











GIRDER BRIDGES

JSC Institute Giprostroymost – Saint Petersburg

Since 1968

A rational engineering solution is at the heart of all projects developed and implemented by the Institute. Combining the expertise of both structure and technology developers, the Institute solidified its leading position among its peers in the industry.

Over the 55 years, the Institute Giprostroymost-St. Petersburg contributed to construction and reconstruction of over 750 infrastructural, civil and industrial facilities. Hi-tech structures designed by the Institute team are spread over various regions of Russia and abroad – in Vietnam, Latvia, Finland, Kazakhstan & Turkmenistan.

JSC Institute Giprostroymost – St. Petersburg is widely recognized for solution of complex challenges with a lot of ingenuity involved. For each project development innovative solutions are implemented, which then often become the mainstay of transport infrastructure construction. Such an innovative approach produces truly unique structures that combine cutting-edge technologies, economic effectiveness and a distinctive architectural appearance.





BRIDGE CROSSING OVER THE SVIR RIVER, PODPOROZHYE

PROJECT DESCRIPTION

The Pobedy Bridge over the Svir River in Podporozhye is the main road project of the Eastern part of Leningrad Region. This is new section of the Kola Highway towards Lodeynoye Pole – Podporozhye – Tokari – Pai – Petrozavodsk.

TECHNICAL FEATURES

- Bridge schema 4x63+120+150+120+3x24 m
- Total bridge length 720 m
- Bridge dimensions G-8.5+2x0.75
- Lanes quantity 2 pcs
- Road width 2x3.75
- Technological approaches 0.75 m

Span types:

- On the floodway of the left-bank the structure per spans 1-5 is fulfilled in the form of a continuous composite reinforced concrete pair of girders being linked via crosssection ties via the 4x63 schema.
- On the central part of the bridge crossing, the structure N 5-8 is made via the form of a continuous three-span truss with a lower ride with a polygonal upper girth according to designated schema 120+150+120.
- On the right-bank floodway spans 8-11 are prefabricated girders of 24 meters long, being linked by means of longitudinal and transversal monolithic sections.
- U-shaped intermediate piers are fulfilled out of RC. Bridge abutments are reinforced concrete monolithic ones. Piles on Piers1-8 are bored ones with a diameter of 1.2 m with widening up to 2.3 m and on Piers 9-11 are drive prismatic piles.

LIST OF WORKS

Work Documentation Stage

CLIENT

State Company Lenavtodor

CONTRACTOR

000 ETC

DESIGN PERIOD

2020 - 2021

CONSTRUCTION PERIOD

2021 - 2023





BOLSHOI SMOLENSKIY BRIDGE, ST. PETERSBURG, RF

PROJECT DESCRIPTION

It is innovative transportation route with bridge over the Neva River near Kolontay Street. The area of future construction site is being considered from Prospect Obuhovskoy Oborony up to Dalnevostochni Avenue.

- Motorway with a length of 2,34 km
- 3 two level transportation interchanges
- Viaduct over the Prospect Obuhovskoy Oborony
- Viaduct over the Dalnevostochni Avenue
- Bridge crossing over the Neva River near Kolontay Street

UNIQUENESS

It is new bascule bridge of Saint Petersburg after more than forty years period

TECHNICAL SPECIFICATIONS

- motorway road of class ii
- lanes quantity 4-6 pcs.
- width of tramway road 7.50 m
- pedestrian lanes are being equipped with bicycle tracks

LIST OF WORKS

- Set of engineering survey
- DD development
- Economical research

CLIENT

Committee for the Development of Transport Infrastructure of St. Petersburg

DESIGN PERIOD

2021 - 2022

CONSTRUCTION PERIOD



BRIDGE OVER THE NEVA RIVER WITHIN SPEEDY LATITUDINAL HIGHWAY, SAINT PETERSBURG, RF



PROJECT DESCRIPTION

The latitudinal high-speed highway of St. Petersburg and the Leningrad Region will run along the Northern railway semicircle through the territory of the Moscowsky, Frunzensky, Nevsky and Krasnogvardeisky Districts of the city. This new road should cross the Neva River in the alignment of Faiansovaya - Zolnaya streets upstream of the existing Finnish Railway Bridge. Our new bridge crossing will be almost invisible against the background of the Finnish railway bridge.

TECHNICAL FEATURES

- type of construction : new
- road class: highway
- bridge schema: (100.45+100.4)+60.1+(100.4+101.35) m
- bascule type of bridge crossing with independent wings per each traffic direction
- deck composite, solid RC
- lanes quantity 3per each direction
- lane width schema: 3.5+2x3.75 m
- carriageway width: 2x(D-13.5)
- median width (including emergency lane): 5.0 m
- road pavement: capital
- type of pavement: asphalt-concrete





- temporary vertical load: A14, H14
- bridge length : 462.9 m
- total area: 13,887 m2
- deck steel consumption: 450 kg/m2
- bascule deck steel consumption : 496 kg/m2

LIST OF WORKS

Project documentation Stage:

- general design
- design paperwork development
- main structures design
- MS development
- SAC&D development

- environment safety design
- estimation design
- Federal expertise fulfillment

CLIENT

SC WHSD

DESIGN PERIOD

2019 - 2021

CONSTRUCTION STAGE

МОСТ ЧЕРЕЗ РЕКУ ВОЛГУ, КАЗАНЬ



It should run from the intersection with the R-241 Federal Highway 'Kazan – Buinsk – Ulyanovsk' to the traffic circle of 'Sorochye Gory – Shali local highway '. The most important event should be the construction of a new bridge crossing over the Volga River, which shall make it more comfortable for motorists regarding status of northern bypass of Kazan, as well as significant unload of existing ferry crossings.

This Stage covers artificial structures counting bridges and overpasses. Part of this route with the entire 24 km coincides with a bypass of Kazan, which is being constructed.

TECHNICAL SPECIFICATIONS

bridge schema: (117.3+126.0+3x155.0+126.0+97.3)+(97.3+8x126.0+97.3)
 +(97.3+8x126.0+97.3)

- total length: 3362.03 m
- carriageway clearance: 2(Γ-10.5) m
- bridge width: 25.0 m
- lanes quantity: 4 pcs

LIST OF WORKS

Project Documentation Stage:

- general design
- engineering and geodetic survey

- engineering and geological survey
- engineering and hydro-meteorological survey
- environment survey
- removal of explosive materials
- archeological and cultural survey
- intersections survey
- buildings and structures survey within designated lot
- documentation preparation

Work Documentation Stage:

technical supervision

GENERAL CONTRACTOR

Avtodor Ltd

GENERAL CONTRACTOR

Transstroymehanizasiya Ltd

CLIENT

Federal Enterprise 'Russian Motorways', 'Avtodor Ltd'

DESIGN PERIOD

2020 - 2023

CONSTRUCTION PERIOD

$\ensuremath{\mathsf{BRIDGE}}$ over the $\ensuremath{\mathsf{SURA}}$ river, rf





Our new bridge crossing is a part of the M-12 Highway 'Moscow – Nizhny Novgorod – Kazan', Stage 6 454 - km 586, Nizhny Novgorod Region, Chuvash Republic (intersection with local road 22K-0162 'Rabotki – Poretskoe' up to the next A-151 Highway 'Tsivilsk – Ulyanovsk' (Stage 1.3 502 – 517 km).

TECHNICAL FEATURES

- bridge schema: (84+4x126+84)+(4x63) m
- total length: 930.5 m
- carriageway schema: 2(G-10.5)
- sidewalks and technical approaches none
- lanes quantity: 4 pcs
- navigation clearance: 9.5x60 m

LIST OF WORKS

Project Documentation Stage:

- bridge design development
- construction traffic management
- engineering network arrangement
- exterior illumination design, power supply, drainage schema, navigation alarm, transportation safety measures

- site auxiliary structures plan
- Method Statement preparation
- environment safety measures
- fire safety development
- construction stage monitoring
- monitoring design while service stage period
- estimate documentation development

GENERAL CONTRACTOR

Avtodor Ltd

CLIENT

Federal Enterprise Avtodor

DESIGN PERIOD

2020 - 2022

CONSTRUCTION PERIOD

BRIDGE OVER THE SVIYAGA RIVER IS BEING CONCEIVED AS A PART OF M-12 HIGHWAY 'MOSCOW – NIZHNY NOVGOROD – KAZAN'



Bridge crossing over the Sviyaga River is being conceived as a part of M-12 Highway 'Moscow- Nizhny Novgorod - Kazan', Stage VII 586 -663 km in Chuvash Republic, Tatarstan. The above structure is being installed within intersection of A-151 Federal Highway 'Civilsk - Ulyanovsk' up to the subsequent Highway P-241 'Kazan - Buinsk -Ulyanovsk' Stage VII.III started from Bolshie Kaybitsy Settlement up to Federal Highway P-241.

The bridge over the Sviyaga River within the Federal high-speed Highway M-12 «Moscow - Nizhny Novgorod - Kazan». It connects the Kaibitsky, Apastovsky and Verkhneuslonsky Districts of Tatarstan.

TECHNICAL SPECIFICATIONS

- bridge schema: 6x84.0 m
- length of the bridge: 517.2 m
- clearance: 2(Γ-10.5)
- lanes quantity: 4 pcs

LIST OF WORKS

Project Documentation Stage:

- bridge design development
- traffic management design
- utility lines rearrangement
- external illumination design, power supply, drainage, navigation lights arrangement, including transportation safety measures
- linear structures design
- construction arrangement design
- measures against karst factors
- environment protection measures
- fire safety measures

- structural monitoring per construction stage
- monitoring performance during service stage
- estimate development

Work Documentation Stage:

technical supervision

GENERAL CONTRACTOR

Federal Enterprise Avtodor

CLIENT

Volgogradstroy Ltd

DESIGN PERIOD

2020 - 2023

CONSTRUCTION PERIOD

2021 - 2024





BRIDGE CROSSING OVER THE OB RIVER, SURGUT

PROJECT DESCRIPTION

New Ob River Bridge should be an important link within Federal Highway 'Moscow –Tyumen – Surgut – Salekhard'.

- total length of the highway 44 km
- 'Tube Type' transportation junctions of double level
- viaduct over the RR 'Tyumen-Surgut'
- main bridge over the Ob River
- Four small bridges:
 - Sukhoi Agan channel two bridges
 - Kazennaya Creak
 - Poloy stream

TECHNICAL SPECIFICATIONS

- road category II
- lanes quantity 4 pcs
- carriageway schema: 2(G-10.5)

WHAT MAKES IT UNIQUE

Solid bridge girder with a length of 153 m

LIST OF WORKS

- general design
- engineering survey
- DD development
- economical research
- WD development
- technical supervision

CLIENT

Road Administration of Khanty-Mansiysk

GENERAL CONTRACTOR

SC Mostostroy-11

ALTERNATIVE ROUTE TO GAGARIN AVENUE, NIZHNIY NOVGOROD



Gagarin Avenue Backup Street is being constructed as a new highway from Ankundinski Motorway up to Julius Fuchik Street.

The above new road should ease that heavy traffic of the only city highway, which is an industrial zone important link of the Soviet and Prioksky Districts and it should connect new neighborhoods (Ankudilovsky Park, Novaya Kuznechikha, Flowers, Novelties) with the city center including Strigino Airport.

Being constructed bridge crossing of Gagarin Avenue as a part of Alternative Highway must be that keystone of the comfort for local drivers via the bridge heavy traffic unloading over the Oka River.

Our site is located within the mouth of Oka River (14.5 km from Fuchik Street). Five stages of this project are being designed as follows.

TECHNICAL SPECIFICATIONS

- bridge schema 20.4+(69.0+108.0+4x152+132.0+84.0)
- construction length 1,034.925 m

- lanes number 4 pcs
- designated speed 80 km/h
- lane width 3.5-3.75 m
- pedestrian lane width 2.0 m

LIST OF WORKS

Project Documentation Stage:

- general design
- development main structures
- construction method statements (CMS)
- estimate calculation
- passage Federal Expertise

CLIENT

Federal Administration of Motorways of Nizhegorodskaya Oblast"

DESIGN PERIOD



BRIDGE OVER THE **SEVERNI DONETS** RIVER, KAMENSK-SHACHTINSKI

RECONSTRUCTION





Motorway road Don M-4 Moscow – Woronesch - Rostow-Na - Donu-Noworossijsk. Bridge reconstruction over the Severni Donets River on 930+788 km of Don M-4 started from Moscow to Woronesch up to Rostow - Na - Donu, Rostovskaya Oblast.

The above truss bridge of 55.03+3×87.9+55.03 m was completed about 1960. Back in 2019 the damage of upper girth within span 4-5 was spotted by the company SMU-Dordonstroy. Further the bridge was closed for transportation and pedestrians.

BRIDGE FEATURES AFTER RECONSTRUCTION

- bridge schema: 61.0+3x88+61.0 m
- bridge length from abutments edge: 397.62 m
- clear headway of bridge: 15.25 m
- width of pedestrian lane upstream: 2.25 m
- technical approach of downstream: 0.75 m
- quantity of lanes: 3 pcs.
- bridge clearance per main span: 12x80 m

LIST OF WORKS

Project Documentation Stage:

- structures (right and left bridges)
- reconstruction of right bridge
- list of measures for left bridge reconstruction
- reconstruction of bridge approaches
- technical order development for traffic arrangement
- utility lines rearrangement
- external lights, power supply, drainage, navigation lights, with transportation safety monitoring design
- set of bridge linear structures design
- construction method statement development

- environment safety measures implementation
- fire safety measures implementation
- monitoring during construction stage
- design development of right bridge maintenance while stage of service
- estimate documentation development

CLIENT

SC Petersburg roads

FEDERAL CLIENT

SC AVTODOR

DESIGN PERIOD

2019 - 2020

CONSTRUCTION PERIOD

KRYMSKY BRIDGE, RUSSIA

Kerch Strait Bridge Crossing



The bridge is situated between Crimea's city of Kerch and the village of Taman in the Temryuk District of the Krasnodar Region, along Tuzla Island and the Tuzla Spit.

- The crossing consists of two parallel bridges a motorway bridge and railroad bridge
- The decks for the highway are beam composite reinforced concrete, simple and continuous ones of individual design.
- Steel decks with an orthotropic plate are located above the water area of the Kerch Strait. The design span is from 54.21m to 64.20m
- There will be a separate deck for each traffic direction. In the crosssection, two main I-beams create the span: they are connected via transversal beams and the system of vertical and horizontal braces
- The decks for the railway tracks are simple, made of solid metal with an orthotropic plate and a ballast bed
- The design span is from 54.6 m to 62.56 m
- The decks are separate, one for each railway track and connected on the piers with jacking beams
- The main box-section girders of the deck are divided into two segments horizontally
- Arch spans with a design span of 227 m are located over the Kerch-Yenikalsky Channel and provide a clearance of 185 m x 35 m
- category of railway track II
- category of motor road 1B
- designed length of the crossing 19,000 m
- length of the motorway bridge 16,857.28 m
- length of the railroad bridge 18,118.05 m

LIST OF WORKS

- general design
- design of main structures
- (design documentation and working documentation)
 design of construction technology
- development of SAC&D
- design (design documentation and working documentation)

CLIENT

Taman Road Department, federal state enterprise

GENERAL CONTRACTOR

LLK STROYGASMONTAZH

DESIGN PERIOD

Project Documentation: 2015

Work Documentation: 2015 – 2018

CONSTRUCTION PERIOD





BRIDGE ON SIMONOVSKAYA EMBANKMENT, MOSCOW

PROJECT DESCRIPTION

Bridge is located on Simonovskaya Embankment near river-boat station up to 2-nd cross-street. Bridge over Koschuhovski back water linked two districts: South with South-East one.

Period of construction considered as two years, but it was completed in seven months instead with the same methods which were implemented during Crimean Bridge construction.

TECHNICAL SPECIFICATIONS

- bridge schema: 45.0+49.2+99.2+150+99.2+24.2+31.93+24.7
- total bridge length 530.37 m
- middle span length– 150 m
- width 36.9
- lane width- 2x3
- bridge clearance 10.2 m

LIST OF WORKS

- design documentation correction
- development of design documentation

CLIENT

Moscow Federal Entity Bridge and Road Administration

GENERAL CONTRACTOR

SC Mosingproekt

DESIGN PERIOD

2018 - 2019

CONSTRUCTION PERIOD





BRIDGE OVER THE **VOLGA RIVER** IN THE **CITY OF TVER** (WESTERN BRIDGE)

PROJECT DESCRIPTION

The bridge is located in a densely populated area of the city of Tver and includes a highway from the St. Petersburg highway to Kalinina prospect (the area of Komsomolskaya Square – Tmaka River) passing in parallel to the railway bed, with reconstruction of the highway overcrossing over the railway tracks on the St. Petersburg highway (Gorbaty Bridge).

Construction of the bridge over the Volga River (Western bridge), reconstruction of the railway overcrossing over Kalinina prospect. Road category – through street of citywide importance with controlled traffic.

Length of bridge crossing section:

- base line 3 004 m
- number of traffic lines 4

TRAFFIC INTERCHANGE WITH THE ST.PETERSBURG HIGHWAY

- St.Petersburg highway 693.65 m
- 4 traffic lanes
- interchange exit 1 340.10 m, 3 traffic lanes
- interchange exit 2 306.7 m, 3 traffic lanes
- interchange exit 3 94.2 m, 1 traffic lane

TRAFFIC INTERCHANGE AT THE KOMSOMOLSKAYA SQUARE

- Kalinina prospect Lenina prospect 282.50 m
- circlular movement 453.33 m
- Kalinina prospect 8
- Lenina prospect 4
- circlular movement 3

STRUCTURES COMPOSED OF BRIDGE CROSSING MOTOR ROAD BRIDGE ACROSS THE VOLGA RIVER

- full metal continuous superstructure
- abutments and intermediate piers are
- of reinforced concrete on pile foundation

- bridge length 349.57 m
- bridge diagram 99+126+99
- area 13,301 m²

HIGHWAY VIADUCT OVER RAILWAY TRACKS ALONG TO THE ST.PETERSBURG HIGHWAY (GORBATY BRIDGE)

- continuous composite reinforced concrete
- superstructures of individual design
- viaduct length 158.47 m
- viaduct diagram 40+47+40
- area 4136 m²

RAILWAY VIADUCT OVER KALININA PROSPECT.

FLYOVER OF THE NORTHERN APPROACH

- steel beam non-continuous superstructure of individual design with a roadway below
- viaduct length 70.9 m
- viaduct diagram 27+27
- number of ways 2
- area 886.25 m²

LIST OF WORKS

Project Documentation Stage:

- general design
- undergoing of main state expert review

CLIENT

Department of Architecture and Construction of Administration of the town of Tver

DESIGN PERIOD

CHUSOVAYA RIVER BRIDGE IN PERM CITY





Reconstruction of the Perm-Berezniki Highway, section of the bridge over the Chusovaya River km 22+157 – km 25+780. Initial part of the above-mentioned section of the Federal highway is located within the city of Perm running along the left bank of the Chusovaya River. Section length is 3.62 km, including the bridge over the Chusovaya River – 1,504 m.

New steel girder bridge over the Chusovaya River:

- schema: (4x84)+(84+126+5x147+126+84) m
- overall length 1,504.4 m
- total dimension 11.5 m
- entire area 22,560 m²

LIST OF WORKS

Project Documentation Stage:

- general design
- design of basic structures (bridge over the Chusovaya River and railway overpasses)
- approaches reconstruction design
- construction method statement
- estimate calculation of the motor road section reconstruction
- presentation of design and estimate documentation to FSI Glavgosexpertiza of Russia
- expertise support
- Federal Expertise passing

Work Documentation Stage.

CLIENT

Perm Concession Company

DESIGN PERIOD

2018 - 2020

DESIGN PERIOD

2019 - 2023





NNNNK ZZZZAZANA

BRIDGE OVER THE MOSCOW CHANNEL

PROJECT DESCRIPTION

Bridge and further motorway over the Moscow Channel with viaducts structures of PK 258+58,93 is being crossing the following:

- Motorway A-104 Moscow Dimitrov-Dubna (Dmitrovski Highway), with four lanes within spot of intersection (without divisor), width of carriageway is 14 m, sub grade width is 15 m
- Two rail tracks of Sevelovskiy Direction of Moscow Rail Roads between Iksha Station and Morozki Station with further arrangement of double additional ways per one in each direction
- Moscow Channel: area between Yachromski and Ikshinski impoundments, within Sluice 4 and Sluice 5 (530 m from Sluice 5 entrance). Artificial fairway within spot of intersection has width of 112 m and depth of 4.5 m with bridge clearance of 17.0 m. Approaches of three meters width should be completed along that channel embankments.
- 12 meters is maximum width of Iksha River.

TECHNICAL SPECIFICATIONS

- type of construction New one
- Road Class IA
- designated speed 140 km/h
- lane's quantity 2x2 pcs.
- lane width 3.75 m
- width of technical approach 1.0 m
- carriageway width 2(G-11)
- width of divisor (including emergency lanes) 4.1 m
- bridge width 27.3 m
- bridge schema:
- 41.75+41.95+87.05+150.0+87.05+61.95+4x65.0+8x63.0+3x42.0+41.19
- type of road pavement capital
- type of cover asphalt-concrete
- temporary vertical loads A14, H14

- bridge length 1,410.15 m
- bridge area 38,497 m²

LIST OF WORKS

- work documentation analysis and optimization
- design documentation development per stages technical and structural features of linear construction site
- main structures development
- construction arrangement project
- development of SAC&D
- Working Documentation Stage:
 - construction technology development

CLIENT

SC Avtoban

DESIGN PERIOD

2016 - 2017

CONSTRUCTION PERIOD





RECONSTRUCTION OF **BRIDGE VISOKIY** IN **KALININGRAD** CITY, **RUSSIA**

RECONSTRUCTION

PROJECT DESCRIPTION

Reconstruction of Bridge Visokiy over the Pregolya River along the Oktyabrskaya St., Kaliningrad. Bascule bridge structure with single pivoting section.

- bridge schema 23.5 + 14.8 + 00 m
- total length 55 m
- carriageway dimension Γ- 5+7.5+5 m
- sidewalk Γ- 2x3 m
- length of retaining walls 68 m
- deck material steel

LIST OF WORKS

- design of architectural solution
- main structures design
- construction Technology design
- State Expertise

CLIENT

Administration of Kaliningrad City

DESIGN PERIOD

2014 - 2015

CONSTRUCTION PERIOD

2016 - 2017

TUCHKOV BRIDGE IN ST. PETERSBURG, RUSSIA

RECONSTRUCTION



Tuchkov Bridge – three-span draw bridge over the Malaya Neva River connecting Bolshoy Prospect of the Petrograd Side with the Cadet line and the First line of Vasilievsky Island in St. Petersburg.

The bridge reconstruction project provides for replacement of fixed superstructures, reconstruction of the existing draw span, replacement of the equipment of the draw span piers and repair of pier structures with arrangement of niches for resting of fixed superstructures on the abutment piers.

- bridge length 231.6 m
- bridge width 35.5 m

Based on the static scheme, the fixed superstructure represents a beam with a design span of 75.0 m, which is rigidly restrained in the river bed pier and which is hingedly and movably resting on the abutment pier. Installation of the superstructure is being carried out by means of cantilever erection from the river bed piers with a stageby-stage concreting of the carriageway slab and tensioning of the high-tensile reinforcement after each stage of concreting.

Cleaning and repairing of the external surfaces of the piers and granite facing with replacement of damaged slabs or missing slabs are being performed as part of reconstruction. Partial dismantling of the top of the wall with subsequent installation of the head with the use of cast reinforced concrete and arrangement of the bridge seats is being carried out during reconstruction of the abutment piers.

Connection with the embankment is being fulfilled with the use of cast reinforced concrete approach slabs of the length of 6m. Repairing and cleaning of the external surfaces of the granite facing with replacement of damaged slabs are being fulfilled. Sidewalks of the width 2.75 m, located at a higher level relative to the roadway, are provided for on the bridge in both directions.

LIST OF WORKS

- development of bridge reconstruction project
- development of the following project sections: road works outdoor electric lighting
- general improvement and landscaping
- development of Construction Method Statement
- development of SAC&D
- summary cost of Construction and Installation Works
- organization of traffic for the period of reconstruction

CLIENT

St. Petersburg State-Owned Enterprise Directorate of Transport Construction

DESIGN PERIOD

2011 - 2014

RECONSTRUCTION PERIOD



COMPOSITE **BRIDGE OVER THE NADYM** RIVER, **NADYM** CITY, **RUSSIA**


Composite bridge crossing under motorway and RR

- bridge length 1,334 m
- bridge schema: 6 x (2 x 110 m)

Deck structure:

- carriageway continuous steel deck with orthotropic box slab. dimensions Γ 10+2x1.0) RR continuous steel truss 2x110 m under one way RR
- massive piers on piled foundation
- technical supervision is being conducted by Institute Giprostroymost St. Petersburg, Ltd

LIST OF WORKS

- design of bridge structures construction technology design
- development of SAC&D
- design of construction MS

DESIGN & CONSTRUCTION PERIOD

2015



TRAFFIC INTERCHANGE IN NOVOSIBIRSK CITY, RUSSIA

PROJECT DESCRIPTION

Traffic Interchange at the Intersection of Bolshevistskaya Street, Krasny Prospect of Kamensky Highway and Fabrichnaya Street in the City of Novosibirsk.

- overpass superstructure length 348.8 m (along the axis of the overpass)
- overpass diagram: 39+45+42+3x45+48+39 m
- clear headway of bridge includes six traffic lanes (per three lanes in each direction)
- dividing strip of the width of 3 m
- operating aisle 0.75 m
- continuous beam superstructure with orthotropic carriageway slab, consisting of 6 twin steel beams of the height of 1.78 m in cross section is located on the curve of the radius of 500 m and transition curves
- intermediate piers are located at right angles to the flyover axis

LIST OF WORKS

Working Documentation:

- design of superstructure of overpass
- development of SAC&D

GENERAL CONTRACTOR

JSC Sibmost

DESIGN PERIOD

2010 - 2012

CONSTRUCTION PERIOD

2010 - 2013



BRIDGE OVER THE ISET RIVER IN KAMENSK-URALSKY CITY, RUSSIA

PROJECT DESCRIPTION

The facility is located in the town of Kamensk-Uralsky, Sverdlovsk Region, on the Iset River. Kamensk-Uralsky, is a city of regional subordination in the Sverdlovsk Region and is the administrative center of the town of Kamensk-Ural municipality.

The area of designing is a habitable territory with a well-developed network of motor roads. The bridge is on the straight line in plan. In profile, the bridge is located on the straight line with a longitudinal slope of 5%. The levels of the bridge carriageway axis are dictated by the longitudinal profile of the motor road being designed.

The clear headway of bridge structures is taken in accordance with the category of the projected motor road: through street of citywide importance with controlled traffic. The overpass is illuminated at night.

- bridge diagram: 78+2 x 96+78
- bridge length: 362.7 m
- limiting dimension: 2 (Γ-11.5) m

In cross direction, the superstructure consists of five main beams of I-shaped cross-section with vertical webs of a constant height of 3600 mm, connected with cross beams and a monolithic reinforced concrete slab on the top. Longitudinal and cross ties of a lattice structure are additionally installed for the period of installation of steel structures of the superstructure and concreting of the carriageway slab.

- the distance between the main beams is 5100 mm
- total weight of steel: 2 127 tonnes
- total volume of reinforced concrete: 4 754 m³

LIST OF WORKS

- general design
- design of main structures
- design of technology of construction
- development of SAC&D

CLIENT

Municipal Budgetary Institution Department of Capital Construction

Kamensk-Uralsky, Sverdlovsk Region

DESIGN PERIOD



ROAD BRIDGE ACROSS THE VOLGA RIVER IN THE CITY OF TVER(EASTERN BRIDGE), RUSSIA





Type of construction – overhaul repair of unsafe motor road bridge. The bridge is a five-span reinforced concrete beam continuous superstructure with a roadway above, on the monolithic reinforced concrete piers on pile foundations. The superstructure main beams are of a variable height due to curved outline of the bottom chord.

The bridge superstructures are prefabricated ones. Box-like segments of the superstructure are combined together on glue joints via their compression with bundles of high-strength wire. In cross direction, the superstructure consists of two main box beams connected to each other with a monolithic section and carriageway reinforced concrete slab.

The carriageway has 4 traffic lanes (2 in each direction) and 2 lines of tram tracks along the bridge axis. Intermediate piers consist of 2 columns not connected between each other. The bridge abutments are of earth-covered type. The main decision made during overhaul repair of the unsafe bridge is carrying out of works on strengthening the superstructures with the outer high-tensile reinforcement located inside the box girders of the spans.

- scheme of superstructures: 55 m+96 m+124 m+96 m+55 m
- bridge total length 439.2 m
- bridge width 29.3 m
- clear headways of bridge: 1.0 m+2x3.5 m+7.5 m+2x3.5 m+1.0 m= 23.5 m

LIST OF WORKS

general design

Working Documentation Stage::

- design of main structures
- development of SAC&D
- design of road works
- relocation of utilities
- design of outdoor lighting electric power supply
- development of cost estimate documentation
- technical support of construction
- development of strengthening the superstructure with high-tensile reinforcement
- calculation for test loads
- field supervision

CLIENT

LLC ASB Stroy

STATE CUSTOMER

Department of Architecture and Construction of Administration of the town of Tver

DESIGN PERIOD

2012 - 2013

CONSTRUCTION PERIOD



ARTIFICIAL STRUCTURES ON **THE COMBINED ROAD ADLER** – MOUNTAIN CLIMATE RESORT **ALPIKA - SERVICE**, RUSSIA

PROJECT DESCRIPTION

The seismicity of the construction area & construction sites is 9 points.

To damp the movements arising during seismic impact, and uniformly distribute horizontal seismic load between all piers of the overcrossings and bridges, damping devices having elastic component, i.e., returning the superstructure to the initial position are installed in line of each pier between the superstructure beams and the stop node on the pier. In this regard, thoroughly movable ball and segment bearings are installed on all piers.

Watertight expansion joints of beam type of Maurer Sohne GmbH&Co company compensate temperature movements on the intermediate piers and temperature and seismic movements on abutments. Shock transmitters, which are combining non-continuous superstructures into continuous ones in case of earthquake, are installed along with expansion joints.

OVERCROSSING OVER THE RAILWAY ON PK38+33+PK45+71

- overcrossing diagram:
 [(3x63+62 9)+1 0+(62 2x63+
- [(3x63+62.9)+1.0+(62.2x63+46.9)+1.05+(62.85+110+62.85)] m bridge length – 740.195 m
- overcrossing limiting dimension Γ (9.0+2.7+9.0+2x0.75 m)
- number of traffic lanes 4
- traffic lane width 3.5 m
- width of safety strips 2 m
- dividing strip width 2.7 m
- axis of the overcrossing being designed is located on the S-shaped curve with the radius of both arcs of 2,100 m in plan, and it is located on the convex curve of the radius of 10,000 m in profile.

SUPERSTRUCTURE (3X63+62.9)m

- material composite reinforced concrete
- width of reinforced concrete slab b = 23.8 m, volume of concrete 676 m³
- total weight of steel is1660 tonnes(steel 15ХСНД)
- consumption of steel per 1m2 of superstructure 0.276 tonne.

SUPERSTRUCTURE(62.9+2X63+46.9)m

- material composite reinforced concrete
- width of reinforced concrete slab b = 23.8 m, volume of concrete 633 m³
- total weight of steel 1420.6 tonnes(steel 15ХСНД)
- consumption of steel per 1m² of superstructure 0.253 tonne.

SUPERSTRUCTURE (62.85+110+62.85)m

- steel superstructure consists of two box girders of 2,484 mm height in the cross section
- total weight of steel is 2 344.5 tonnes(steel 15ХСНД)
- steel consumption per 1 m² of superstructure 0.414 tonne
- total consumption of reinforced concrete, including piers and carriageway reinforced concrete slab - 11 553 m³.

BRIDGE OVER THE MZYMTA RIVER ON PK49+85+PK54+61

- bridge diagram (3x42+4x63+2x42) m
- bridge length 476.66 m
- limiting dimension of bridge from (9.0+2.7+9.0)+2x0.75 m at the beginning of the bridge to (18.2+18.2)+2x0.75 m at the end of the bridge
- number of traffic lanes 4
- traffic lane width 3.5 m
- width of safety strips 2 m
- dividing strip width 2.7 m
- axis of the overcrossing being designed is located on the S-shaped curve with the radius of the first arc of 2 100 m and the radius of the second arc of 1000 m in plan, and the bridge is located on the rise with a constant longitudinal slope of 0.012 in profile

SUPERSTRUCTURE

- diagram (3x42+4x63+2x42) m
- continuous composite reinforced concrete
- superstructure has two main beams of the
- height of 2.4 m in cross section
- width of reinforced concrete slab
- b = 23.8÷39.126 m, volume of concrete 1001.8 m³
- total weight of steel is 3466.5 tonnes
- (steel 15ХСНД)consumption of steel per 1 m² of superstructure – 0.24 tonne.

OVERCROSING ON PK56+38+PK58+60

- overcrossing diagram (42+2x63+42) m
- overcrossing length 213.2 m
- limiting dimension of bridge Γ=(10+2x0.75) m
- number of traffic lanes 2
- traffic lane width 3.5 m
- width of safety strips 1.5 m
- axis of the overcrossing being designed is located on the curve

 with the radius of the arc of 600 m, and, in profile, the bridge is located on the rise, passing into a curve of the radius of 10,000 m

SUPERSTRUCTURE

- continuous composite reinforced concrete superstructure has two main beams of the height of 2.4 m in cross section
 superstructure is located on a superelevation,
- superstructure is located on a superelev
 the roadway has a one-way slope 0.03
- width of reinforced concrete slab b = 13.3 m,
- volume of concrete 345 m³
- total weight of steel is 662.3 tonnes (steel 15ХСНД)
- consumption of steel per 1m² of superstructure 0.240 tonne
- total consumption of steel, including piers and carriageway reinforced concrete slab - 2400 m³

BRIDGE OVER THE MZYMTA RIVER ON PK63+32+PK66+01

- bridge diagram (42+63+4x42) m
- bridge length 373.11 m
- limiting dimension of bridge Γ=(10+2x0.75) m
- number of traffic lanes 2
- traffic lane width 3.5 m
- width of safety strips 1.5 m
- located on the curve with the radius of 2250 m in plan, and in profile, the bridge is located on a vertical curve of the radius of > 10,000 m and on the sloping sections with the upward slope 0.03 at the beginning of the bridge and with the downward slope 0.019 at the end of the bridge adjoining the curve.

SUPERSTRUCTURE

- continuous composite reinforced concrete superstructure has two main beams of the height of 2.4 m in cross section
- width of reinforced concrete slab b = 13.2 m, volume of concrete 581 m³
- total weight of steel is 1 030 tonnes (steel 15ХСНД)
- consumption of steel per 1 m² of superstructure 0.220 tonne.

BRIDGE OVER THE MZYMTA RIVER ON PK70+49+PK80+31

- bridge diagram –
- [(42+2x63+4x42)+1.02+5x42+1.02+5x42+1.02+5x42] m
- bridge length 982 m
- limiting dimension of bridge Γ=(10+2x0.75) m
- number of traffic lanes 2
- traffic lane width 3.5 m
- width of safety strips 1.5 m
- axis of the overcrossing being designed is located on the S-shaped curve with the radius of the first arc of 2 250 m up to PK78+02, on the transition curve to the arc of the inverse radius up to PK79+76 and the section of the curve of the radius of 1 600 m to the end of the bridge. In profile, the bridge has a constant longitudinal slope of 0.006 upwards from the pier 1 to the pier 23.

SUPERSTRUCTURE

- diagram: (42+2x63+4x42) m
- continuous composite reinforced concrete superstructure has two main beams of the height of 2.4 m in cross section
- weight of steel is 1069 tonnes (steel 15ХСНД)
- consumption of steel per 1m² of superstructure 0.241 tonne
- width of reinforced concrete slab b = 13.2 m, volume of concrete 544 m³

SUPERSTRUCTURE 5X42 m

- continuous composite reinforced concrete superstructure has two main beams of the height of 2.4 m in cross section
- weight of steel is 617 tonnes (steel 15ХСНД)
- consumption of steel per 1m² of superstructure 0.222 tonne
- width of reinforced concrete slab b = 13.2 m
- volume of concrete 344 m³
- total weight of steel per bridge 2.920 tonnes
- consumption of steel per 1m2 of superstructure -0.228 tonne.

LIST OF WORKS:

Project & Working Documentation Stage:

- design of main structures
- design of Construction Method Statement
- development of technology of construction
- development of SAC&D

CLIENT

JSC Russian Railways

SC Peterburg Dorservis

DESIGN PERIOD

2009 - 2011

CONSTRUCTION PERIOD



LOW-WATER BRIDGE OVER THE AMURSKY GULF, VLADIVOSTOK, RUSSIA



City bridge in Vladivostok city connecting Peninsula De-Friz with Sedanka settlement. Causeway of 4,364 meters long across the Amursky Gulf is a part of new highway - Noviy Township-De-Friz-Sedanka-Patrocl.

The entire length of that completed structure is about 40 kilometers long. The bridge became the last construction site of the new highway being opened to service. Presence of brand new road artery helps a lot to unclog our Federal Motorway Khabarovsk Vladivostok as a detour of famous recreation zone of Muraviev-Amursky Peninsula.

Thanks to new bridge crossing the traffic capacity of the city approaches has doubled against the last year.

- brige diagram: 16 continuous composite RC girders
- with each panel per 273.8 m long
- bridge schema: 42.4+3x63+42.4 m
- width 23.88 m
- clearance $-2(\Gamma 10)$
- sidewalks 2x1.0 m

LIST OF WORKS

Working Documentation Stage:

- general design
- total main structures design
- design of motorway with junction
- design of underground pedestrian crossings
- development of SAC&D
- construction technology and MS design
- illumination and power supply arrangement
- sewage facilities completion
- utilities network rearrangement
- heating boilers modification
- technical supervision
- Federal Expertise passing

CLIENT

Department of Road Section of Primorskiy Kray

GENERAL CONTRACTOR

TMK Ltd

DESIGN PERIOD

2010 - 2011

CONSTRUCTION PERIOD

2010 - 2012

IIIIIIIE

FLYOVER OVER RAILWAY AND **DZERZHINSK HIGHWAY** IN THE **TOWN OF KOTELNIKY**, RUSSIA



The flyover provides exit road of urban and transit vehicles from Moscow Ring Road to M-5 Ural federal highway.

- overcrossing diagram: superstructure-1 42+67+2x42+30+29 m; superstructure-2 50+67+50 m; superstructure-3 25+42+24+30+31.5+27.4 m
- flyover length 646.2 m (along the flyover axis)
- clear headway of bridge consists of 6 traffic lanes (three lanes in each direction), dividing strip of the width of 5.7 m, and operating aisle of 0.75 m
- continuous composite reinforced concrete beam superstructure is located on the curve with the radius of 400 m in plan and on the transition curves with the formwork being left, separated for two traffic directions, each consisting of 4 twinned steel beams with the height of 2.2 m (superstructures -1 & 3) and with the height of 3.2 m (superstructure-2) in cross section
- intermediate piers are located at acute angles to the flyover axis

LIST OF WORKS

Working Documentation Stage:

- design of flyover superstructures
- development of SAC&D for implementation of longitudinal launching of superstructures superstructure-2 over the railway tracks and assembling of superstructures superstructures-1 & 3 on temporary piers
- field supervision

CLIENT

Chief Directorate of Road Facilities of Moscow Region

GENERAL CONTRACTOR

JSC USK MOST, LLC Spetsmost

DESIGN PERIOD

2010 - 2012

CONSTRUCTION PERIOD

BRIDGE OVER THE KARAKUM RIVER IN LINE OF NIYAZOV PROSPECT IN THE CITY OF ASHKHABAD



- bridge diagram (42+63+42) m
- bridge length 166 m
- Iimiting dimension: Γ=28 m, (1.0+3x3.5+5.0+3x3.5+1.0) m
- width of sidewalks on each side 1.0 m
- 3 traffic lanes in one direction with the width of 3.5 m, 3 traffic lanes in the other direction, dividing strip of the width of 5 m
- total weight of steel structures of superstructure 850.7 tonnes
- total weight of reinforced concrete of superstructure 2,680.8 tonnes
- total weight of reinforced concrete of foundations and bodies of piers – 18,958.8 tonnes

Retaining walls:

 total weight of reinforced concrete of foundations and retaining walls – 4,747.5 tonnes

LIST OF WORKS

- general design
- development of architectural solutions

Working Documentation Stage:

- development of technology of construction
- development of SAC&D
- development of Method Statement
- development of Construction Method Statement
- fulfillment of calculations with development
- of specific technical specifications for design
- of seismic structures
- technical inspection
- participation in tests

- field supervision
- undergoing of expert examination of Turkmenistana

CLIENT

Directorate for construction of very important objects of Khyakimlik of the city of Ashkhabad

GENERAL CONTRACTOR

SC PO Vozrozhdenie

DESIGN PERIOD

2010 - 2012

CONSTRUCTION PERIOD

BRIDGE OVER THE KARAKUM RIVER ON PK160+50 OF GYAMI, ASHKHABAD



Bridge over the Karakum river on PK160+50 of the ring motor road to the north of the settlement of Gyami.

- bridge diagram 42+63+42 m
- bridge length 177.85 m
- limiting dimension 37.95 m
- 3 traffic lanes in one direction with a width of 3.75 m, 4 traffic lanes in the other direction, dividing strip of the width of 5m
- steel total weight 1291.2 tonnes total weight of reinforced concrete for construction of piers - 6 504.88 tonnes

LIST OF WORKS

- general design
- development of architectural solutions

Working Documentation Stage:

- development of technology of construction
- development of SAC&D
- development of Method Statement
- development of Construction MS
- fulfillment of calculations with development of specific technical specifications for designing of seismic structures
- technical inspection
- participation in tests
- field supervision
- undergoing of expert examination of Turkmenistan

CLIENT

Directorate for construction of very important objects of Khyakimlik of the city of Ashkhabad

GENERAL CONTRACTOR

SC PO Vozrozhdenie

DESIGN PERIOD

2010 - 2011

CONSTRUCTION PERIOD

BERLINSKY BRIDGE, KALININGRAD, RUSSIA





Reconstruction of the bridge over the Staraya Pregolya and Novaya Pregolya Rivers within Southern part of Kaliningrad City Ring Road (Stage II). Construction of new bridge with approaches.

Bridge is located on the intersection of Southern part of Kaliningrad Ring Road between Moskovskiy Prospect and Emelyanova Street of Eastern side of the city. The entire length of the bridge structure is 1,490 m with basic features as follows:

- bridge length 640 m
- approaches length -850 m
- bridge schema:

(3x27.0)+(36.4+64.5+36.4)+3x(3x27.0)+(36.4+64.5+36.4)+(3x27.0) m

- clearance 2x F-13,25 with sidewalks per 1.5 m
- total area of the lower bridge section 10,700 m²
- cast-in-situ RC piers of piled foundation
- composite RC deck structures
- comfortable navigation is being ensured

LIST OF WORKS

Working Documentation Stage:

- general design
- main structures design: piers, decks, retaining walls, etc.

- main approaches arrangement
- development of SAC&D
- launching technology over run of river spans
- technical supervision
- Federal Expertise passing

CLIENT

Direction of Road Sector of Kaliningrad area

GENERAL CONTRACTOR

JSC USK MOST

DESIGN PERIOD

2011 - 2012

CONSTRUCTION PERIOD



BRIDGE OVER THE VOLKHOV RIVER IN THE TOWN OF VELIKY NOVGOROD, RUSSIA





Bridge over the Volkhov River in the town of Veliky Novgorod (Derevyanitsky residential area) located on the section of the road-transport route from the motor road Veliky Novgorod -Khutyn to the road Veliky Novgorod - Luga.

- bridge diagram: 42+6x63+84+99+84+63+84+63 m .
- bridge total length 904 m
- carriageway width 29.0 m
- two traffic lanes on each side of the width of 4 m and 3.5 m
- four safety strips of the width of 1 m
- four one-side barrier railings of the width of 0.5 m
- dividing strip of the width of 0.5 m
- two sidewalks of the width of 3 m
- clear headway of bridge $2x\Gamma 9.5+2x3.0$ m stair approaches of individual design are provided for at the pier 13
- composite reinforced concrete continuous beam superstructures
- total volume of reinforced concrete 33,306 m³
- total weight of steel 6,779 tonnes

Navigable passage provides clearance of the height of 9 m and the width of 90 m in accordance with the technical specifications of the Volga-Baltic Waterway.

LIST OF WORKS

- general design
- development of architectural concept
- design of main structures
- design of lighting
- development of SAC&D
- development of Construction Method Statement
- undergoing of main state expert review

CLIENT

JSC Novgorodavtodor

DESIGN PERIOD

2009 - 2010

CONSTRUCTION PERIOD



BRIDGE OVER THE STARAYA AND NOVAYA PREGOLYA RIVERS IN KALININGRAD CITY, RUSSIA

PROJECT DESCRIPTION

The bridge is an integral part of public roads of the city of Kaliningrad, and provides the exit road of urban and transit transport to the VIA Baltica highway in Lithuania, Poland and Western Europe.

The bridge crossing will connect two administrative districts of the city of Kaliningrad, namely Leningradsky and Moskovsky districts, located in the northern and southern parts of the city and separated by the Novaya and Staraya Pregolya rivers accordingly.

OVERCROSSING OVER MOSKOVSKY PROSPECT (RECONSTRUCTION)

- overcrossing according to scheme 19.05+2x25.0+19.05m
- length 93.7m
- clear headway of bridge Γ 27.5+2x0.75m

BRIDGE ACROSS THE NOVAYA PREGOLYA RIVER (RECONSTRUCTION)

- bridge diagram 33+2x42+34.82 m
- bridge length 151.82 m
- clear headway of bridge Γ 27.5+2x1.5 m
- continuous composite reinforced concrete beam superstructure of 1.85 m in height, consisting of six steel beams of 1.6 m in high in cross-section

LIST OF WORKS

Project Documentation Stage:

- general design
- development of bridge crossing concept

- designing of structures of bridges, overcrossings and flyovers
- development of technology of construction
- development of SAC&D
- undergoing of main state expert review

Work Documentation Stage:

- general design
- design of structures of bridges, overcrossings and flyovers
- design of streets and traffic interchanges
- development of technology of construction
- design of lighting and electric power supply
- design of landscaping
 field supervision

CLIENT

Department of capital construction' municipal state enterprise of the city of Kaliningrad; JSC USK MOST

GENERAL CONTRACTOR

JSC USK MOST, LLC Spetsmost

DESIGN PERIOD

2007 - 2011

CONSTRUCTION PERIOD



BRIDGE ACROSS THE YAGORBA RIVER IN THE CITY OF CHEREPOVETS

PROJECT DESCRIPTION

Reconstruction of the existing bridge. Bridge across the Yagorba River connects the Zarechinsky District with the city center.

OLD BRIDGE

- one traffic lane for motor-vehicle transport
- tram tracks at one level with asphalt covering carriageway total width 13.5 m
- navigable span 20 m

NEW BRIDGE

- four traffic lanes in each direction
- elevated tram tracks allocated out of the total traffic flow
- carriageway width 38.5 m
- wide sidewalks
- navigable span 40 m
- underbridge clearance 6.2 m

LIST OF WORKS

Project & Working Documentation Stage:

- designing of structures of bridge crossing
- development of technologies of reconstruction of the old bridge without interruption of traffic flow and separation of utilities
- development of SAC&D
- development of Construction MS

- reconstruction of adjacent embankment
- field supervision
- undergoing of main state expert review

CLIENT

Department of Capital Construction of the city of Cherepovets

GENERAL CONTRACTOR

JSC Mostostroy 6 Mostootryad 61

DESIGN PERIOD

2007 - 2009

CONSTRUCTION PERIOD





Reconstruction of the bridge crossing over the Suda River on the Vologda - Novaya Ladoga highway 148+300 km in the Cherepovets District of the Vologda Region. Reconstruction of the bridge with broadening of the limiting dimension to Γ -10+2x1.5 m, with replacement of the carriageway precast concrete slabs with the monolithic one with arrangement of strengthening of the superstructure, with rearrangement of the piers. Girder bridge with continuous superstructure.

- bridge diagram: 63,3x3 m
- bridge length 200.55 m
- width of traffic lane carriageway 3.75 m
- number of lanes 2
- design loads A11, HK-80
- road category II

LIST OF WORKS

- general design
- development of engineering project of replacement of bridge superstructures and bearings
- development of working documentation of reconstruction
- development of SAC&D
- development of Method Statement
- field supervision

CLIENT

LLC BSK Vostok

DESIGN PERIOD

2005 - 2006

CONSTRUCTION PERIOD

VOLOGDA OBLAST

2007 - 2008



BRIDGE ACROSS THE URAL RIVER IN MAGNITOGORSK, RUSSIA

PROJECT DESCRIPTION

Fifth bridge over the Ural River from Kalmykova St. to Chkalova St. within the city of Magnitogorsk. Urban bridge provided the convenient vehicle access from residential areas on the right bank side of the city to special economic zone – Magnitogorsk Iron and Steel Works, LLC on the left bank of the

Ural River, as well as bypassing the inhabited locality with the exit to the Ring Road. Starting point of the route is located at the intersection of Truda St. and Kalmykova St. on the right bank of the Ural River. Final point of the route is located at the intersection of Chkalova St. and Shota Rustaveli St. on the left bank of the Ural River.

- schema: 63.0+12x84.0+63.0+42 m
- length 1 188 m
- width 42.7 m
- 4 lanes per 3.75 m
- area arranged for the future tram tracks
- steel weight 13,563 tonnes
- concrete weight 44 214 m³
- area 50 717 m²

LIST OF WORKS

Project Documentation Stage:

- general design
- design of basic structures (bridges, overpasses, traffic interchanges)

- architectural solutions development
- design of motor road
- development of construction technology
- financial estimates
- Federal Expertise passing

Working Documentation Stage:

- general design
- design of basic structures
- development of SAC&D
- design of Construction Method Statement
- removal of utilities
- financial estimates

CLIENT

Magnitogorskinveststroy Municipal Institution, Municipal Entity, Magnitogorsk Urban District of Chelyabinsk Region

DESIGN PERIOD

2007 - 2008

CONSTRUCTION PERIOD





BRIDGE OVER THE **VOLKHOV RIVER AT THE APPROACH TO THE TOWN OF KIRISHI**

PROJECT DESCRIPTION

The bridge crossing, as part of the highway of citywide importance, provides transport communication of the town of Kirishi with Zuyevo - Novaya Ladoga highway, and with a system of regional motor roads via it.

The bridge is located in the western part of the town of Kirishy by 23 m downstream from the axis of the existing

motor road bridge over the Volkhov River. The bridge over the Volkhov River consists of as follows:

- bridge diagram: 66+84+124+84+66 m
- bridge total length 1486.8 m
- composite reinforced concrete continuous superstructures
- bridge width 15.25 m

LIST OF WORKS

Project Documentation Stage:

general design

- development of road project
- design of main structures
- development of technology of construction
- development of SAC&D
- development of construction organization
- project of bridge
- development of cost estimate documentation
- undergoing of main state expert review

CLIENT

State Institution of the Leningrad Region Department of automobile roads of the Leningrad Region

DESIGN PERIOD



BRIDGE NAMED IN THE HONOUR OF **800 TH ANNIVERSARY OF VOLOGDA** ACROSS THE VOLOGDA RIVER





Reconstruction of the bridge named in the honour of 800 th anniversary of Vologda across the Vologda River. The bridge is located in the central part of the city of Vologda.

- bridge diagram: 49.0+73.5+49.0 m
- bridge total length 220 m
- limiting dimensions Γ16+2 sidewalks of 2.25 m

LIST OF WORKS

- development of project of reconstruction the existing bridge
- fulfillment of calculations
- development of working documentation of superstructure

- development of technology of construction
- development of SAC&D
- development of Method Statement
- technical supervision
- field supervision

CLIENT

Mostootryad 61, (LLC Stroyinvest)

GENERAL CONTRACTOR

Mostootryad 61

DESIGN PERIOD

2003

CONSTRUCTION PERIOD

BRIDGE OVER KOLA BAY IN THE CITY OF MURMANSK



OMURMANSK OBLAST

PROJECT DESCRIPTION

The bridge over Kola Bay is the main point, providing automobile communication of Murmansk with the western regions of Murmansk Region, as well as with the nearest neighbors of Murmansk Region: Finland, Sweden and Norway.

The bridge is one of the longest bridges in Russia and one of the longest bridges constructed beyond the Arctic Circle. The bridge is also unique in terms of difficulty of construction: unreliable bottom of the Bay, this is why massive bridge piers that were driven into the soil to a depth of 70 m had to be made, plus constant flowing tides and falling tides when the water level in the Bay rises and falls by 4m per day.

The bridge crossing includes the following facilities:

- overcrossing on the left-bank junction according to the scheme: 5x21 m
- left-bank flyover according to the scheme: 22.515+21.05+21.37+63.68 m
- bridge itself according to the scheme: 105.0+6x126.0+105.0 m
- right-bank flyover according to the scheme: 63.45+5x63.0+63.45 m
- railway overcrossing according to the scheme: 2x24.0+12.0 m
- full length of bridge crossing above-water part is about 1.7 km
- bridge total length 2.5 km

LIST OF WORKS

- superstructure structural design
- development of SAC&D for construction of piers and superstructure
- development of Method Statement
- design of technology of construction
- field supervision
- undergoing of main state expert review

CLIENT

Murmanskavtodor, JSC Dorproekt

GENERAL CONTRACTOR

JSC Mostootryad 9

CONSTRUCTION PERIOD

1992 - 1999

CONSTRUCTION PERIOD

BRIDGE OVER THE SHEKSNA RIVER **NEAR THE VILLAGE OF IVANOV BOR**





The bridge is located on the highway connecting the city of Cherepovets with Vologda-Povenets highway. The bridge is a key link in Vologda- Karelia transport corridor.

- continuous beam superstructure according to the scheme: 89.25+147.0+89.25 m
- bridge crossing total length 340 m
- main span length 147 m

Launching of the superstructure was carried out without temporary piers in the main span, with the use of auxiliary launching nose installed on the bank that made it possible not to degrade the regime of navigation during construction.

LIST OF WORKS

Working documentation Stage:

- superstructure structural design
- development of SAC&D
- development of Method Statement

- field supervision
- undergoing of main state expert review

CLIENT

Branch of JSC Mostostroy 6 Mostootryad 61, Vologda

DESIGN PERIOD

2000 - 2001

CONSTRUCTION PERIOD

BRIDGE OVER THE **MALAYA SEVERNAYA DVINA** RIVER NEAR THE TOWN OF **KOTLAS**



The motorway bridge over the Malaya Severnaya Dvina River in the town of Kotlas, one of the largest bridge crossings in the North-West of Russia, with the commissioning of which a through passage on the Northern Corridor from Finland to the Ural is opened. Total length of bridge crossing is 7 km includes the bridge over the Malaya Severnaya Dvina River.

- bridge diagram:
- 18+(4x63)+(4x63)+(84+2x105+84)+63+2x21+5x24+3x33+18 m 18 m, 24 m and 33 m - reinforced concrete superstructures
- 63 m, 84 m, 105 m composite reinforced concrete superstructures
- bridge total length 1 251.6 m
- limiting dimension 11.5+2x1.5 m
- across: reinforced concrete superstructures 6 beams
- composite reinforced concrete superstructures 2 main beams with a web height of 3.6 m for the superstructures L=4x63 m and (84+2x105+84) and of 3.16 m
- distance between the main beams 7.6 m, combined with the precast reinforced concrete slab at the top

LIST OF WORKS

- feasibility study design section of general scheme of construction of piers and installation of superstructures
- development of Construction Method Statement
- development of SAC&D
- development of Method Statement for construction of piers and installation of superstructures

- calculation of superstructure for loads during launching, determination of deflections
- field supervision over construction of piers and installation of superstructures

CLIENT

Arkhangelskavtodor

GENERAL CONTRACTOR

Mostostroitelny Trest 6

Mostootryad 9

DESIGN PERIOD

1987 - 1992

CONSTRUCTION PERIOD

BRIDGE CROSSING OVER THE SEVERSKY DONETS IN THE TOWN OF KAMENSK-SHAKHTINSKY

PROJECT DESCRIPTION

Motorway bridge crossing over Seversky Donets in the town of Kamensk - Shakhtinsky of Rostov Region, which provides a double-lane vehicular traffic towards Rostov-on-Don – Moscow. At the first stage of reconstruction, the existing bridge with a limiting dimension Γ-8, located 20 m from the new bridge axis, was preserved for reverse direction of movement. The existing bridge was built in 1966 and was thoroughly repaired in 1999, and this provided the possibility of its use at the first stage of reconstruction of the bridge.

- continuous composite reinforced concrete superstructure with a roadway above
- bridge diagram 55.0+3x88.0+55.0 m
- bridge length 387 m
- clear headway of bridge F-11.5, with a sidewalk of the width of 1.5 m on one side and an operating aisle of the width of 0.75 m on the other side
- total weight of steel 1500 tonnes
- total weight of reinforced concrete 5000 m³
- bridge piers are of 20 m in high of cast-in-place
- and precast construction

LIST OF WORKS

- development of SAC&D
- development of Method Statement for construction of piers and launching of bridge

CLIENT

Sevkavuprdor

GENERAL CONTRACTOR

Rostovavtomost

DESIGN PERIOD

1999

CONSTRUCTION PERIOD

2002


BRIDGE ACROSS THE **MOSKVA** RIVER NEAR THE VILLAGE OF **SPAS**

RECONSTRUCTION

PROJECT DESCRIPTION

- bridge diagram: (54+99+54) m
- bridge total length: 217.9 m
- limiting dimension: Γ (2000+3750+750+3750+2000) = 2 sidewalks per 0.75 m
- carriageway total width 23.5 m
- bridge total width 26.9 m
- cross section: two steel box girders of 3 176 mm in height, the distance along the axes of the webs is 1 920 mm, the distance between the axes of the box girders is 12 220 mm, combined with an orthotropic carriageway slab on the top
- total weight of superstructure steel 2 040 tonnes

LIST OF WORKS

- development of SAC&D working documentation
- development of Method Statement for installation of superstructure and construction of piers
- field supervision

CLIENT

Mostostroitelny Trest 6

CONTRACTOR

Mostostroitelny Trest 6, Mostootryad 37

DESIGN PERIOD

1995 - 1997

CONSTRUCTION PERIOD

1997



OUR EXPERTISE







- highway bridges
- railway bridges
- viaducts & flyovers . combined bridges

.

- footbridges
- highways & streets 🔳 transportation tunnels

road interchanges

- underground structures
- embankments & mooring berths
- retaining walls
- reinforced mounds
- buildings & structures of different heights
- sophisticated floors of buildings and structures
- foundations in complex environment status

FULFILLMENT

- general design
- sophisticated engineering analysis
- aerodynamic analysis
- financial estimates completion
- engineering supervision
- protection of intellectual property
- engineering geodetic, geological, meteorological, environment survey
- economic survey
- implementation of research on the construction, repair and maintenance of highways
- design and survey works in concerning of reconstruction and maintenance of any engineering networks and communications
- transportation status modeling
- optimization of public passenger transportation route networks
- macroeconomic analysis for large interregional transport projects
- technological and price audit of DD
- estimation of capital and operating costs for transport facilities
- diagnostics and assessment of the technical condition of roads as well as artificial structures
- certification and inventory of highways
- planning and distribution of needed materials, technical and financial costs for the repair and maintenance of motorways by means of cutting edge automated customized software systems

DEVELOPMENT

- architectural concepts of construction and improvement of embankments, industrial and residential buildings, sports, scientific, concert complexes;
- construction technology of bridge crossings and transportation structures
- projects regarding special auxiliary construction and devices (SAC&D)
- method statements (MS)
- construction method statements (CMS)
- projects for structural renovation, bridge maintenance and transport structures
- traffic management projects
- road maintenance projects
- design of monitoring systems for civil engineering structures
- technical and economic feasibility study
- design and proof of nuclear defense measures
- measures relating environment safety
- measures regarding fire safety
- measures concerning civil defense in case of force majeure
- measures regarding transportation safety
- measures to improve road safety
- strategies, concepts and programs for the development of transportation infrastructure
- integrated traffic management schemes
- concepts of toll collection system for toll roads and development of tariff policies in transport
- financial and economic models

PREPARATION

- tender documentation
- methodological guidelines, recommendations, regulatory and technical documentation
- technological solutions for the protection of nuclear and energy facilities























GPSM.RU

 \bigotimes

9

OFFICE@SPB.GPSM.RU

+7 812 498 08 14