

**STABILITY AND STABILITY CALCULATION OF RAILWAY REINFORCED CONCRETE
BRIDGE INTERMEDIATE SUPPORT LOCATED AT ANDIJON - ASAKA PEREGON PK 123+456**

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Annotation: *In this article, the calculation of durability and priority check of the 1st intermediate support of the 9.85+23.6+9.85m railway reinforced concrete bridge located in PK 123+456 of Andijan-Asaka peregona is considered.*

Key words: *A bridge, an intermediate support, strength, superiority, endurance*

**УСТОЙЧИВОСТЬ И РАСЧЕТ НА УСТОЙЧИВОСТЬ ПРОМЕЖУТОЧНОЙ ОПОРЫ
ЖЕЛЕЗНОБЕТОННОГО ЖЕЛЕЗНОДОРОЖНОГО МОСТА, РАСПОЛОЖЕННОЙ НА
АНДИЖОН - АСАКА ПЕРЕГОН ПК 123+456**

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Аннотация: *В данной статье рассмотрен расчет прочности и первоочередная проверка 1-й промежуточной опоры железнобетонного моста 9,85+23,6+9,85м, расположенного на ПК 123+456 Андижан-Асакинского перегона.*

Ключевые слова: *Мост, промежуточная опора, сила, превосходство, выносливость*

INTRODUCTION

Today, the main task of the road construction sector, which is directly related to the development of the national economy, is to fundamentally improve the condition of bridge structures on roads and railways and to operate them in accordance with the requirements of the present time. Bridge structures should ensure fast and safe passage of traffic over a water barrier at a specified speed. Also, the constructions of bridge structures (foundations) must accept permanent and temporary loads and transfer them to the foundations. Due to the increase of permanent and temporary loads, uneven sinking of the foundation of the structure, the strength and durability of the bridge supports will decrease from the specified standards. As a result, the reliability of the bridge structure is reduced.

Main part. During the operation of transport facilities (bridges), they are constantly inspected to assess their technical condition. They are current, seasonal, annual,

extraordinary, etc. In this article, we will check the stability and priority of the 1 intermediate support of the 9.85+23.6+9.85m reinforced concrete railway bridge located at PK 123+456 of Andijan-Asaka peregone (fig. 1).

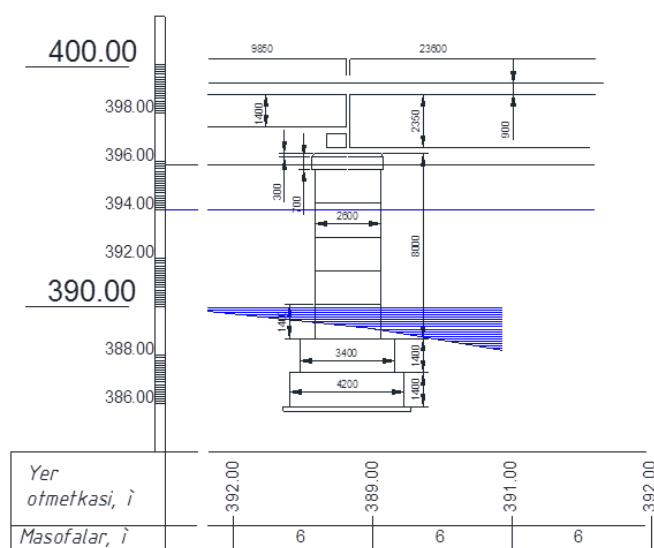


Fig. 1. 9.85+23.6+9.85m railway reinforced concrete bridge intermediate support located at PK 123+456 of Andijan – Asaka peregon

1. Checking the strength of the body of the bridge support

When the height of the intermediate support of the bridge is relatively low, the cooling effect on the strength can be ignored. In such cases, the strength of the non-centrally compacted concrete element is ensured if the following conditions are met.

$$N \leq m_{b9} \cdot R_b \cdot A_{bc},$$

$$6173,01 \leq 0,85 \cdot 20000 \cdot 2,2 = 37400$$

the condition is met

m - coefficient determined from work graphs depending on ξ and α

$$\xi = 4e_{0y} / b_0 + 0,2;$$

$$\xi = 4 \cdot 0,14 / 2,6 + 0,2 = 0,42;$$

$$e_{0y} = M_k / N;$$

$$e_{0y} = 869,97 / 6173,01 = 0,14;$$

$$\alpha = (a_0 - b_0) / r = 2(a_0 - b_0) / b_0$$

$$\alpha = 2 \cdot (3 - 2,6) / 2,6 = 0,31.$$

2. Checking the priority of the base case

For this, the eccentricity of the longitudinal force concentration is determined:

$$e_c = M_y / N + l_0 / 400,$$

$$e_c = 1048,81 / 6173,01 + 16 / 400 = 0,21,$$

$$e_c \leq r \approx b_0/6 ,$$

$$0,21 \leq r \approx 2,6/6 = 0,43$$

the condition is met

Eccentrically prestressed concrete elements should be considered as a priority subject to the following condition:

$$N \leq \gamma \cdot \varphi \cdot R_b \cdot A_{bc} \cdot m_{b9} ,$$

$$6173,01 \leq 1,16 \cdot 0,79 \cdot 20000 \cdot 2,2 \cdot 0,85 = 34273,36$$

the condition is met

Conclusion. The condition of the intermediate support of the 9.85+23.6+9.85m railway reinforced concrete bridge located at PK 123+456 of the Andijan-Asaka peregon is satisfactory in terms of strength and quality.

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