

1 Introduction to the case study (Relevant paragraph of the paper: INTRODUCTION)

The examined case study refers to the geotechnical design of a railway embankment, implemented by EDAFOMICHANIKI S.A. within the framework of the project “Geotechnical Design of the New Railway Alignment between the Existing Line and Kavala’s Port” located in Greece. This case study is considered as suitable for undergraduate instruction in the geotechnical engineering field.

The areas of geotechnical engineering on which the current case study is focusing are a) slope stability analyses and b) determination of soil settlements due to the construction of the embankment. More particularly, the development of immediate settlements as well as of consolidation settlements is expected to occur, due to the nature of the encountered soil formations. Therefore in the calculations of soil settlements, the consolidation theory of clayey soils is also presented in detail. The examined railway embankment will be constructed at the broader area of Nestos’ river in northern Greece, adjacent to Nestos’ bridge. It is noted that at the area of the examined embankment, the railway alignment is adjacent to the alignment of Egnatia Highway.

The area of the embankment is presented in Figure and Figure 2.



Figure 1. The examined embankment located at northern Greece

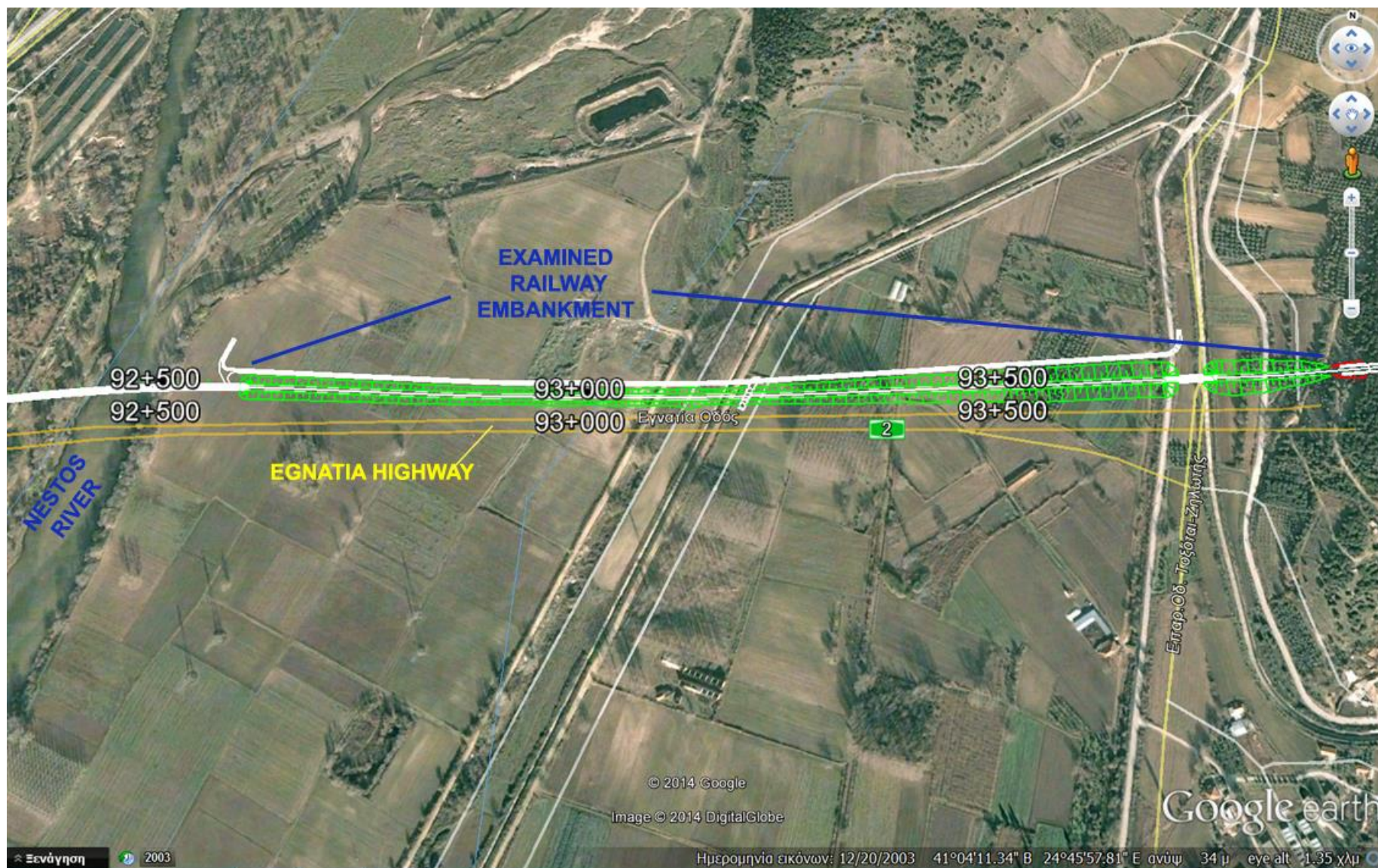


Figure 2. Detailed view of the embankment

Accompanying files

1-1. The location of the embankment is presented in the following file:

1-1_FIGURE_1.jpg

1-2. The detailed view of the embankment is presented in the following file:

1-2_FIGURE_2.jpg