Development of the Restrain Method of the Track Displacement for the Large Section Box Culvert Propulsion Method for Constructing Tunnels to Cross under Railways

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For constructing underpass tunnels by the box culvert propulsion method, firstly, square steel pipes are horizontally inserted around the end surface of box culvert along the total length to cross the track in order to restrain track displacements. Secondly the square steel pipes are pushed out to the farther retaining wall of the vertical pit and replaced with box culvert propelled by jacks while excavating either embankments or natural grounds the inside of culvert. In this study, several model experiments of box culvert propulsion and field measurements were conducted. The results of these experiments/measurements demonstrated that the behaviors of the box culvert were well simulated and the track displacement was restrained in the construction phases by the method proposed by the authors.