ABSTRACT

This research was conducted in order to determine the methods of implementation with the most economical cost and efficient plan to build 6 section of toll roads viaduct. Construction of the 6 section of toll roads viaduct is a project plan of the provincial government of DKI Jakarta, which is expected to reduce congestion. Construction of the 6 section of toll roads viaduct is divided into 3 stages, the first stage section is Semanan – Sunter *and* Pulo Gebang – Sunter, *the second stage section is* Duri Pulo – Kampung Melayu *and* Kemayoran - Kampung Melayu, *and the third stage section is* Tanah Abang – Ulujami *and* Pasar Minggu – Casablanca.

Implementation methods that will be analyzed using Value Engineering in this research is a Balance Cantilever method with Launching Gantry, Balance Cantilever with Lifting Frame, and Balance Cantilever with Crane. Several steps that must be performed in the analysis of Value Engineering is the information phase, the creative phase, the analysis phase, and the recommendation phase.

Life cycle cost analysis results in this research indicates that the method of Balance Cantilever with Crane is the most efficient the other two methods of implementation. The savings that can be made by using method of Balance Cantilever with Crane compare to Launching Gantry is **Rp 19,462,328,000.00** *or* **15.18%.** *While* ***t****he savings that can be get by using method of Balance Cantilever with Lifting Frame compare to by Launching Gantry is* **Rp 16,295,891,440.00** *or* **12.71%.**

Key words : *methods of implementation, Value Engineering, Life cycle cost, Balance cantilever.*