

DESIGN OF A COUNTERFORT RETAINING WALL

Prepared by: Shim Foong Chien

ABSTRACT

This project is intended primarily to serve as a subject for the undergraduate civil engineering students to complete their Diploma in Civil Engineering Program. The purpose of this project course was to enable the students to do design, research, analysis and making personal decision about a given project title based on the knowledge that they gained so far. Upon the successful completion of this project course, students will have applied a range of techniques for generating, evaluating and selecting design concepts to meet specified requirements. It also helps the students to better understand the nature of Engineering Design Concept and acquired a range of interpersonal skills.

The counterfort retaining wall that I designed was made up by reinforced concrete, 8.00m in high, located along the highway, which retains a backfill with a horizontal top surface and consisting of backfill with density $\delta = 1500$ and angle of repose $\alpha = 36^\circ$. Before I go through the design part, I realized that several factors have to be considered before designing a counterfort retaining wall; soil condition, types of backfill, surcharge loads, foundation stability and others are all the factors that should be taken into consideration. I also applied the formula that I learned in the textbooks when doing my calculation part and do some possible checking for unforeseen failure.