for the Rail Baltica Global Project. The information on the page will be updated regularly to keep you up to date as the project progresses.

DOCUMENTS



Detailed BIM Strategy

A general document that describes the BIM approach for Rall Baltica Global Project. This document sets out a detailed strategy framework for implementing Building Information Management (BIM) on the Rail Baltica Projects. It outlines the strategic BIM goals, define, processes, standards and protocols for the capture, coordination,

nent and delivery of digital information throughout the lifecycle of design, construction and operation s being delivered.

This document is a part of Design Guidelines.

Download the file here



BIM Manual (v.18-04-2019)

This document and its supporting ecosystem of documents, forms and templates describe and provide the BIM Strategic processes and workflows to be followed by both Rail Baltica and the Supply Chain during the Lifecycle of the projects, being this ecosystem a live documentation that will evolve during the filecycle of the Rail Baltica

BIM program to capture technological and methodology advancements.

The BIM Manual documentation should be used for all the project phases. Primarily it focuses on the design process and we are continuing to improve it.

This document will be a part of Design Guidelines.

Download the file here

Building Information Management (BIM) Employer's Information Requirements v2.1

Interpretation Building Information Management (BIM) Employer's Information

This document sets the requirements according to which the supply chain shall work with BIM systems in order to deliver information to Client – RB Rail or National Implementing Bodies.

his document is a part of Design Guidelines.

Download the file here



CAD Standards

These standards apply to all drawings (sketches, preliminary, detailed design, construction, shop drawings and abuilt drawings) and CAD Data (2D or 3D) produced The intent of these CAD standards is to provide guidelines to ensure that all drawings are prepared to a standard and uniform appearance and reflect high quality workmanship, and that data created by CAD systems is correctly structured and

classified to facilitate reuse and understanding by others. This document is not related to any particular Authoring Tool and it will be each Supplier who develops a specific practical standardization for the Authoring Tool to be used in their project, taking as a base this documentation.

his document will be a part of Design Guidelines.

Download the file here



BEP Template



This BIM Execution Pland (BEP) template has been elaborated to be used as the basis for the post-contract BEP. It has to be prepares as a direct response to the BIM EIR and Technical Specifications. The Supplier shall fulfill all the required information in order to show their intention to comply with all the standards and procedures described in the

BIM Manual. The Supplier is free to add extra information.

This document is a part of Design Guidelines.

Download the file here



www.railbaltica.org/rb-rail-as-bim-documentation/

Construction stage

Native BIM model with attribute data -> IFC -> Asset Register





RAIL BALTICA MAINLINE CONSTRUCTION IN LATVIA ENGINEERING AND CONSTRUCTION SUPERVISION SERVICES PROCUREMENT

Einārs Jaunzems

Head of Project implementing department



EXPECTED STRUCTURE OF PROCUREMENT PROCEDURE

The procurement procedure will be organised in accordance with the regulatory enactments of the Republic of Latvia EU procurement regulation and Latvian Procurement law.

Procurement commission will choose between most common procedures (in past generally competitive procedure with negotiation according to the Article 8, Paragraph Six, Point 3 of the Public Procurement Law).

The procedure consists of two stages:

- The first stage selection of candidates;
- The second stage evaluation of the bids submitted by candidates which will be invited to submit an initial bid and award of rights to conclude a contract.

The second stage may include negotiations that may be relevant to be undertaken as specified by the Contracting Authority. The procurement commission shall be entitled to make a decision not to organise negotiations and award the contract on the basis of the initial bids submitted by the tenderers.

CONTRACT WILL BE AWARDED FOR TOTAL AMOUNT: COMMITTED AND CONDITIONAL PHASE EMPLOYER WILL CONFIRM CONDITIONAL PHASES AS FINANCING, DESIGN AND LAND WILL BE AVAILABLE

1st phase



Qualification

2nd phase



Submission of proposals and negotiation

21



PROCUREMENT TARGET TIME SCHEDULE



First phase – Qualification of candidates

Second phase – preparation and evaluation of technical and financial offers



TO BE PROVIDED BY EMPLOYER BEFOR START CONSTRUCTION WORKS IN CONSTRUCTION SECTION

Land Acquisition

May take up to 2 years depending on the acquisition process and ownership at starting of the procedure (State, Municipality or Private), thus difficult to predict precisely when land in a specific section would be available to start construction.

The procedure has started but calendar of availability of land will be known second half of 2022.

Approved detailed technical design

RB Rail AS is the contracting Authority for the Design of the main line, all contracts are signed and most of the sections are in between Value Engineering Phase and Master Design phase, due to the complexity of Latvian construction law, the high number of stakeholders and a number of Building permit sections in which mainline design is divided is difficult predict precisely when land in a specific section would be available to start construction.

In despite design works are progressing in every section precise and final calendar of delivery of approved Detailed Technical design will be available second half of 2022.



TO BE PROVIDED BY EMPLOYER BEFOR START CONSTRUCTION WORKS IN CONSTRUCTION SECTION

Project funding

It is expected, that project funding will be available in stages, and the contract conditions will be developed to suit this approach using principle of committed and conditional amount of contract Taking in consideration that beneficiaries can commit for an amount only when funding is secured making sure at each stage that works will be ordered only if full finance will be available





TASK OF ENGINEER AND MAIN LINE CONSTRUCTION WORKS CONTRACT CONDITIONS

Andrea Laudanna

Chief Engineer

EDZL TASK OF ENGINEER SERVICES CONTRACTOR

- 1. To perform FDIC Red book (2017 edition 2) Engineer services according FIDIC white book (2017 edition 5) contract conditions and contract administration works
 - Engineer will be entrusted of full contract administration process on behalf of the Employer;
 - Verification of eligibility criteria under Financing regulation;
 - Supervision and full Employer representation during works, relation with main stakeholders;
 - Conformity to Latvian Procurement Law;
- 2. To perform supervision services according construction regulation of Latvia:
 - Rail Baltica construction works III group of construction objects (out of III) with the strictest requirements for construction safety and construction works supervision;
 - Design for III group objects must be expertised, also any changes during construction works must be expertised; (expertise will be ensured by separate party)
 - Control over construction/supervision works is done by two main institutions:
 - Būvniecības valsts kontroles birojs BVKB certification of construction and supervision specialists and also recognition of professional qualifications of foreign specialists;
 - Valsts dzelzceļa tehniskā inspekcija VDZTI construction controlling institution for railway construction, issuer of Building permits, issuer of BUN (acceptance to start construction works), institution to sign final act of completion of construction works;



WORK PHASES

| PHASE | HUMAN RESOURCES INVOLVED | ESTIMATE PERIOD FROM SIGNING OF AGREEMENT | OBJECTIVES AND RESPONSIBILITY | COMMITTEMENT |
|---------------------------|---|---|--|------------------------------------|
| MOBILIZATION GENERAL | MAIN CONTRACTOR ENGINEER AUTHOR SUPERVISOR MAIN TEAM | 3 MONTH | MOBILIZE AND CERTIFY ALL PERSONNEL | COMMITTED PHASE |
| ECI GENERAL | MAIN CONTRACTOR ENGINEER AUTHOR SUPERVISOR MAIN TEAM | 6-9 MONTH | COORDINATE ALL GENERAL PROJECT MANAGEMENT DOCUMENTATION AND GENERAL ECI REPORTS | COMMITTED PHASE |
| ECI SPECIFIC BP | MAIN CONTRACTOR ENGINEER AUTHOR SUPERVISOR MAIN TEAM | 6 - 36 MONTH | ANALISYS OF CONSTRUCTABILITY , STABILITY AND VALUE ENG FOR EACH BOP | COMMITTED PHASE |
| GENERAL MANAGEMENT | MAIN CONTRACTOR ENGINEER AUTHOR SUPERVISOR MAIN TEAM | TILL DELIVERY OF LAST SECTION OF WORKS | CONTRACT ADMINISTRATION AND GENERAL MANAGEMENT FIDIC , QS ,QA , SK, ETC | COMMITTED AND CONDITIONAL PHASE |
| REGIONAL MANAGEMENT | ENGINEER AND BP TEAM • ASMAIN CONTRACTOR • ENGINEER REGIONA TEAM | AFTER EMPLOYER NOTIFICATION OF STARTING WORK IN BUIDING PERMIT LOCATED IN ONE OR OTHER REGION TILL DELIVERY OF LAST BP IN ONE REGION | INSURE COORDINATE EXECUTION OF WORKS IN SEVERAL BP UNDER SAME REGION | COMMITTED AND CONDITIONAL PHASE |
| SPECIFIC BP MANAGEMENT | MAIN CONTRACTOR ENGINEER AUTHOR SUPERVISOR BP DEDICACTED TEAM | BEFOR STARTING OF WORKS TILL DELIVERY OF BP | MANAGE AND SUPERVISE WORKS IN EACH BP | COMMITTED AND CONDITIONAL PHASE |



REMUNERATION BY WORK PHASE

• Planned remuneration mechanism will be based on principle to reduce coefficient of risk for the parties and limit the expenses of what really necessary for perform the task

| PHASE | CONTRACTOR | ENGINEER | ACHIEVEMENT | COMMENTS |
|---------------------------|--------------------------------------|--|--|--|
| MOBILIZATION GENERAL | ON ACHIEVEMENT OF MOBIIZATION | ON ACHIEVEMENT OF MOBIIZATION | MOBILIZE AND CERTIFY ALL PERSONNEL | FOR BOTH WILL BE REQUESTED OBTENTION OF WORKING PERMISSION AND LIVING PERMIT |
| ECI GENERAL | ON DELIVERABLE BASE | ON MONTHLY BASE | APPROVAL BY ENGINEER AND IN SAME CASE EMPLOYER | |
| ECI SPECIFIC BP | ON DELIVERABLE BASE | ON APPROVAL OF DELIVERABLE / MONTHLY BASE | APPROVAL BY ENGINEER AND IN SAME CASE EMPLOYER | |
| GENERAL MANAGEMENT | ON MONTHLY BASE | ON MONTHLY BASE | | |
| REGIONAL MANAGEMENT | ON MONTHLY BASE FOR REGIONAL TEAM | ON MONTHLY BASE FOR REGIONAL TEAM | INSURE COORDINATED EXECUTION OF WORKS IN SEVERAL BP UNDER SAME REGION | COMMITTED AND CONDITIONAL PHASE |
| SPECIFIC BP MANAGEMENT | OVERHEAD COEFF | ON MONTHLY BASE FOR BP TEAM | MANAGE AND SUPERVISE WORKS IN EACH BP | COMMITTED AND CONDITIONAL PHASE |

EDZL CONSTRUCTION WORKS CONTRACTUAL PRINCIPLES

Contract administration will be based on the application of Latvian Construction and Procurement law with fairness, equilibrium, and independence.

Contract will be structured on principle of Phasing of Works:

- Accepted Contract Amount awarded amount (for example 50 MEUR);
- Committed Contract Amount committed amount at starting of works (for example 5 MEUR) the part of the accepted contract amount that is committed at the signing of Contract or step by step activated at confirmation of the availability of funds;
- Accepted contract amount will reflect offer of the bidder for performing all works subject of the contract;
- On the basis of availability of funds, approved Detailed Technical Design, and availability of Land, Contracting authority and Beneficiary will commit in compensating works in specifically defined 6 months in advance section with a contractual obligation to warrantee a regular wealthy and financially sustainable progress of work for Contractor.



RESOURCES TO BE MOBILISED AND MAIN STAKEHOLDERS

Resources to be mobilised

- Management with experience of similar type of big scale linear construction contract;
- Experts in FIDIC contract administration and QS;
- · Local legal experts with experience in construction and public procurement;
- · Expert in design review of railway object, bridge, utility's;
- · Local certified or (foreign to be certified) Technical site supervisor;
- Environmental, safety, LEAN management expert;

Main Project Legal stakeholders

- **Author supervisor:** will perform Author Supervision during the Construction as defined by Latvian construction law;
- **Public stakeholders:** municipalities, utility owners, state forest, etc.;
- **NoBo:** Independent party for verification of application TSI requirements. Contracted to CERTIFIER S.A.;
- **AsBo:** Independent party appointed to assess the application of the hazard management safety risk process applied during a project. Contracted to CERTIFIER S.A.
- **RB Rail AS:** coordinator and manager of design, etc.;



PRINCIPLES OF EARLY CONTRACTOR INVOLVEMENT

The Construction Contractor planned to engage in an early cycle of the project while detailed engineering and land acquisition process is ongoing.

Contract delivery is divided into 2 phases both remunerated:

- 1. Planning: Constructability, Execution Plans, and Detailed Scheduling of the Works
- 2. Execution: Preform the Work to the Plans developed in Phase 1

Deliverables for Phase 1 - Planning:

- Prepare Level 3 In-depth Construction Driven Schedule
- Prepare Detail Construction Organization
- Perform Constructability reviews based upon the status of Engineering
- Prepare in Depth Logistics Management Plan complete with Warehousing and Laydown areas
- Prepare Temporary facilities/utilities plan, including identification of proposed work bases, parking craft areas and land requirements
- IMF facility development



PRINCIPLES OF EARLY CONTRACTOR INVOLVEMENT

- Review and input to building permits to ensure they comply with proposed construction methodology;
- Partial handover approach and how to allow other contractors to access the site prior to completion;
- Stakeholder and PR management plan, including how they will keep stakeholders informed, hotlines for the public to call to report issues, community engagement during construction etc.;
- Bill of Quantity review report;
- Solution on carbon impact greener methods of execution, etc.



TECHNICAL SPECIFICATION EXAMPLE



CONSTRUCTION DESIGN OF RAIL BALTICA'S Co-financed by the European Uni AIRPORT RIGA RAILWAY STATION, RELATED Connecting Europe Facility

NERASTRUCTURE AND VIADUCT

REINFORCEMENTS BR.5

DEFINITION

Steel reinforcing for cast in situ concrete

DESCRIPTION

Steel reinforcing for cast in situ concrete for concrete structure such as foundations, piers, abutment and walls, slabs, beams and where defined in structural detailed drawings:

This section has to be read in conjunction to the previous specification "Cast in situ concrete", the following specification "Formworks" and Structural drawings.

MATERIAL

STEEL REINFORFING FOR CAST IN SITU CONCRETE

The steel reinforcing S500 for cast in situ concrete is characterized by the following nominal values of the characteristic yield and breaking stresses that have to be used in the calculations:

| Features | Requirments | Fractile (%) |
|--|---------------------|--------------|
| Characteristic yield stress fyk | ≥ f _{ynom} | 5.0 |
| Characteristic breaking stress ft _k | ≥ f _{tnom} | 5.0 |
| $(f_{1}/f_{y})_{k}$ | ≥1.15 | 10.0 |
| | <1.35 | |
| (f _t /f _{ynom) k} | ≤1.25 | 10.0 |
| Elongation (A _{gt}) _k : | ≥7.50% | 10.0 |
| Spindle Diameter for bending tests to 90° and | | |
| following straightening without cracks: | | |
| Φ<12 mm | 4Φ | |
| 12≤ Φ≤16 mm | 5Φ | |
| 16≤ Φ≤25 mm | 8Φ | |
| 25≤ Φ≤40 mm | 10 Φ | |

ELECTRO-WELDED MESHES AND TRAILERS The steel of the welded mesh and lattice girders must be weldable.

The spacing of the bars must not exceed 330 mm.

The trusses are reticular components composed of bars and assembled by welding: For meshes and lattice made of S500 steel, the basic elements must have a diameter Ø that respects the limitation:

 $6 \text{ mm} \le \emptyset \le 16 \text{ mm}.$ The ratio between the diameters of the mesh components and lattice bars must be: $\emptyset \min / \emptyset Max \ge 0.6$



DEFINITION DESCRIPTION MATERIAL **APPLICABLE REGULATIONS:** MATERIAL'S CHARACTERISTICS AND CONDITION OF SUPPLY **EXECUTION PROCEDURES CERTIFICATIONS, SAMPLES** AND TESTS **QUALITY ASSESSMENT -**ACCEPTANCE CRITERIA MEASUREMENT CRITERIA

EDZL BILL OF QUANTITY EXAMPLE FOLLOWING LATVIAN STANDARD LBN 501-17

| | | Vienība cena / Unit pricing | | | | | | | | | Kopējā cena / Total pricing | | | | | |
|---|--|--|--------------------------------|------------------------------------|---------------------------------|---|--|------------------------|---------------------------------|----------------------|----------------------------------|--|---------------------|--------------------------------|-------------------|---|
| Izmaksu pozīcija / Cost position | Specifik. Nr / Specs No. | r Title of work | Rasējuma Nr. / Drawings No. | Mērvienība / Unit of measure | Darba daudzums / Quantity | Laika norma (c/h) / Time norm (m/h) | Darba samaksas likme* (euro/h) / Hourly rate* (euro/h) | Darba alga / Salary | Būvizstrādājum i / Materials | Mehānismi / Tools | Kopā / Total unit rate (euro) | Darbietilpība (c/h) / Total work (m/h) | Darba alga / Salary | Būvizstrādājumi / Materials | Mehānismi / Tools | Kopējā izmaksa EUR / Total in EUR |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 5 | DZELZCEĻA SLIEŽU CEĻI, ZEMES KLĀTNE, GARENPROFILI UN ŠĶĒRSPROFILI, ŪDENSNOVADE / RAILWAY TRACKS, ROADBED, LONGITUDINAL PROFILES AND CROSS SECTIONS, DRAINAGE | | | | | | | | | | | | - | | Kopā / Total | - € |
| 5.1. | Dzelzceļa u | uzbērums / Railway embankment | | | | | | | | | | | | | | |
| 5.1.1 | | Earthworks | | N/A | | | | | | | | | | | | |
| 5.1.1.1 | EM-01, EM- 02 | Top soil removing, thickness 0.3m | SC-25, SC-29 / SC-48 | m ³ | 39,998.70 | | | | | | | - € | - € | - € | - € | - € |
| 5.1.1.2 | EM-01, EM- 02 | Excavation under top soil (included service road, fence, ditches,) plus transportation and storage | SC-25, SC-29 / SC-48 | m ³ | 82,002.70 | | | | | | | - € | - € | - € | - € | - € |
| 5.1.2 | | Embankments | | N/A | 1 | | | | | | | | | | | |
| 5.1.2.1 | EM-01, EM- 02 | Compaction of subgrade (foundation of embankment) after removing topsoil | SC-25, SC-29 / SC-48 | m² | 133,093.60 | | | | | | | - € | - € | - € | - € | - € |
| 5.1.2.2 | EM-01, EM- 04 | Non-woven geotextile, CBR > 3.0 kN, T > 10/10kN/m | SC-25, SC-29 / SC-48 | m² | 141,287.40 | | | | | | | - € | - € | - € | - € | - € |
| 5.1.2.3 | EM-01, EM- 03 | Base of foundation - granular crushed filling, fr.0/63mm, thickness 0.7m, compaction roller, 1 layer max. 0.3m | SC-25, SC-29 / SC-48 | m³ | 90,095.60 | | | | | | | - € | - € | - € | - € | - € |
| 5.1.2.4 | EM-01, EM- 02 | Replacement of excavated peat - granular filling | SC-25, SC-29 / SC-48 | m ³ | 18,444.40 | | | | | | | - € | - € | - € | - € | - € |
| 5.1.2.5 | EM-01, EM- 03 | Embankment - filling material + compaction | SC-25, SC-29 / SC-48 | m ³ | 358,569.90 | | | | | | | - € | - € | - € | - € | - e |
| 5.1.2.6 | EM-01, EM- 03 | Prepared subgrade, thickness 50cm | SC-25, SC-29 / SC-48 | m ³ | 25,158.70 | | | | | | | - € | - € | - € | - € | - € |
| 5.1.2.7 | EM-01, EM- 03 | Sub-ballast, thickness 32cm | SC-25, SC-29 / SC-48 | m ³ | 14,865.90 | | | | | | | - € | - € | - € | - € | - € |
| 5.1.2.8 | EM-01, EM- 03 | Protecting layer | SC-25, SC-29 / SC-48 | m ³ | 4,238.80 | | | | | | | - € | - € | - € | - e | - € |
| 5.1.2.9 | EM-05 | Final treatment of embankments to its required slopes | SC-25, TS-L-01, TS-L-02 | m² | 42,284.60 | | | | | | | - € | - € | - € | - € | - € |
| 5.1.2.10 | EM-05 | Sowing of agricoltural land or slopes with grassing hydro-seeding | m2 | 42,633.00 | | | | | | | - € | - € | - € | - e | - e | |
| 5.1.2.11 | EM-05 | Supply and planting of shrubs | | each | 1,697.00 | | | | | | 1 | - € | - € | - € | - € | - € |

KOPĀ / TOTAL =

Virsizdevumi / Overhead cost =

Peļņa / Profit =

KOPĀ BEZ PVN / TOTAL WITHOUT VAT =

Unit Pricing – the unit price that will be filled by bidder following above split as for requirement of Latvian construction and procurement law



MAIN LINE CONSTRUCTION WORKS OVERVIEW OF THE TASK

Einārs Jaunzems

Head of Project Implementation Department



MAINLINE CHARACTERISTICS IN LATVIA

Mainline total length

- Railway bridge
- Road overpass
- Animal passage
- Construction of Regional station (optional)
- IMF (optional)
- Prepared subgrade
- Embankments
- Cutting
- Sub-ballast
- Ballast construction
- Rail instalation works
- Concrete

9 12 2 4 Millions m³; 12 Millions m³; 2 Millions m³; 1 Millions m³; 1 Millions m³; 71 000 t; (consolidated procurement of materials done by RBR) 263 000 m³;

255 km

60

85

Mainline construction does not include construction works in Riga city.





CONSTRUCTION WORKS IN SECTIONS WILL BE ORGANIZED BY BUILDING PERMITS



LVDS4 - Misa-LV/LT border Main parameters

- 45 km long
- 4 railway bridges
- 16 road viaducts
- 1 animal crossing
- 4 railway viaducts

| DESIGN SECTION | SECTION TOTAL BUILDING PERMITS |
|--|-----------------------------------|
| LVDS1 - Upeslejas-Rīga-Misa (56 km) | 20 |
| LVDS2 - Vangaži – Salaspils – Misa (67 km) | 31 |
| LVDS3 – EE/LV border - Vangaži (94 km) | 14 |
| LVDS4 - Misa-LV/LT border (45 km) | 11 |
| TOTAL | 76 |



Rida

LVDS4-DP2

LVDS4-DP3

DS4-DP1

VDS4-DP1

Bauska LVDS4-DP4

LVDS4-DP3

LVDS4-DPS

ithuania

CONSTRUCTION WORKS IN SECTIONS WILL BE ORGANIZED BY BUILDING PERMITS



LVDS4 - Misa-LV/LT border

- BP 1 / 4-1 Mainline lecavas Passing Loop (147+000 152+000)
- BP 2 / 4-1 LDZ Railway Crossing section (152+000 156+000)
- BP 3 / 4-1 lecava RB Station section (156+000 157+000)
- BP 4 / 4-2 lecava River Bridge section (157+000 158+000)
- BP 5 / 4-1 lecava South Section (158+000 165+665)
- BP 6 / 4-3 Bauska North section (165+665 176+300)
- BP 7 / 4-4 Memele River Bridge section (176+300 177+600)
- BP 8 / 4-3 Bauska Station section (177+600 182+000)
- BP 9 / 4-3 Bauska South section (182+000 188+600)
- BP 10 / 4-5 Ceraukste section (188+600 190+000)
- BP 11 / 4-5 Lithuanian border section (190+000 192+134)

EXAMPLE OF CONSTRUCTION SECTION EDZL FROM RIX TO OLAINE MUNICIPALITY BORDER (DESIGN SECTION LVDS1 DSP3)



Section length – 24,67 km; Building permits – 7; Regional stations – 3; Railway bridges/viaducts – 7; Pergola crossing – 1; Overpass road – 9; Underpass road – 1; Ecoducts – 3;



EDZL ENGINEER REPORT EXAPLES FROM EDZL MANAGED **CONSTRUCTION OBJECT**

TABLE OF CONTENTS





MONTHLY REPORT

MONTHLY REPORT EGIS-DB AUGUST 2021

17 September 2021



| 1 - CONFIDENTIALITY AND DISTRIBUTION | |
|--|-----|
| 1.1 - Monthly report Data: | 7 |
| 2 - ABBREVIATIONS AND DEFINITONS | |
| 3 - ENGINEER MONTHLY REPORT INTRODUCTION 10 | |
| 3.1 - Key events, August 2021 | 0 |
| 3.2 - List of Concerns | 0 (|
| 4 - ENGINEER'S CONTRACT EXECUTION | |
| 4.1 - Financial statement | 1 |
| 4.1.1 - Engineer Payment and Invoicing Status | 1 |
| 4.1.2 - Engineer Summary Cashflow Forecast - YR 2020 and 2021 | 1 |
| 4.2 - EGIS-DB Key Staff & Organisation chart | 1 |
| 5 - MONTHLY CONTRACT BALANCE ESTIMATION + FINANCIAL DATA CONSOLIDATION STATUS | |
| 5.1 - Contractor's Variations Order, Claims & Issues | 2 |
| 5.2 - IPC Monthly Statement | 5 |
| 5.3 - Contract Balance Estimation | 7 |
| 5.3.1 - Construction contract detailed | 7 |
| 5.3.2 - Contract Amounts, Contract Price, Forecast and Financing | 8 |
| 5.3.3 - VO, Issues & Contingencies | 9 |
| 5.3.4 - Final Cost Forecast | 4 |
| 5.3.5 - Variations and Claims | 5 |
| 5.3.6 - Contractual Issues and Contingencies | 7 |
| 5.3.7 - Escalation per Sub-Clause 13.8 | 8 |
| 5.3.8 - General Design Progress | 9 |
| 6 - MONTHLY WORK COMPLETION TIME ASSESSMENT | |
| 6.1 - Design status - Master & Preliminary Design | 1 |
| 6.1.1 - Master Design production detailed [Completed] | 1 |
| 6.1.2 - Preliminary Design production detailed [Completed] 3 | 1 |
| 6.2 - Design status - Detailed Technical Design BP4 | 2 |
| 6.2.1 - Detailed Technical Design BP4 production | 2 |
| 6.3 - Design status - Detailed Technical Design BP5 | 2 |
| 6.3.1 - Detailed Technical Design BP5 production | 2 |
| 6.4 - Design status - Detailed Technical Design BP3 | 2 |
| 6.4.1 - Detailed Technical Design BP3 production | 2 |

| 6.5 - Design status - Detailed Technical Design BP1 | 3 | 8.3.1 - Incident Report |
|--|-----|---|
| 6.5.1 - Detailed Technical Design BP1 production | 3 | 8.3.2 - Assessment of incidents and their potential impact on the project |
| 6.6 - Design status - Detailed Technical Design BP6 | 3 | 8.3.3 - Safety Meetings |
| 6.6.1 - Detailed Technical Design BP6 production | 3 | |
| 6.7 - Design status - Detailed Technical Design BP2 | 34 | 9 - MONTHLY ASSESSMENT OF THE INVOLVEMENT OF STAKEHOLDERS IN PROJECT ACTIVITIES. |
| 6.7.1 - Detailed Technical Design BP2 production | 34 | 9.1 - RB Rail AS |
| 6.8 - Design status - Detailed Technical Design BP7 – BP8 | 34 | 9.1.1 - Safety and TSI compliance assessment strategy |
| 6.8.1 - Detailed Technical Design BP7 – BP8 production | 34 | 9.1.2 - Commissioning Approach and Safety Strategy |
| 6.9 - Programme for Design and Construction works (Rev6) | 34 | 9.1.2.1 - Towards RB RAIL AS: |
| 6.10 - Construction Works BP4 | 34 | 9.1.3 - 1435 OCL foundations |
| 6.11 - Construction Works BP5 | 3! | |
| 6.12 - BIM | 3(| IU - SITE PICTURES |
| 6.12.1 - BIM model status | 36 | 11 - APPENDIXES |
| 6.12.1.1 - General progress update | .36 | |
| 6.12.1.2 - Model administration | .36 | |
| 6.12.1.3 - BIM meetings | .36 | |
| 6.13 - Interface Management: Contractor's Interface Management activities status | 37 | |
| 6.13.1 - Interfaces Identified | 37 | |
| 6.13.2 - Interfaces solved and verified in the Design | 37 | |
| 6.14 - Engineer's Activities August 2021 | 38 | |
| 6.14.1 - Minutes of meetings | 38 | |
| 6.14.2 - List of main correspondence Contractor / Engineer | 38 | |
| 6.14.3 - Construction phase | 38 | |
| 7 - MONTHLY QUALITY CONTROL ASSESSMENT | | |
| 7.1 - Purpose of the Monthly Quality Control Assessment | 39 | |
| 7.2 - Quality Control Assessment | 39 | |
| 7.2.1 - Overall Summary of Submittals | 44 | |
| 72.1.1 - Building Permit 4 | .44 | |
| 72.12 - Building Permit 5 | .45 | |
| 7.1 - Non-conformance Report | 45 | |
| 7.2 - Construction Quality Documentation | 45 | |
| 7.3 - Reckli Mock-up for façade surfaces | 45 | |
| 7.4 - Factory Acceptance Test (FAT) for the Signalling Software (EBI Lock 950) | 46 | |
| 7.5 - Commissioning Procedures & Activities on Signaling | 47 | |
| 8 - MONTHLY SAFETY CONTROL ASSESSMENT | | |
| 8.1 - Safety Control Assessment | 48 | |
| 8.2 - Covid-19 Control Plan | 49 | |
| 0.2 - Collective Republics and USE Statistics | 40 | |
| io.5 - Safety meetings, renarcies and rise statistics | 40 | |

52

52

... 53

. 55 . 59



EXAMPLE OF SAFETY REPORT

8.3.2 - Assessment of incidents and their potential impact on the project

| | Date | Type | Severity | Description | Injury Type | Body part | Mechanism | Agency Source | Type Of Personnel | Incident Closed | # Lost Days | # Restricted Workdays | Last Day Of Temporary Incapacity | RCA Job Factors |
|---|------------|--------------------|------------|--|----------------|--------------|-----------|-------------------------------|----------------------|--------------------|-------------|--------------------------|--|--|
| 1 | 25/11/2020 | Near-miss | 1.Minor | Trimmers of trees occupied the side walk and partially the road without creating proper deviation for pedestrians and traffic signs for vehicles. | .N/A | N/A | N/A | Tree Cutting | Subcontractor | Yes | 1 | 0 | N/A | 4.4 Monitoring of construction not effective |
| 2 | 15/02/2021 | Material damage | | The existing water pipe has been broken during manoeuvre from the excavator operator. | N/A | N/A | N/A | Trench or excavation | Subcontractor | Yes | 0 | 0 | N/A | 4.5 Assessment of operational readiness not effective |
| 3 | 25/03/2021 | Near-miss | 2.Moderate | The Excavator was performing the excavation to install an manhole next to overhead contact line (OCL) pole n°51a. The deviation on the verticality of OCL pole was detected | .N/A | N/A | N/A | Trench or excavation | Own personnel | Yes | 0 | 0 | N/A | 4.7 Design risk analysis not effective |
| 4 | 09/04/2021 | Near-miss | 2.Moderate | A mini excavator that was backfilling the pit (marhole) got a maifunction of one of the crawlers and was immobilized for 15 minutes, on the railway. | .N/A | N/A | N/A | Vehicle / mobile equipment | Subcontractor | Yes | 0 | 0 | N/A | 8.0 Standards/Practices/Procedures |
| 5 | 20/04/2021 | Material damage | | The mini excavator that was backfilling the pit (marhole), at the very end of the work, did not saw the existent power uppyly for the tack switch next to the 3dr alia and were cove the electrical panel with the mini excavator and have damaged it. | N/A | N/A | N/A | Vehicle / mobile equipment | Subcontractor | Yes | 0 | 0 | N/A | 4.4 Monitoring of construction not effective |
| 6 | 03/06/2021 | Material damage | 2.Moderate | The escavator was not with sufficient boom to push the sheet piles so it was decide to do it with the mobile crane. | N/A | N/A | N/A | Vehicle / mobile equipment | Subcontractor | Yes | 0 | 0 | N/A | 4.4 Monitoring of construction not effective |
| 7 | 18/06/2021 | Near-miss | 3.Serious | Subcontacts that they activity and the periodic statistical estimation of the periodic base of the statistical estimation estimation of the statistical estimation estimation estimation estimation estimation estimation estimation estimation estimation estimatis estimation estimation estimation estimation e | NA | N/A | N/A | Site Mobilization | Subcontractor | Yes | 1 | • | N/A | 80 Standards/Practices/Procedures |

| Items | Numbers |
|---------------------------|---------|
| Site safety walkabouts | 38 |
| Incident report | 9 |
| Safety Toolbox Talks | 257 |
| Workers safety Inductions | 1013 |
| Equipment Inspection | 63 |
| LSR Breached | 8 |
| Worked Hours with DAFWC | 199.610 |

8 - MONTHLY SAFETY CONTROL ASSESSMENT

8.1 - Safety Control Assessment

The Contractor reports during the Weekly Construction Meeting every Thursday to the Engineer. The Contractor and the Engineer provide Site safety inspection/ meeting every Friday. There is Site safety inspection from the Engineer's side every day.

8.2 - Covid-19 Control Plan

Impacts to the construction activities have been so far successfully prevented and controlled with the implementation of additional safety measures and increasing the areas of the site facilities, creating "bubbles" to keep workers in separate groups, limiting the contacts and the risk of spreading the infection to all the construction teams.

8.3 - Safety meetings, Penalties and HSE Statistics



EXAMPLE OF FINANCIAL REPORTING

Financial report of Partnerships BERERIX

August 2021



Document Information

GENERAL INFORMATION

| EUROS .08.2021 |
|-------------------|
| .08.2021 |
| 07 2021 |
| .07.2021 |
| |
| |
| |
| |
| |
| |
| min |
| max |
| |
| min |
| max |
| |
| min |
| max |
| "min" |
| "max" |
| min |
| avg |
| max |
| *) avg: |
| |
| Jan-21 |
| Jul-21 |
| Aug-21 |
| |
| |

CONSTRUCTION CONTRACT

Innacing for Variation orders (dgned + under negotilation) Employer's budget [- Committed Contract Amount - Price Adjustment - Payments per SC 13.8 to date - Signed Variation Orders - Signed Variation Orders - Variation Criders under negotilation (average value) = Available Unifer to exhaust budget

| Pro | × | u | e | m | e |
|-----|---|---|---|----|----|
| 1 | a | w | A | -1 | ir |

Legal substantiation for Variation orders (signed + under negotiation)

Limit cumulated values per Latvian Procurement Law - Signed Variation Orders - Variation Orders under negotiation (average value)

= Available buffer per procurement law

B Progress - Year End

Progress at end of this year forecasted at beginning of the year Progress at end of this year forecasted last month Progress at end of this year forecasted this month ") Delta Remarks

EDZL EXAMPLE OF WORKS VARIATION ORDER

Λ

VARIATION ORDER



Final | V1.8 02 June 2021

RBDNB-LV-RCS-0000-E_D-00000-00-0000-RP-RT-48-000-011026



Satura rādītājs / Table of contents

| Izmaiņu rīkojuma veidne / Variation Order Form | _4 |
|---|------------|
| 1. pielikums / Appendix No. 1 | _10 |
| Ar šo VO RCBX013 saistito izmaiņu apraksts / Narrative of changes associated with this VO RCBX013 | 10 |
| 2. pielikums / Appendix No. 2 | _11 |
| Visu attiecīgo iesaistīto pušu apliecinājums par piekrišanu "185 risinājumam" / Confirmation of accepta of "185 Solution" by all relevant stakeholders | ince 11 |
| RFI 1209: Rīgas mezgla pētījums. Sliežu ceļu galīgā izvietojuma plans / Riga Node Assessment_Fin | al 11 |
| 3. pielikums/ Appendix No. 3 | _12 |

IZMAIŅU RĪKOJUMA APSTIPRINĀJUMA FORMA VARIATION APPROVAL FORM

| RCBX013 | Apdzīšanas punkts ("Garāžas ceļš") 1435mm platuma sliedēm Passing Loop ("Garage Track") for 1435mm Gauge Tracks | | |
|--------------------|--|--|--|
| Versija / Version: | Informācija par Izmaiņām un Vienošanos | | |
| v1.3 (04.06.2021) | Information about the Variations and the Agreement | | |
| LĪGUMS | 2019. gada 29. maija Līgums Nr. EDZL-02-1/54: Rail Baltica Rīgas dzelzceļa | | |
| AGREEMENT | tilta, uzbēruma un Rīgas Centrālās pasažieru stacijas kompleksās apbūves | | |

| | UVprojeka izstrade un buvaaroi (turpmak – ugums) Contract No. EDZL-02-1/54 dated 29 May 2019: Rail Battica railway bri railway teri natiway teri natiway teri natiway teri natiway embankment and Riga Central Passenger Station design and b (hereinafter – Contract) US SIA "Eiropas dzelzceļa linijas" (EDzL), Gogoļa iela 3, Riga, LV-1743, Latvija OVER | | | |
|--|--|---|--|--|
| PASÜTĪTĀJS EMPLOYER | | | | |
| UZŅĒMĒJS CONTRACTOR | Pilnsabiedriba / General Partnership "BERERIX", reģ. Nr. 44103125226, Kārļa Ulmaņa gatve 119, Mārupe, Mārupes nov., LV-2167, Latvija | | | |
| INŽENIERS ENGINEER | Piegādātāju apvienība / Supplier DB Engineering & Consulting GmbH Kr. Barona iela 36-4, Rīga LV-1011, Latv | ba / Supplier's Association EGIS RAIL SA, onsulting GmbH un EGIS Bâtiments International, Riga LV-1011, Latvija | | |
| IZMAIŅU PAZIŅOJUMA SAGATAVOŠANAS DATUMS | INŽENIERA IZMAIŅU PAZIŅOJUMA IZVĒRTĒŠANAS UZSĀKŠANAS DATUMS | DATUMS, KURĀ INŽENIERIS PABEIDZIS IZMAIŅU IZVĒRTĒŠANU | | |
| DATE OF INITIATION OF THE VARIATIONS NOTE | DATE OF STARTING EVALUATION OF THE VARIATIONS NOTE BY THE ENGINEER | DATE OF COMPLETION OF THE VARIATION BY THE ENGINEER | | |
| 15.04.2020 | 15.04.2020 | 22.03.2021 | | |

| Sliežu ceļu plāna izmaiņas pie projekta austrumu robežas (apdzīšanas punkta ("Garāžas ceļa") risinājum "1B5") / Track layout changes in eastern border of the Project (passing loop "Garage Track – solution | IS |
|---|-----|
| 185") | 12 |
| Uzņēmēja vēstule / Contractor's letter CRCS-BRR-EGDB-2020-00097 (15.04.2020) | 12 |
| pielikums / Appendix No. 4 | _13 |
| VO RCBX013 tāmes / Pricing Schedules VO RCBX013 | 13 |
| (a) Tāmes kopsavilkums (Līgums un visi Izmaiņu rīkojumi) / Price schedule summary (Contract plus | all |
| Variations) | 13 |
| (b) VO RCBX013 tāme / Price Schedule VO RCBX013 | 13 |
| (c) Detalizētas tāmes/ Detailed price breakdowns: P01 un atbalsta sienas / P01 and retaining walls | |
| Apkopes tunelis / Service tunnel Apkopes platformas / Service platforms Dzelzceļa infrastruktūra / | |
| Railway infrastructure | 13 |



EXAMPLE OF STRUCTURES TO BE BUILT

Ēriks Diļevs TECHNICAL DIRECTOR, AS RB Rail



EMBANKMENT

Main parameters of the structure:

Height: 1.50m to 12.00m Width: 12.00m

| | E _{V2} (DIN 18134) | | D _{pr} (EN 13286-2 standard Proctor) | | |
|--|--|------------------------------|---|------------------------------|--|
| Layer | Target value | Testing frequency | Target value | Testing frequency | |
| Subballast | ≥ 120 MPa | Once per 100 m | ≥ 103% | Once per 20 m | |
| Prepared subgrade | ≥ 80 Mpa (untreated material) | 2 locations - beneath the | ≥ 100% | 2 locations - beneath the | |
| | ≥ 120 Mpa (treated material) | railway and near the edge | | railway and near the edge | |
| Upper embankment (embankment/excavate surface) | ≥ 45 Mpa for fine soils ≥ 60 Mpa for sandy or gravelly soils ≥ 80 Mpa (treated material) | | ≥ 97 % | | |





BRIDGES, ROAD OVERPASSES

Main parameters of the structure:

- Precast or cast in situ
- Structural steel S355
- Concrete minimum strength requirements:
 - For span (superstructure): f'c 28 days = 45 MPa;
 - For pier cap, pier: f'c 28 days = 35 MPa;
 - For foundation: f'c 28 days = 30 MPa.
- Permanent loads (according to EN 1991-1-1):
 - Ballast (including sleeper) 20.0 kN/m³
 - 2 rails per track + fastening 1.5 kN/m/track
 - 1 handrail on each side (2 units) 0.7.0 kN/linear meter

| | Code | Unit | Quantity |
|--|-------|------|------------|
| Concrete C45/55. Deck (beams) | 1.2.1 | m3 | 667,80 |
| Concrete C45/55. Deck (slab) | 1.2.1 | m3 | 868,13 |
| Concrete C30/37 transition slab | 3.8.1 | m3 | 365,00 |
| Reinforcement steel 500MPa beams | 1.3.2 | kg | 100.169,36 |
| Reinforcement steel 500MPa slab | 1.3.2 | kg | 130.219,35 |
| Reinforcement steel 500MPa transition slab | 1.3.2 | kg | 29.200,00 |
| Prestressing reinforcement | 1.3.3 | kg | 23.372,85 |
| Post-tensioned steel 835/1030 mpa in bars | | kg | 0,00 |
| Planks | 1.1.8 | m2 | 3.774,00 |
| Deck formwork | 1.1.4 | m2 | 0,00 |
| Parapet | 1.4.6 | m | 0,00 |
| Falsework (overpass) | 1.3.8 | m2 | 0,00 |
| Launch of Deck T-heams | 1.1.5 | each | 1/13 00 |

Deck for 26m long road overpass specification



BRIDGES, ROAD OVERPASSES













COMBINED ROAD/ANIMAL OVERPASS

Main parameters of the structures:

- Total length: 66.0 m
- The width of structure: 22.0 m
- Traffic lane of gravel road: 7.5 m
- Animal walkway: 15.0 m



Combined Road/Animal crossing structure



COMBINED ROAD/ANIMAL OVERPASS





GAUJA RIVER BRIDGE NEAR MURJANI

Main parameters of the bridge:

- Multispan haunched reinforced concrete box girder
- Total length 1 400 m
- Total number of spans 25
- Central span width 110 m
- Central span height 7 m









COMBINED BRIDGE OVER DAUGAVA RIVER NEAR SALASPILS

Main parameters of the bridge:

- Total length 1150m
- 2+2 road carriageway
- 2 highspeed railway lines
- Steel truss girder with
 - 6 spans of 150m,
 - 2 spans of 125m
- Bottom chord height approx.12m
 over river level





COMBINED BRIDGE OVER DAUGAVA RIVER NEAR SALASPILS





COMBINED BRIDGE OVER DAUGAVA RIVER

Specific parameters of the bridge:

- The bridge deck carries at top chord level a carriageway (4 traffic lanes), and at bottom chord level a high speed two track railway line 12.10m wide
- At top chord level, steel cantilevers are disposed transversely to provide the required transverse clearance, and a reinforced concrete slab provides the support for the road carriageway







COMBINED BRIDGE OVER DAUGAVA RIVER





NOISE BARRIER





THANK YOU FOR ATTENTION! We are ready to answer any questions.

Provided information is a general description of the procurement process only. Before acting on any information, you should consider the appropriateness of it having regard to procurement regulations, officially published documentation for this procurement in electronic procurement system (EIS) and written answers to questions. Not information shared during the presentation constitutes advice, a confirmation, or any kind of commitment or interpretation with regard to this procurement. Any shown materials or verbal statements are provided with no guarantees of reliability, completeness, accuracy or timeliness, and without any obligations. SIA Eiropas Dzelzceļa Līnijas assumes no liability or responsibility for any content shared (in written or in verbal form) during the presentation. The opinions expressed in this presentation and on the following slides are those of the participants individually and not necessarily those of SIA Eiropas Dzelzceļa Līnijas and/or Procurement Commission of respective procurement. Information provided my change later during development of the documentation for the specific procurement.

<u>mlengineer@edzl.lv</u>

edzl@edzl.lv

www.edzl.lv

 \square

Ģenerāļa Radziņa krastmala 9

Rīga, LV- 1050