



**STUDY OF OPTIONS FOR THE DESIGN OF THE ROOF OF THE 2,000-SEAT ROWING  
CHANNEL TRIBUTARY**

Xolqo 'ziyeva Madina Eshpo 'lat qizi

Master's Degree Student's Samarkand State Architecture and Civil Engineering Institute  
Named after Mirzo Ulugbek., Uzbekistan, Samarkand

Jamolova Mohigul Xudoyberdi qizi

Master's Degree Student's Samarkand State Architecture and Civil Engineering Institute  
Named after Mirzo Ulugbek., Uzbekistan, Samarkand.

Boqiyev Sulaymon Vahobovich

Associate Professor of Samarkand State Architecture and Civil Engineering Institute  
Named after Mirzo Ulugbek., Uzbekistan, Samarkand.

**Abstract**

Where the 2,000-seat grandstand of the rowing canal is commonly utilized in roofing, the essay advises developing and comparing arches as an alternative to trusses. The arches' efficiency over the trusses is explicitly stated, as is the fact that their belts are directed along a curved line, the tiny amount of stresses generated in the rods, and the fact that they are formed of closed contour profiles. A profile rope with a parallel strap, single-angle truss, for example, is developed and compared to each other. The grandstand is meant to be 24x80 meters in size.

**Keywords:** roof-covering, truss, interval, base, knot, bar, eccentricity, bending moment, share force, axial force, angular, tribune, paddle, arches.

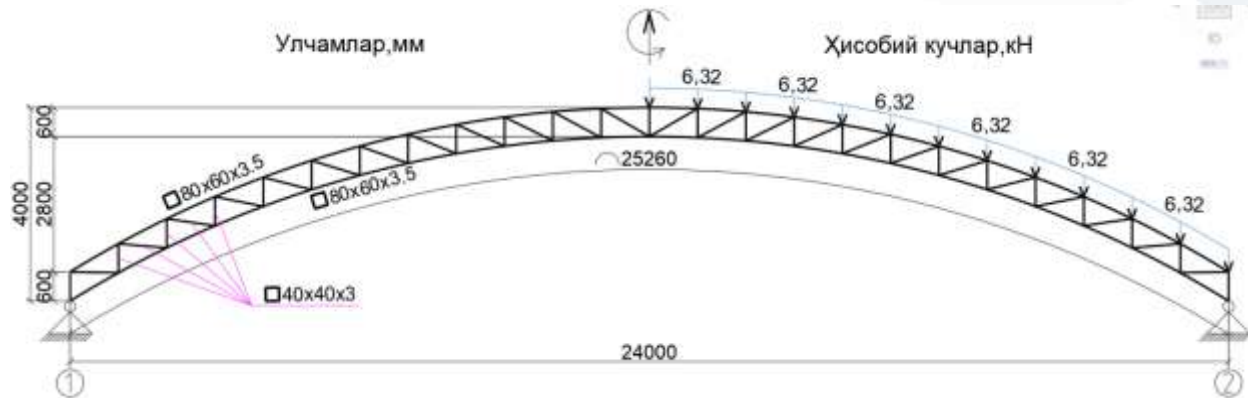
**Introduction**

Various metal trusses and arches are now frequently employed as roof constructions. When creating the roof of the 2000-seat rowing channel grandstand, metal trusses or arches are also appropriate. Both choices were designed in this situation, and the best one was picked. These metrics verify the design's cost-effectiveness.

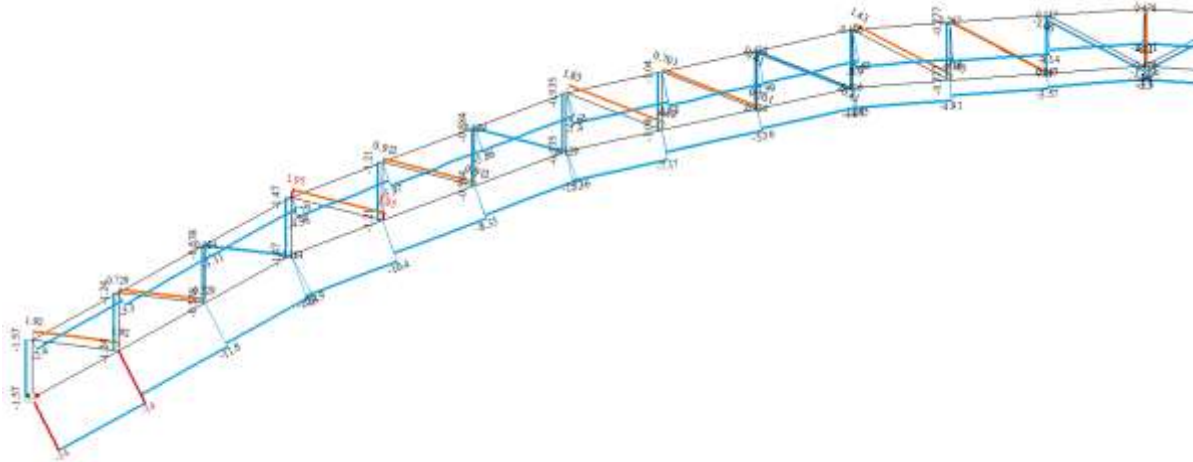
**Main Part**

The key difficulty in the design of tribune roofs is the proper selection of their structural scheme and cross-sectional shapes in order to design steel usage as efficiently as possible. A truss with a span of 24 m and a rear arch were contrasted in the ideal design of the roof covering for the 2000-seat rowing canal tribune. The seats are arranged in 14 rows for a total distance of 80 meters. Every 8 meters, a 1 meter passage was left.





a-geometric dimensions, mmb-stresses, кН  
Figure 2. Computational scheme of profiled arch.





arches to cover a 24x80 m area is effective. The primary computations were done with the Lira-SAPR-2017 program, and the results are provided in tables.

### **References**

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