

Assessment of the transport routes of oversized and excessive loads in relation to the passage through roundabout

Jan Petru^{1,2}, Jiri Dolezel^{2,3} and Vladislav Krivda¹

¹VSB – Technical University of Ostrava, Faculty of Civil Engineering, Department of Transport Constructions, Ostrava, the Czech Republic

²MORAVIA CONSULT Olomouc a.s., Olomouc, the Czech Republic

³Brno University of Technology, Faculty of Civil Engineering, Brno, the Czech Republic

E-mail: jan.petru@vsb.cz

Abstract. In the past the excessive and oversized loads were realized on selected routes on roads that were adapted to ensure smooth passage of transport. Over the years, keeping the passages was abandoned and currently there are no earmarked routes which would be adapted for such type of transportation. The routes of excessive and oversized loads are currently planned to ensure passage of the vehicle through the critical points on the roads. Critical points are level and fly-over crossings of roads, bridges, toll gates, traffic signs and electrical and other lines. The article deals with the probability assessment of selected critical points of the route of the excessive load on the roads of 1st class, in relation to ensuring the passage through the roundabout. The bases for assessing the passage of the vehicle with excessive load through a roundabout are long-term results of video analyses of monitoring the movement of transports on similar intersections and determination of the theoretical probability model of vehicle movement at selected junctions. On the basis of a virtual simulation of the vehicle movement at crossroads and using MonteCarlo simulation method vehicles' paths are analysed and the probability of exit of the vehicle outside the crossroad in given junctions is quantified.