

ABSTRACT

Because of the limited land, basement construction is increasingly needed. Underground construction requires retaining wall methods to withstand the load of soil from the area around construction site. At present, there are several alternative methods of retaining wall, such as secant pile, contiguous bored pile, diaphragm wall, supported by ground anchor if needed. To distribute the load from the ground anchor to the retaining wall, the waller beam method is required. Waller beam can be made of steel or concrete. In this study, a cost and time comparison of steel waller beam and concrete waller beam will be analyzed. Each method has constraints in the implementation at site. Based on the research results, steel waller beam is more suitable to be applied in terms of cost and time. However, if the selection of method could be chosen before the retaining wall was built, then the diaphragm wall is the most suitable retaining wall method to be applied in a project, which has a high level of groundwater and deep level of excavation, but additional cost is needed to change it from the original design contiguous bored pile.

Key words: retaining wall, steel waller beam, concrete waller beam, ground anchor, secant pile, contiguous bored pile, diaphragm wall