

Zeitschrift: IABSE reports = Rapports AIPC = IVBH Berichte
Band: 64 (1991)

Artikel: Bridge superstructure with environmental protection
Autor: Nazarova, R.P. / Razhberg, S.M.
DOI: <https://doi.org/10.5169/seals-49303>

Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften auf E-Periodica. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. Das Veröffentlichen von Bildern in Print- und Online-Publikationen sowie auf Social Media-Kanälen oder Webseiten ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. [Mehr erfahren](#)

Conditions d'utilisation

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. La reproduction d'images dans des publications imprimées ou en ligne ainsi que sur des canaux de médias sociaux ou des sites web n'est autorisée qu'avec l'accord préalable des détenteurs des droits. [En savoir plus](#)

Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. Publishing images in print and online publications, as well as on social media channels or websites, is only permitted with the prior consent of the rights holders. [Find out more](#)

Download PDF: 10.08.2025

ETH-Bibliothek Zürich, E-Periodica, <https://www.e-periodica.ch>



Bridge Superstructure with Environmental Protection

Structure de pont en vue d'une protection contre les agressions du climat

U-Bahn-Brücke mit Schutz gegen klimatische Einflüsse

R.P. NAZAROVA

Civil Engineer
Giprotransmost
Moscow, USSR

S.M. RAZHBERG

Civil Engineer
Giprotransmost
Moscow, USSR

1. INTRODUCTION

Under the USSR climatic conditions for reliable operation of the underground railway the trains leaving the tunnel and running along bridges and scaffolds require environmental protection. At the same time, considering location of the metro bridges under the city conditions should meet increased architectural requirements.

The specified work seeks to solve the problem.

2. SUPERSTRUCTURE

For the bridge passage across the Oka river as part of the second phase of the underground railway construction in the town of Gorky, a box-type superstructure allowing cantilever traffic and arrangement of the light glassed gallery was suggested.

The bearing box with a top and bottom ribbed plates have the diagram 66+4*115+2*135+99 m.

Steel cantilever-cross beams bearing the "Double-deck" orthotropic plates of the underground trains are attached symmetrically on both sides to the bottom chord and box walls. The horizontal sheets of the orthotropic plates are joined with longitudinal horizontal ribs of the box walls. Thus, the plates are engaged in a combined operation with the bearing box of the structure. The double T-section cantilever cross beams are attached to the bearing box by passing the cantilever top chord through special cuts in the box walls and connecting it to the chord of the lower rid plate transverse beam. The cantilever walls are welded (or fixed by high strength bolts) to the box wall. The bottom chord is joined with the box lower plate (Fig.1).

The closed glassed galleries have the Г-form frames and light-weight fencing structures (roof and wall with windows). The bearing frames of welded I-beams are hinged on the top chord of the cantilever transverse beam and on the box walls. The above fixing of frames increases reliability of the gallery operation at dynamic loads. The longitudinal ties interconnect the frames.

The galleries are erected in 10 m sections, fully shore assembled and delivered to the installation site on flat cars equipped with special girders. The intersection joints are done from especially manufactured scaffold girders travelling along the chord of the superstructure box.

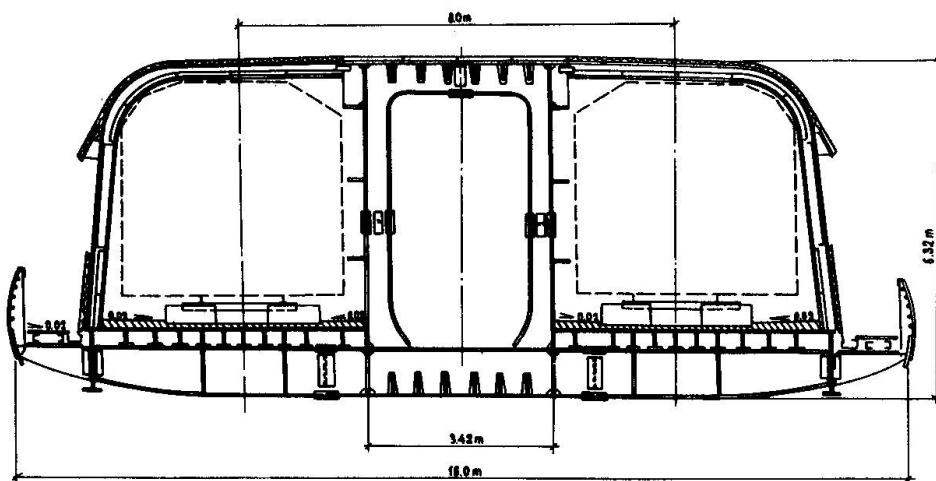


Fig. 1 Superstructure cross-section

The specified design of the superstructure has great potentialities in designing the structure architectural appearance and may be recommended for applicaton on other objects.

Leere Seite
Blank page
Page vide