



## Detail Exhibit in Quarries

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### ABSTRACT

The details are taken from the points of the network. The location and working area of the upper and lower limits of the level in Syomka, drainage devices, cutting trenches, underground pits intended for blasting, geological disturbances, sampling sites in geological prospecting pits, transport routes and tracks, etc. The location of buildings, buildings, etc. is determined.

### Keywords:

Symka, step, lower limits, working area, drainage devices, cutting trenches, blasting, underground seams, geological disturbances, transport routes.

The main purpose of conducting a detailed survey is to create a relatively complete graphic image, taking into account the mining, geological exploration and construction works carried out in the quarry. The drawing of the above objects should make it possible to determine their position on the plan scale with an average error of 0.5 mm. The mean square error of determining the heights of points should not exceed 0.2 meters. Depending on the conditions of the excavation work (depth, shape and size of the quarry) and to ensure the necessary accuracy, tachymetric, mensular, ordinate, stereophotogrammetric methods are used in the detailed drawing. The periods of carrying out syomka depend on the nature of the mine and working conditions. In most cases, an additional inspection is performed at the end of every month or every December. Detail

surveying in quarries is mainly done by the tacheometric method, and its disadvantage is as follows: it takes a lot of time to calculate the relative height, it is not possible to pour the reykas everywhere, to create an image of the object that is the survey during the camera calculation. To reduce these disadvantages, it is necessary to use tacheometer machines and graphopostroitels. If it is necessary to carry out fencing in a large area at the same time, if the weather is good, then the manzula fencing together with auto-reduction kipregel KB-1 is the most effective. Tacheometric measurement in quarries is performed in the following order. A theodolite is installed at the point of the Syomka network. A ruler is installed at characteristic points of the step, and horizontal, vertical angles and distances are measured. The distance from the instrument to the rail should

be 300 meters at 1:5000 scale, 200 meters at 1:2000 scale and 150 meters at 1:1000 scale. Rail points (pickets) are installed at all characteristic points, the distance between them should not be less than 30 meters at a scale of 1:2000, 20 meters at 1:1000, 40 and 30 meters if the contour is close to a straight line it can. Tacheometric road lengths are measured using a tape measure or a tape measure. In addition to the measurement results, an outline is also drawn in the journal during the measurement period, which in turn allows the result to be accurately recorded on the plan. The results of the camera calculations are recorded on the plan using a conical protractor with an accuracy of 0.5 mm. Several methods can be used to determine excavation volumes from a plan: vertical sections, horizontal sections, pallet and non-parallel section methods. By the method of vertical sections, the volume is determined as follows:

$$V = \sum_{i=1}^n V_i; \quad V_i = \frac{S_i + S_{i+1}}{2} \times a_i;$$

here  $S_i$  - vertical sections,  $a_i$  - distance between cuts.

If the cuts are from each other 40% if it differs more than:

$$V_i = \frac{S_i + S_{i+1} + \sqrt{S_i + S_{i+1}}}{3} \times a_i;$$

For the outermost blocks:  $V_i = \frac{S_{i+1}}{3} \times a_{i+1};$

It is determined in the same way in horizontal sections, only the height of the sections is poured instead of the distance.

## Conclusion

In quarries, it is considered appropriate to carry out the measurement in electronic tachymeters. As a result of the detailed survey, maps of a certain scale are drawn up, measurement works are carried out with the help of constructed plans and maps. It makes it possible to carry out surveying in quarries, calculate the amount of mineral extracted from the quarry area, and organize the mining system correctly. The outline of mineral deposits is shown on the plans.

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