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POSTER PRESENTATION

Determination of Drainage Structure Excavation Areas by Close Range Photogrammetry

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Abstract

Long-term service of forest roads is a very important phenomenon. In addition to good planning on forest roads, it is very important to make drainage structures for these roads to be durable. In the construction of drainage structures, excavation areas must be determined accurately. Determining the amount of excavation and filling is of great importance in terms of cost. This study was carried out in Yalıköy Forest Management Department, which is affiliated to the Istanbul Regional Directorate of Forestry. In the study, six steel culverts of different sizes were constructed. The excavation areas of the drainage structures were determined in two different ways. First, the approximate amount of excavation was calculated according to the size of the culvert before the excavation was carried out. Secondly, after excavation for drainage structures, the amount of excavation areas was determined by close range photogrammetry. Because of this study, it was determined that the use of close range photogrammetry during excavation and filling works of drainage areas affects the cost. Because of the study, it was found that there was a difference of approximately 15% between the first excavation quantity and the close range photogrammetry. Accurate determination of the amount of excavation is important in terms of labor costs, machine operating costs and environmental damages.

Keywords: *Forest road, culvert, cutting, drainage, photogrammetry*