

TITLE: STUDY ON SEISMIC DESIGN PROCEDURE FOR BRIDGE FOUNDATIONS SUBJECTED TO GROUND FLOW DUE TO LIQUEFACTION

Abstract: It is unclarification to the behavior of the bridge foundations subjected to ground flow due to liquefaction, and it is necessary to rationalize the seismic design procedure. In this study, it has aimed to propose the seismic design procedure of a reasonable bridge foundations based on the ground displacement by development of evaluation method of lateral spreading force based on seismic deformation method, and review of allowable displacement of foundations subjected ground flow. In this study, the analysis concerning the case study with the damaged bridge foundations due to ground flow and centrifuge model tests were done, and evaluation method of the subgrade reaction in the surface non-liquefiable layer and liquefiable layer was proposed. Critical state of the foundation when seismic deformation method was applied was examined, and a possibility of the rationalization of the design procedure was clarified.

Key words: bridge foundation, ground flow, seismic design, seismic deformation method