

Design Method of Reinforcing the Existing Abutment in a Narrow Space so as to Make it Quakeproof

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During the earthquake, the abutment is inclined due to the inertial force and earth pressure, which causes the backfill settlement and track irregularity. In the railway structure, limit value for running safety are prescribed. Reducing the amount of the relative settlement between the abutment and the backfill is an important task in improving the aseismic performance of railway structures. Therefore, with the aim of developing a construction method to suppressing the settlement of the backfill due to the abutment deformation during the earthquake, a method of making the abutment more earthquake proof by reinforcing bars and a diaphragm wall installed in the backfill was proposed and the reinforcement effect was confirmed by model experiments. Based on the knowledge obtained from model experiments, we proposed a practical structural analysis and design method constructing aseismic abutments.