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Overview of Trenchless Techniques and the Engineering Judgement Required to use Empirical Estimating Methods for Pipe Jacking Forces

An overview of trenchless techniques including pipe ramming, auger boring, pilot tube guidance, pipe jacking, hand mining, mechanical excavation, TBMs, MTBMs, and HDD.

Estimating jacking force parameters often involves empirical methods that are correlated to ground conditions by coefficients derived from case histories. A recent MTBM project in Denver, Colorado with twin 96-in. MTBM storm drains under a rail yard illustrates this point. There are a wide variety of methods for predicting jacking forces, and wide variation of geologic-related coefficients included in those methods. There does not seem to be good agreement between the resulting models. The authors have compared multiple estimating models to the actual measured results and found widely varying deviations.

February 13th, 12-1 PM
Berthoud Hall 241

Mr. Zietlow has 21 years of experience in a variety of tunneling and geotechnical engineering experience on heavy civil infrastructure projects including: water, wastewater, and transportation tunnel design and construction; inspection and rehabilitation of tunnels, temporary and permanent earth retention systems, and deep foundations. He is experienced with a variety of ground improvement techniques used to stabilize existing improvements and facilitate tunnel and pipeline installation. Bill primarily provides engineering design services for owners and specialty contractors for design-bid-build and design-build projects across the Western and Midwestern United States. He also assists in plan and specification reviews and litigation support for projects across the country involving both tunnels and other types of construction.

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