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THE INTERSECTION OF THE SURFACE OF THE ENGINEERING BUILDING WITH THE SURFACE OF THE EARTH

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Abstract:
Approach with the help of examples to construct cross-sectional lines of surfaces of projection (engineering structures) given by numbers and the construction of profile edges.

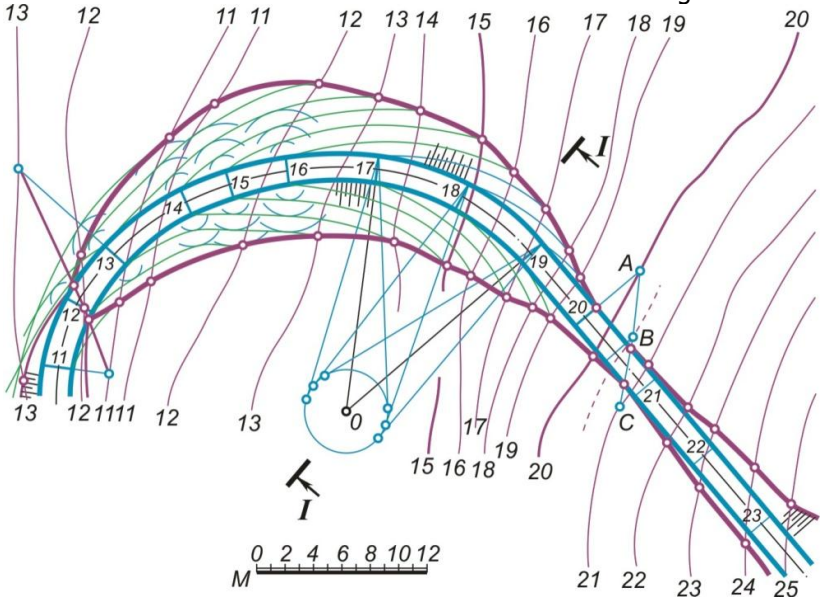
Keywords: Topographic surface, depth, deposition, slope, horizontal, profile

1.INTRODUCTION

The construction is carried out at an accelerated pace. It is no secret to anyone that even the demand for fast and high – quality roads connecting the construction sites with each other remains high. It is known to us that it takes much more effort to eliminate problems with construction and find an acceptable option for it. Below we will consider an example of a joint with the construction of a road and the passage of engineering structures in it. As an example, we will consider an example of the intersection of the slope of the road slope with the topographic (earth) surface. The road is given with its projection and horizons. The topographic surface has a smooth decrease (figure 24), depending on 13-horizontal from the 1-picture.

2.MAIN PART

The range of the road axis does not change between 22 - and 16-horizons, so in this part, the road has the same slope. The interval varies between 16-and 11-horizons. The road here has a variable slope. To comfort the peculiarity of the change of the slope of the road, we make a curved profile on its axis (Figure 2). The profile shows not only the cross-section of the road but also the cross-section of the topographic surface. The vertical scale was made twice as large as the scale of the drawing done in Figure 1, and the horizontal scale was made twice as small, which made it possible to reduce the size of the drawing. According to the longitudinal profile of the road and the land area, it is possible to draw an idea of where the spill and depth zones are located and their height or depth. In addition to the longitudinal profile, cross-profiles are usually made in the direction perpendicular to the axis of the road (I – I profile in Figure 3). Longitudinal and the required amount of cross-profiles provides a sufficient level of comfort about the characteristics of the earthwork that must be completed in the construction of the road. The limit of Land Works is established according to the plan of the road. To do this, it is necessary to knit the slopes of the shed and depth, and the intersection line with the surface of their ground level.



1-figure.

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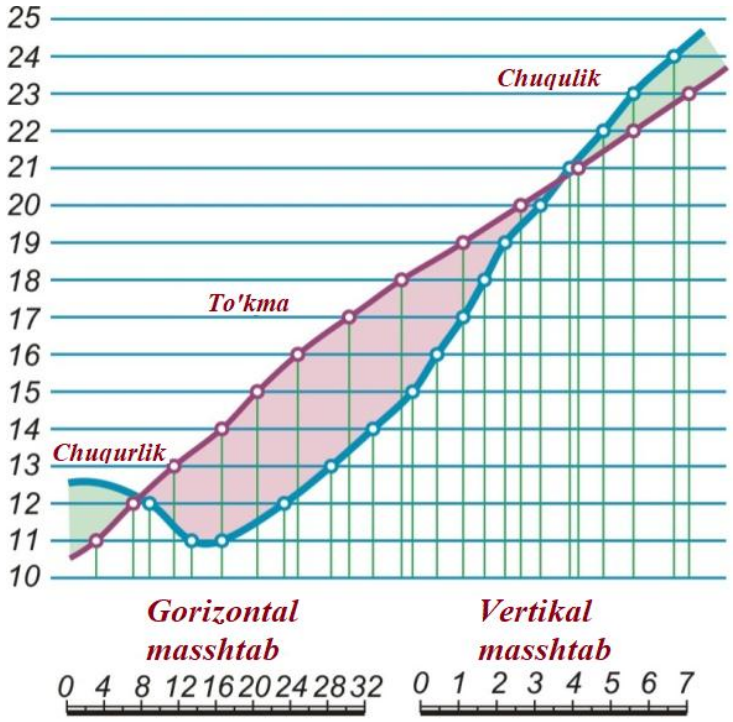

2-figure.

1-we return to the picture. We define a curved line that intersects the road with the Earth's surface. These are two: the lines between the 20-and 21-horizons of the road and in the 12-horizontal area of the road. We make the intersection in the first area. To do this, we mark the points A and S, where the 20- and 21-horizons on the road intersect with the single-name horizons of the surface of the Earth's surface. In order to determine the direction of the intersection curve, it is possible to find the total points of the 19 and 21-horizons of the road and the surface of the Earth's levels or to use the 20,5-mark intermediate horizons. They intersect at the V Point. Combining the points A, B and C of the curve line, we divide the arc located between the most edge lines of the path. Making the intersection points of the corresponding 11, 12 and 13-horizons of the road and the surface of the Earth's levels, we find the second intersection line with the surface of the road and the Earth's levels. From the consideration of the signs of the surface horizons of the road and ground levels (or the longitudinal profile), it is possible to see that the road between the sloping lines is located at an elevation, and beyond them, at a depth. To make a line of intersection of the road slope with the surface of the Earth's levels, we knit their horizons. Initially, we can determine in which places the projection of the road axis is a straight line (between the ABC curve and the 19-horizontal), the departure of the arc in a circle (the projection of the road axis is foreseen; in fact, the axis itself is a screw line), and in which place the axis of the road is a curved line. The slope of the road will be a plane in the place of a straight line. The slope in the area, where the axis of the road is in the form of a circular arc, is made. Here, the slopes will be in the form of helicoids, and finally, the slopes in the last area will be covered with the same high-slope surface. The projections of the slope horizons are in the form of smooth equidistant curved lines. We mark the intersection points of the horizontal lines with the same mark of the slopes and the surface of the Earth's surface, combining them with a smooth curved line representing the boundaries of the Earth's work. The boundary of the earthworks is exactly the same as the edge line of the road, the edge line of the road intersects at the point of intersection with the topographic surface.

At the formation of the surface of the slope of the same length, the cross-section of the straight line is silenced along the surface with its one end, the space curve with its second end.

Through the different points of the conductor (Figure 4), we transfer the normal vertical planes to the projection of the conductor and make the intersection line of the slope surface of the same length as the surface of the Earth's surface. Where the intersection lines of the surfaces intersect, the point at which the slope intersects with the topographic surface will be located.

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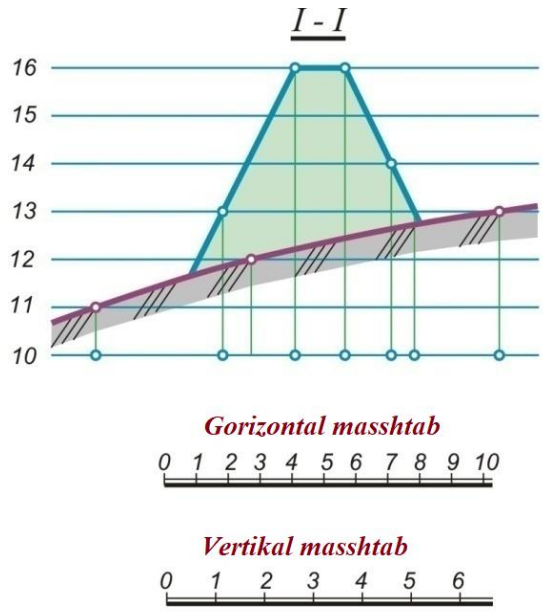
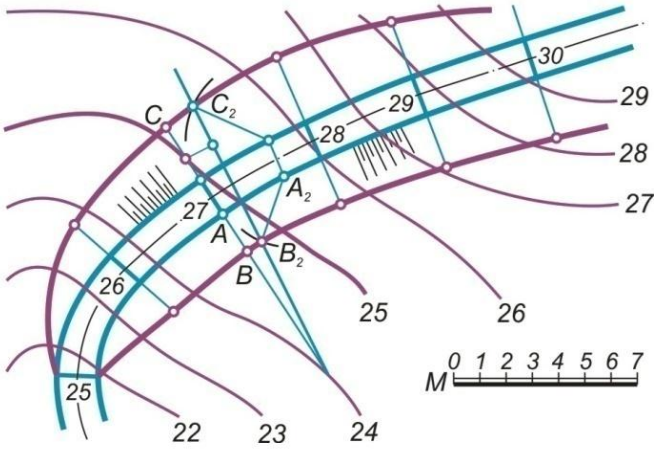


3-figure.



4-figure.

For example, A we make a vertical plane that passes through a point and is normal to the roadside line and we make a profile that is superimposed. Passing through the arc of the circle radius, given through the A2 point, we mark the point B2, in which the arc of the circle intersects with the projection of the surface of the Earth. We make a point B by installing a protection link. Thus, Point C on the opposite side of the road is found. The is also located on the slope surface of the same length.

Accordingly, we make cross-sections with vertical planes passing through the marked points 28, 29, etc., and find the intersection line of the slope surface and topographic surfaces of the same length. The intersection line, near the 25-the horizontal of the road, meets the edge line of the road. Due to the fact that the slopes in this place are almost in a vertical position, some kind of engineering solution should be used to perform them.

3.CONCLUSION

The above-mentioned issue is expressed in the hope that I will help close in the construction of modern engineering facilities.

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