

SIGNIFICANCE OF GEODESIC WORKS IN SEARCH OF ENGINEERING CONSTRUCTIONS.

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Abstract: In this article, special emphasis is placed on the importance of geodetic surveys and measurements in improving the quality of road construction and road development in our republic. At the same time, at the site of geodetic works, it is necessary to start with the creation of a grid-shaped planning basis, reinforced with geodetic marks that determine the position of the structure, and this basis shows the advantages of requiring less labor in the execution of subsequent constructions and measurements and ensuring work with the required accuracy.

Key words: *Engineering exploration works, geodetic grid, height geodetic grid, reference mark, linear structure, topographic image*

Introduction. The development of the modern road network is the first priority in increasing the competitiveness of our country's economy, developing the republic's transport potential, and expanding export opportunities. Over the past years, a number of measures aimed at improving the road transport infrastructure in accordance with international standards, building modern highways, increasing the comfort and safety of road traffic have been implemented.

In our country, the legal framework regulating relations in this field has been created and is constantly being improved. The Law on Motorways is one of them. With this law, the issues of highway management, categories of roads, financing, construction and maintenance were regulated in detail.

A number of decrees and decisions of the head of our state set new tasks and measures. This is important for the further development of the industry. Funding for road construction and repair has been significantly increased. Over the past 5 years, construction, reconstruction and repair of bridges and overpasses have been carried out at the expense of the republican and local budgets. Projects are also being implemented in the field under the terms of public-private partnership.

Over the past years, the attention to issues related to the alignment of highways with the requirements of international standards has been strengthened, a number of standards in the system have been re-developed and implemented in the field. In order to introduce transparency criteria in road construction, the online information platform "Transparent Road" containing information related to the field has been launched. On this platform, an interactive online map of the objects of highway search, construction, reconstruction, and major repair was developed, and it also created an opportunity for citizens to leave comments about the quality of the construction and repair work carried out on the highway section.

The main part. All geodetic works in engineering exploration works are carried out according to the accepted construction norms and rules during the development of project works for the construction of engineering structures. The size and composition of engineering exploration works, image scale and accuracy of measurement are determined according to the exploration program, and are adapted to the nature of the structure to be designed, to the conditions of the place in the project, and to the design stages.

The main task of geodetic research in the design of construction objects is to fully provide the project departments with topographical geodetic information. The collected information is the main factor in the development and evaluation of the quality of the project. Engineering and research works for the purpose of designing facilities are carried out by special research and research and design and special design groups. The composition of engineering-geodetic exploration works consists of the following:

- collection of topographical and geodetic data of the area under construction in the past years and their analysis;
- planning of image acquisition - organization of height geodetic grids;
- 1: 10000 -1:500 scale topographic image acquisition;
- updating the topographical plans obtained in previous years;
- alignment of linear constructions and attachment of alignments in place;
- connecting engineering-geological excavations, geodetic and other points;

- performing geodetic works related to hydrometrological works;
- geodetic works related to dangerous geological processes;
- geodetic works in the design and repair, mapping of existing roads;
- engineering - analysis and reproduction of geodetic materials;

Engineering-geodetic research should provide the topographic-geodetic materials and data needed for the design of construction facilities, as well as other types of (economic, hydrometrological, engineering-geological, etc.) engineering research. In order to perform engineering-geodetic exploration works, a technical assignment must be drawn up, an exploration program must be prepared, calculations and a license for the execution of works must be obtained. The technical assignment for conducting search works is prepared on the customer's side, and all information is provided for the organization and execution of the search, the creation of the search program and report documents. Based on the technical assignment, the program, size, composition, style, technology and sequence of work of the enterprise performing exploration works will be developed. Compatibility of the program with the technical task is agreed with the customer.

The composition and volume of engineering-geodetic exploration works depends not only on the climatic conditions of the planned area and the size of the structure, but also on the stages of the project. The composition of the above-mentioned engineering-geodetic exploration works is the same for all project stages, but it may differ in some cases:

- at the initial stages of the project, engineering and geodetic works are carried out on large areas. This, in turn, leads to the use of aerospace methods and the creation of small-scale topographic plans:

- at each subsequent design stage, using the search materials from the previous stage, the scale of the topographic image increases, and the volume of topographic-geodetic data collected by surface methods also increases;

- at the stage of the design of working documents, exploration works are mainly carried out by surface geodetic methods, and the main axes and elements of the designed structure are determined on the spot and strengthened.

The following works are carried out during the search for linear structures, field exploration works:

- tracking works are carried out and the track is marked and fixed in place;
- highway plan - connected to state geodetic grids by height coordinates:
- along the highway, a topographic image highways direction strip is taken.

Currently, in connection with the transition to the new technology and automated design system in the above-mentioned traditional design, it is necessary to change the technology of engineering-geodetic and other types of exploration works in construction. In particular, the specifics of search works in the design of this system in linear structures include the following. These are extensive search operations to compare the competitive options of the track, increasing the volume of data and extensive use of modern technical tools, field and camera work, increasing and modern. topographic information consists of the use of mathematical and numerical models of the place.

Conclusion. In the search for engineering structures, geodetic work begins with the creation of the basis of geodetic planning in the form of a grid, reinforced with geodetic signs that determine the location of the structure. This basis ensures that work is carried out with the required accuracy and require less labor in the design, execution and measurement of subsequent constructions.

The geodetic planning basis for construction is created based on the state geodetic grids in the area where the construction is being carried out. It takes into account the engineering grids placed for the planned and existing structures and on the construction site, their strength, preservation, geological processes, dynamic and other phenomena. The planning grid on the construction site is used to move the main axes of the structure to the location, and if necessary, to create an external planning grid for taking an executive image. During the construction period, the condition of geodetic planning signs is constantly monitored and re-checked twice a year through geodetic measurements.

During the construction period, planning works are carried out to ensure that the axes and height of the structure are moved to the place according to the accuracy

given in the working document on the geodetic planning grids. Before carrying out the planning work, the supervisor will check the condition of the planning grid marks with re-geodetic measurements. In the construction of tunnels and overpasses, internal planning grids are established and connected to external planning grids. Some parts and elements of engineering structures in the amount of the project when checked by geodetic measurements, it should not exceed limited deviations.

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