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Title: **DEVELOPMENT AND IMPLEMENTATION OF TECHNOLOGIES FOR THE PRACTICAL IMPLEMENTATION OF THE METHODOLOGY AND TASKS OF VARIANT DESIGN**

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DEVELOPMENT AND IMPLEMENTATION OF TECHNOLOGIES FOR THE PRACTICAL IMPLEMENTATION OF THE METHODOLOGY AND TASKS OF VARIANT DESIGN

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Abstract: The main purpose of writing this article is to elaborate on the fact that the exterior of the bridge connecting Shurchi district with the village of Laylakhona has been severely damaged and to reconstruct it in accordance with the requirements of the current period.

Keywords: Bridge, geology, conductor, structure, material, reinforced concrete

Introduction

I identified the bridge that needed to be designed and, to make sure, inspected the bridge that connects the Stork District of Shurchi District and came up with a number of ideas while doing research on it.

I studied each part of the bridge in 3 steps to learn it perfectly:

Step 1:

The topography of the bridge under study, ie geology;

Hydrology - Low water level (change over 4 seasons)

- When to observe the highest water level and flood flows;

Climatic conditions.

At this stage, the geological environment of the bridge was studied. The soil is fine-grained, there are few fertile rocky parts, the color of the sands is brown. density is average. 20% of the land on which the bridge is built consists of gravel, soil and human waste. In this view, tillage can prevent damage to the bridge by diverting the flow of water, albeit in small amounts, during floods and rains.

The climatic conditions of the area are at normal pressure and the following table shows the change in level in each season:

No.	The hydraulic level of the water	Sathi (m)
1.	Spring	3-3,5
2.	Autumn	2,7-3
3.	Summer	1,5-1
4.	Winter	2,5-2

It is important to study the variability of precipitation in the climate of this area as it should not be exposed to natural currents in any season and should not cause damage during the construction of the bridge.

No	Construcsie name	Quantity	Size
1.	Concrete B22-5	9,24	M2
2.	Drainage layer of gravel-sand mixture	232,8	M ²
3.	To strengthen monolithic concrete slopes	167,7	M ²
4.	BK wheel return structures	8	64,75
5.	For concrete pavement B15H-10 cm	142,40	M ²

6.	Construction of manalytic reinforced concrete parapet L = 15m	67	4
7.	Base device and GPS-10cm at the parking lot	9,30	M ²

The construction materials used for the bridge in the modernization are given in Table 1.2 below. It is obvious that if we spend a total of 19 billion rubles on the construction of the bridge and rebuild it with the same investment, we will lose at least 40 billion dollars.

We also need to look at how the bridge can withstand each season. Only then will our bridge be strong in all respects.

No.	Season	Months, change in precipitation
1.	Spring	Heavy rain in March April rain and weak wind May is hot and sunny
2.	Summer	June is hot, hot July is sunny August is sunny
3.	Autumn	September is sunny October - light and light rain November-light and weak wind
4.	Winter	December-rain turns into snow January is snowy and cold February-snow and ice

We learned that the first phase of our bridge was built in the same direction.

Phase 2.

Obtain the basic dimensions of the designed bridge and study its design requirements.

- Basic dimensions of the bridge;
- Width, height, height and height of its

water level;

- Bridge construction and elements;
- Ideas and ideas on how to modernize the bridge under study.

The main dimensions of the bridge are height, width and length of the piers.

Height- 4,5016m;

Width - length - 12 m

Height above water level is 11,5m. The bridge was built in accordance with the nature and conditions of the area, as a number of structural materials were used in its construction. During the study of this bridge, I also witnessed that it was in need of repair due to the fact that it was built many years ago. It is advisable to redesign the bridge. It is necessary to redesign the bridge in a way that is specific and appropriate to the redesign.

The experiment conducted in Phase 2 led me to conclude that due to the need for repairs, the construction of the foundations should be made of reinforced concrete, and it would be expedient to build water supply structures, otherwise the settlements will be close. the likelihood of devastation in floods is high. It is necessary to make more use of wheel arches and use a structure with railings on the sidewalk.

No.	Object name	Dimensions
1.	The length of the bridge	1570m
2.	Bridge width	2,40m
3.	The height of the bridge	4,50m
4.	Water level elevation	1,3m
5.	The width of the carriageway	0,5m

So, in the 3rd stage of the bridge under study, we will get acquainted with the following,

- Economic efficiency;
- Cost of consumed materials;

The bridge on which the operation is to be carried out must also be used correctly in the

work of the machine, which is carried out in 3 stages during the construction;

1. Organization of temporary exits, installation of construction sites;
2. Establishment of a temporary congress, construction of intermediate supports for construction sites;
3. Concreting of the barrier is carried out on an inventory scale.

I am in favor of modernizing the bridge and reconstructing the bridge, which will have a modern look that meets the requirements of the standard with a longer service life, and will serve to perform a number of tasks, such as improving the road for the public.

For integrated modernization, it is advisable to use a reinforced concrete structure in the first place. The distance between the water level of the bridge and the sand under the bridge has been reduced, and the road from both sides to the bridge has been reduced to two sides. In improving the conditions of participation, if the two sides of the bridge are raised in layers and raised with a rake relative to the high part of the road leading to the bridge, it will correspond to the length of our bridge. It would be great to increase the width of the carriageway and make it easier to travel. It is true that the bridge we are repairing costs a lot of money, but it has all the benefits, taking into account the need to reconstruct the bridge for the health of the population and the appearance of the place.

Let's take a closer look at the engineering geological work of our bridge. At the same time, our bridge differs from city-class bridges in that it is one of the local bridges in general, because there is very little traffic on the road. Given that the mechanical properties of such soils do not transmit moisture much better, it is not a problem to build the foundations and supports of the bridge. In this type of soil, the substances form a complex gypsum bond with each other, and this process prevents water absorption in the water, and as a result of this type of soil is virtually impermeable to moisture, its permeability is not observed.

The main factor in the performance of the mechanical functions of soils of this composition is the strength of the bonding

conditions of the minerals in it. Under geological conditions, we can see that 70% of the soil is composed of a mixture of some gravel, 40% of sand and 10% of rock. Gravel is a solid building material formed by the erosion of rocks. The most suitable raw material for pouring concrete is gravel. Its physical properties prevent water from changing direction and volume.

No.	Location of intermediate dimensions	Dimensions
1.	The highest level of water	3.5m
2.	The lowest level of water	1.2m
3.	The height of the space under the bridge	8.4m
4.	The clearance height of the bridge	3.2m
5.	The total length of the bridge	1570m
6.	The total width of the bridge	2.40m
7.	The total height of the bridge	4.50m

Conclusion

The main purpose of the design and construction of the bridge will be to build a good and long-term efficiency, at least for the convenience and proximity of the population, we will talk about the advantages and benefits of the bridge in the previous stages. I learned a little bit, I think the bridge I learned and laid the groundwork for me to put into practice the skills I learned for myself, first of all I would like to thank our teacher Umid Bekmurodov.

References

1. Salamaxin P. M., Volya O.V., Lukin N.P. and others. "Artificial structures on roads" Parts I-II. M. TRANSPORT. 2007y. (in Russian).
2. Salamaxin, L.V Makovskiy, V.I Popov et al. «Engineering construction in transport construction» I-II book M. TRANSPORT.

- 1997y. (in Russian).
3. Livshchits Ya.D., Onishchenko M.M., Shkuratovskiy A.A. Primery raschëta reinforced concrete bridges. Kiev, Vishcha school, 1986. (in Russian).
 4. A.A. Ishanxodjaev, Sh.Sh. Shojalilov, T.Yu. Radjabov. "Construction of bridges, transport tunnels and artificial structures." Tashkent, "Davr Publishing House", 2012.
 5. A.A. Ishanxodjaev, Sh. Mirxodjaev. "Maintenance and repair of bridges, transport tunnels". Tashkent, "Davr Publishing House", 2012.
 6. A.R. Qodirova, S.I. Kholmukhamedov, Sh.Sh. Shojalilov, T.Yu. Radjabov. "Search and design of artificial structures on highways and airfields." Tashkent, □Davr Publishing House□, 2013.
 7. SHNQ 2.05.03-11 □Bridges and Pipes□;
 8. QMQ 3.06.04-97 □Bridges and Pipes□;
 9. SHNQ 3.06.07-09 □Bridges and pipes. Inspection and testing rules "
 10. MShN 4-2004 "Instructions for the inspection of bridges and pipelines on highways": Tashkent, 2007.
 11. IKN 100-14 "Instructions on the content and current repair of most structures and water pipes on automobile roads", NIAD GAK "Uzavtoyul", T., 2014.
 12. Salixanov S.S. "Design and construction of transport facilities" Tashkent, 2018. Textbook. Komplex Print Publishing House.
 13. T.Yu. Radjabov. Text of lectures on the subject "Fundamentals of design, construction and operation of bridges." Toshkent, 2016, 116bet.ShNQ 2.05.03-12 «Mosty i truby»; Tashkent, 2012. □ 213p.
 14. QMQ 3.06.04-97 □Bridges and Pipes□;
 15. QMQ 2.02.03-98 "Pile foundations"
 16. www.ziyonet.uz;
 17. [Http://www.most-spb.ru](http://www.most-spb.ru)
 18. <http://most.irk.ru>
 19. www.search.re.uz - Information retrieval system of Uzbekistan.