

Design and Performance of a Large Diameter Shaft in Old Alluvium

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Abstract : This project comprises laying approximately 1.8km of 400mm, 1200mm and 2400mm diameter sewer pipes using pipe jacking machines along Mugliston Park, Buangkok Drive, and Buangkok Link. The works include an estimated 14 circular shafts with depth ranging from 10.0 meters to 29.0 meters. Cast in-situ circular shaft will be used for the temporary shaft excavation. The geology is predominantly Backfill and old alluvium with weak material encountered in between. Where there is a very soft clay, F1 material or weak soil is expected, ground improvement will be carried out outside of the shaft followed by cast in-situ concrete ring wall within the improved soil zone. This paper presents the design methodology, analysis and results of temporary shafts for micro TBM launching and constructing permanent manholes. There is also a comparison of instrumentation readings with the analysis predicted values.

Keywords : circular shaft, ground improvement, old alluvium, temporary shaft

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