

**OPTIMIZATION ALGORITHM FOR DESIGNING
VERTICAL ALIGNMENTS OF HIGHWAYS**

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**B. Eng (Hons) (Civil)
UNIVERSITI TEKNOLOGI MARA
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ALIGNMENTS OF HIGHWAYS**

By

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Report is submitted as
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Bachelor Engineering (Hons) (Civil)

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DECLARATION

I Zahriani Mastam, 2003355851 confirm that the work is my own and the appropriate credit has been given where reference has been made to the work of others.

(.....)

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I have made every effort to identify the original sources of information stated but, if there have been any accidental errors of omissions, I apologize to those concerned.

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Zahriani Mastam

ABSTRACT

Economic considerations are one of the most important design controls in highways project. Meanwhile, computerized highway optimization models can seek optimized horizontal and vertical alignments by minimizing aspects of total cost. Since the economic considerations become important part, cut and fill balance should be considered by minimizing earthworks which apparently may decrease the construction costs. This study describes the ability of dynamic programming for vertical alignment optimization of a highway. The results of this study proved that the dynamic algorithm can be applied in the optimization of vertical alignments road design.