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Insights into engineering work for future surveyors.

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Abstract

The article describes the conduct of geodetic work on engineering work by young specialists entering this field, and provides final conclusions and proposals for the work performed.

Key words: geodesy. measure. level theodolite. tacheometer, execution drawing. research.

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Introduction

Organizations performing all geodetic works in our republic are provided with modern geodetic instruments. A clear proof of this is that we use them in the buildings and structures under construction. Geodetic works using modern geodetic instruments are characterized by high accuracy. The reliable and efficient work of young personnel in these geodetic instruments depends on their diligence and perseverance in learning. Nowadays, the subject of geodesy and geodetic surveying is becoming very popular. For this reason, how to carry out geodetic research and measure with equipment is of great interest to future geodesists.

Geodesy is the science of taking the necessary measurements on the earth and describing its image on paper. As a result of the data obtained from geodetic and topographic research, it is used in the creation of accurate maps and plans of the earth's surface, in the process of construction of industrial and civil real estate objects, in the creation of navigation systems and in many other engineering fields.

Geodetic surveying is carried out, using the values of the obtained results to determine the exact values of the distance between two points, to determine their location relative to each other, to correctly determine the administrative boundaries between settlements, districts and regions, and where the state borders between countries cross. possible Specialists who perform such work are geodesists.

The main task of a geodetic specialist is to accurately and correctly calculate the coordinates of the characteristic points of the earth's relief. Specialists in this field carry out geodetic survey or topographic survey depending on their tasks. After the survey, they process the measurement results, analyze the obtained data and create the necessary topographic plan or maps.

During the construction of engineering structures, geodetic measurement works, called executive survey, are carried out to ensure their absolute and relative height, as well as the planned position in relation to the constructions being built. It includes those parts and elements of engineering structures, the location of which mainly serves to determine the stability and strength of the entire engineering structure.

The purpose of the executive survey in engineering works is to determine whether the project is in accordance with nature and to identify and eliminate all deviations from the project implemented during the construction process. This is achieved by determining the actual coordinates of the characteristic points of the constructed engineering structures.

It is the execution request that allows you to check the correctness of the completed engineering work in accordance with the project and confirms the compliance of the constructed building or structure with the construction standards and regulations (QMQ).

The executive request allows you to control the construction results and identify all deviations from the project. For this, at the same time as the survey, the expert surveyor keeps a log of deviations from

the established project, in which the deviations of the constructed building or structure from the project are recorded. If there is a deviation from the project, this deviation is evaluated as non-conformity with the project.

Documentary material obtained in the process of geodetic measurement works is used in the design of facades and windows, elements of buildings, control of accuracy and calculation of the volume of completed construction works. Executive schemes are drawn up based on the requirements of current regulatory documents, as well as taking into account the requirements of state control bodies, the field control of the design organization, as well as the customer's technical control. The rules for the design of executive drawings are reflected in GOST and QMQ.

Engineering-geodetic research is a type of geodetic work, in which the study of the terrain in the desired area, existing construction sites, road construction and other planning elements is carried out. The main purpose of the research is to obtain topographical photography materials. Topographic and geodetic works, photographs of various scales, update and creation of topographic maps, photography, planning of above-ground and underground structures.

The following tools and equipment are widely used to perform these works.

1) Tacheometer is a universal device for geodetic work. It measures length, height difference, horizontal and vertical angles.

2) Level - determines the low height of points on the surface of the earth.

3) Laser roulette - determines the distance between two points.

4) GPS - determines the position of points on the earth through satellites.

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