

Zeitschrift: IABSE structures = Constructions AIPC = IVBH Bauwerke
Band: 2 (1978)
Heft: C-4: Structures in the USSR

Artikel: Bridge over the river Dnjepr in Kiev
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DOI: <https://doi.org/10.5169/seals-15094>

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1. Bridge over the River Dnjepir in Kiev

Designer: "SOJUZDORPROJECT" Institute, Kiev Branch
 Builder: Bridge Constructing Detachment No. 2 of "Mostostroj" No. 1

Bridge length: 816.2 m
 Fairway arch length: 300 m
 Width between bridge railing: 31.4 m
 Number of lanes: 6
 Material of stiffening girder: Grade C-40 steel
 Loads: HA-10, HK-10, communication intensity 8.5 ton/m
 Period of construction: 1971 - 1976

The nonnavigable part of the river is spanned with unsplit steel - concrete bridge beam. The navigable part is covered with one-tower bracing cable-girder suspended bridge truss having fan-shaped double plane bracing cable system.

The stiffening girder has three lengthwise movable rests on bridge tower and on intermediate piers and is rigidly fixed on land pier. Bridge tower is A-shaped hollow ferro-concrete frame with separate pier footings for each "leg". At the level of wells top the legs are coupled with prereinforced

ferroconcrete collar beam. Steel stiffening girder 3.6 m high, in cross-section consists of two boxes connected by orthotropic slab of bridge floor and by coupled diaphragm installed at every 12.5 m. Longitudinal ribs of orthotropic slab are made of steel strap. Bridge beam is assembled of flat prefabricated members. Erection joints both welded and frictional have high-strength bolts.

Bracing cables are formed of 91 parallel zinc-plated wire 5 mm dia. Each bracing cable consists of 20 to 40 ropes. Ropes of bed and bank bracing cable terminate at bridge tower. Ends of oncoming branches in common support knots. Ropes fixture in stiffening girder is executed by means of metallic transverse member-stop. At land piers the ropes are passed through set of steel pipes inserted while concreting.

Bearings of bridge are made of rubber-fluoroplastics. Deformation joint of a recoil type between bracing cable part and platform part allows mutual displacement of butt-ends up to 760 mm.

Erection of the stiffening girder is executed by means of longitudinal protrusion with conveyer-rear assembly. Ropes are pulled-through without building of planked footway. Covering of bracing cable supported part of the bridge consists of two layers of polymer-asphalt concrete.

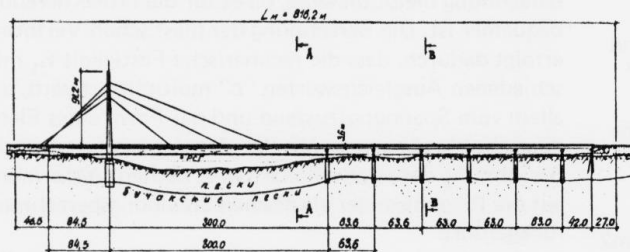


Fig. 1 Bridge Scheme

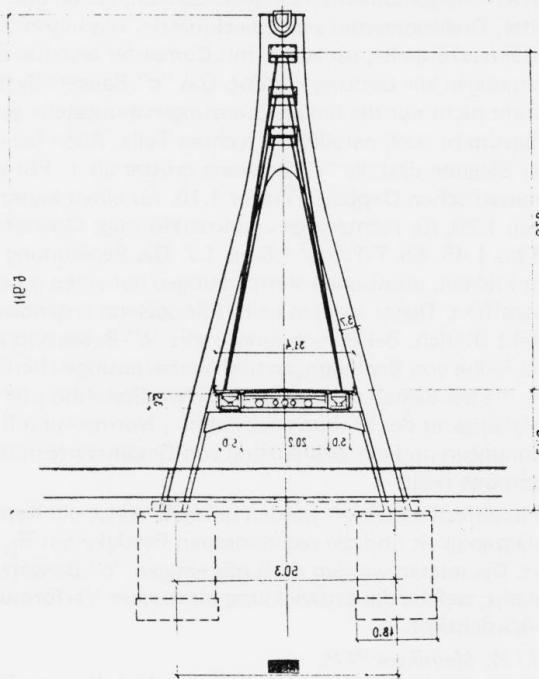


Fig. 2 View at A-A

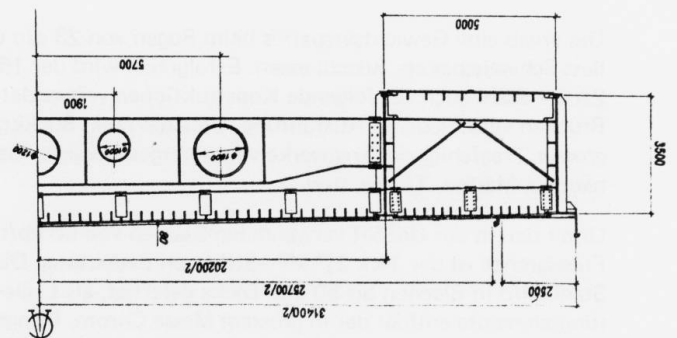


Fig. 3 Cross-section of bracing cable support span

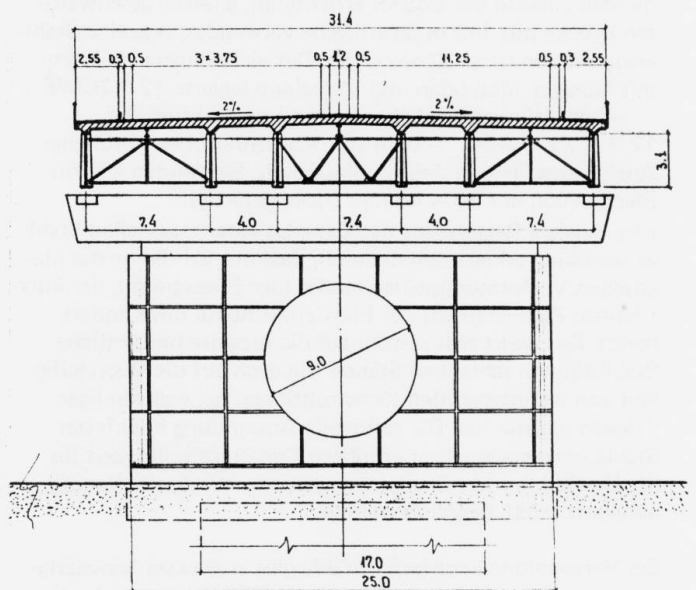


Fig. 4 View at B-B



Fig. 5 General view of the bridge over the river Dnjepr in Kiev



Fig. 6 The traffic on the bridge



Fig. 7 Bridge facade