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Short-Segment
Jacking of Water
Main for
Realignment
under Limited
Space in Urban
Area

Paper Ref #

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Short-Segment Jacking of Water Main for Realignment under Limited Space in Urban Area

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ABSTRACT: The underground pipelines of various utilities crossing each other is inevitable due to limited beneath space in urban area such as Taipei city. Among this circumstance, the existing large-diameter water main penetrating through drainage become a major concerning issue. The water mains passing through drainages not only causing breach that affect the drainage structural stability, but also occupy the interior space that might obstruct the draining water flow. Therefore, such situation can lead to catastrophic consequence to general public and utilities in terms of public safety as well as property damage. Thus Taipei Water Department plans to remove all the penetrating water main pipes inside the drainages in time. Considering the complexity of various underground circumstance, traditional open-cut method is not capable to complete the water main realignment of crossing drainage. Therefore micro-tunneling pipe jacking method has been implemented in such kinds of water main realignment project. In addition, indispensable adjustment and innovation of the trenchless method coordinated to the site conditions had been carried out repeatedly, including minimize the size of jacking shaft as well as the length of pipe unit in order to fit the congested circumstance. Eventually the improved method regarded as short-segment jacking of water main had become a reliable approach in the waterline realignment project. Until now several cases had been successfully realigned by this technique, therefore become a trenchless resolution for the drainage trouble. The technique might be applicable for other urban areas with complex underground in the future. This paper will elaborate the application of short-segment jacking method and the adjustment as well as innovation adopted during the process. Furthermore, two ϕ 700mm water main realignment cases study will be discussed considerably in this paper.

Key words: short-segment jacking, water main, realignment, drainage, innovation

Provide 4 Blank lines between Abstract & Introduction

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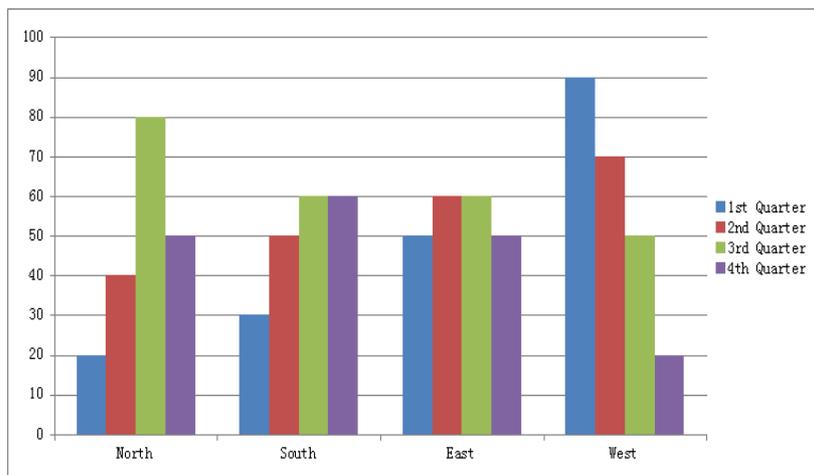


Figure 1. Guidelines for No-Dig Show 2010: sample figure and positioning of the legend

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6. REFERENCES (in alphabetical order)

Gokhale, S., and Ariaratnam, S. (2002). Life Cycle Modeling of Sewer Infrastructure, *Journal of No-Dig Engineering*, Volume 3, No. 2, pp. 33-42.

Najafi, M. (2003). Educational needs in Trenchless Technology. *Proceedings of 2003 No-Dig Show*, Las Vegas, Nevada, March 31-April 2, 2003.