SEISMIC WAVEFORM EVALUATION
AT WATERCOURSE CLOSURE SITES
FOR THE 2008 IWATE-MIYAGI
NAIRIKU EARTHQUAKE BASED ON EMPIRICAL
SITE AMPLIFICATION AND PHASE EFFECTS

Yoshiya HATA¹, Susumu NAKAMURA² and Atsushi NOZU³

¹ Member of JAEE, Senior Researcher, R&D Center, Nippon Koei Co., Ltd,
Tsukuba, Japan, hata-ys@n-koei.jp
² Member of JAEE, Professor, Faculty of Civil Engineering, Nihon University,
Koriyama, Japan, s-nak@civil.ce.nihon-u.ac.jp
³ Member of JAEE, Head of Engineering Seismology Division, Port and Airport Research Institute,
Yokosuka, Japan, nozu@pari.go.jp

ABSTRACT: A great geo-disaster occurred in the 2008 Iwate-Miyagi Nairiku Earthquake. Therefore, evaluation with high accuracy of the strong seismic motion at the damaged sites is very important to analyze the failure mechanism. However, there are no strong motion observation stations near the watercourse closure sites during this earthquake. In this study, the seismic waveforms at Ichinonohara, Nuruyu and Sakashita, where watercourse closure took place, were estimated based on empirical site amplification and phase effects. The estimated seismic motions will be useful for rational safety assessment of natural slopes.

Key Words: Seismic motion, Seismic observation, Microtremor measurement, Site effects