A NEW TOOL TOWARDS EASIER DESIGN AND SETTING-OUT PROCEDURE FOR TRANSITION CURVES

Dr. Mohamed Mahmoud Hosny Abdel Rahim
Transportation Dept. Faculty of Engineering Alex. University
E-mail: mmhosny@link.net

ABSTRACT

Improvement of traffic capacity can be attained through a suitable design, alignment, and setting-out works of transition curves. This paper is devoted to introduce the clothoid as an ideal transition curve applied in highways and to develop a simple tool that helps the user in inserting and setting out the transition curves within the circular curve without the need for special tables or complicated calculations.

An investigation on using clothoid as a transition curve has been performed. The subject of this paper deals mainly with the study of the main clothoid elements, insertion cases, and major steps to develop an easy to use program to practically provide these elements automatically after specifying few parameters. The use of special tables adopted for calculating the setting out data is thoroughly assessed and the compensation for these tables within the program was determined.

The aim of this study, then, is to develop a new tool that facilitates the proper and exact determination of setting out data of transition clothoid, which considered being the most accurate transition applied for highways. The user has to be stationed at any point and target the first and start point of the desired circular curve, then the program automatically provides the user with the required setting-out parameters and coordinates for the circular and transition curves.

Keywords:
clothoid – transition curves– setting-out data – primary clothoid.