LETTER TO THE EDITOR

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In connection with the article by V. Kh. Gol'tsman,* we find we have grounds to make the following comments. Until now, in designing retaining walls, wide use has been made of the method of determining the soil resistance and thrust based on the classical theory of pressure. Also, the walls are regarded as vertical beams subjected to active or passive soil pressure, determined according to Coulomb's theory. The result is that, as the author correctly observes, the structures become uneconomic and the safety factors are raised excessively.

According to the author of the subject article, attention should be turned principally to determining the magnitude of the coefficient of soil resistance and the law governing its distribution with depth; also, to correctly determining the depth of the soil under compression as a function of several parameters (wall dimensions, load magnitude). The fixing of the depth of soil under compression warrants serious consideration, and one can agree with the author's suggestion that it be determined by taking into account the magnitude and nature of the loading applied, and, as a consequence, obtaining the derivative of the coefficient of resistance. Also, the magnitude of the reactive resistance as determined by Eq. (3), with the pressure coefficient considered to be a variable, gives a more accurate reflection of the diversity of the effective factors involved (magnitude and nature of the loading, displacements, thickness of layer being compressed, soil characteristics). A well-founded determination of the resistance coefficient of the soil will permit adoption of more reliable values of these factors in calculations. This will necessitate corrections to the appropriate sections of Construction Standards and Regulations (SNiP) II-I.10-65.

The thickness of the layer under pressure can be determined, as when designing beams on a layer of finite thickness, by comparing the magnitude of the reactive resistance of the soil with its lateral pressure on a stationary retaining wall (pressure at rest).

The author's proposals, aimed at an in-depth and detailed determination of the coefficient of lateral resistance of a soil, are considered warranted and deserving of attention. The importance of the question demands further development of investigations and a closer analysis of the voluminous experimental data available.

* See Gidrotekh. Stroitel'., No. 11 (1975).

Translated from Gidrotekhnicheskoe Stroitel'stvo, No. 10, p. 46, October, 1976.