5. LIQUEFACTION IN INLAND AREA

5.1 Liquefaction in former pond

Many reservoirs and irrigation ponds had been built along the foot of Rokko Mountains because no big rivers flew through the area between Kobe and Amagasaki. They had been gradually filled up and public facilities such as schools were constructed on the filled ground. Soil liquefaction sporadically occurred in such filled ground of Takaoka Junior High School in Akashi City (A in Figure 10), Hyogo High School in Kobe City (B in Figure 10), Kizuyama-machi (C in Figure 10), Kita-shukugawa Elementary School (D in Figure 10), Koyoen Elementary School (E in Figure 10) and Nishinomiya Municipal High School (F in Figure 10), all in Nishinomiya City, Mefu Elementary School (G in Figure 10) and Yamamoto-naka (H in Figure 10), both in Takarazuka City. A building of Nishinomiya Municipal High School collapsed due to liquefaction and its induced ground displacement as described later in detail. In Kizuyama-cho and Yamamoto-naka, many wooden private houses were severely damaged due to both a large reduction of bearing capacity of the ground and horizontal ground displacements.

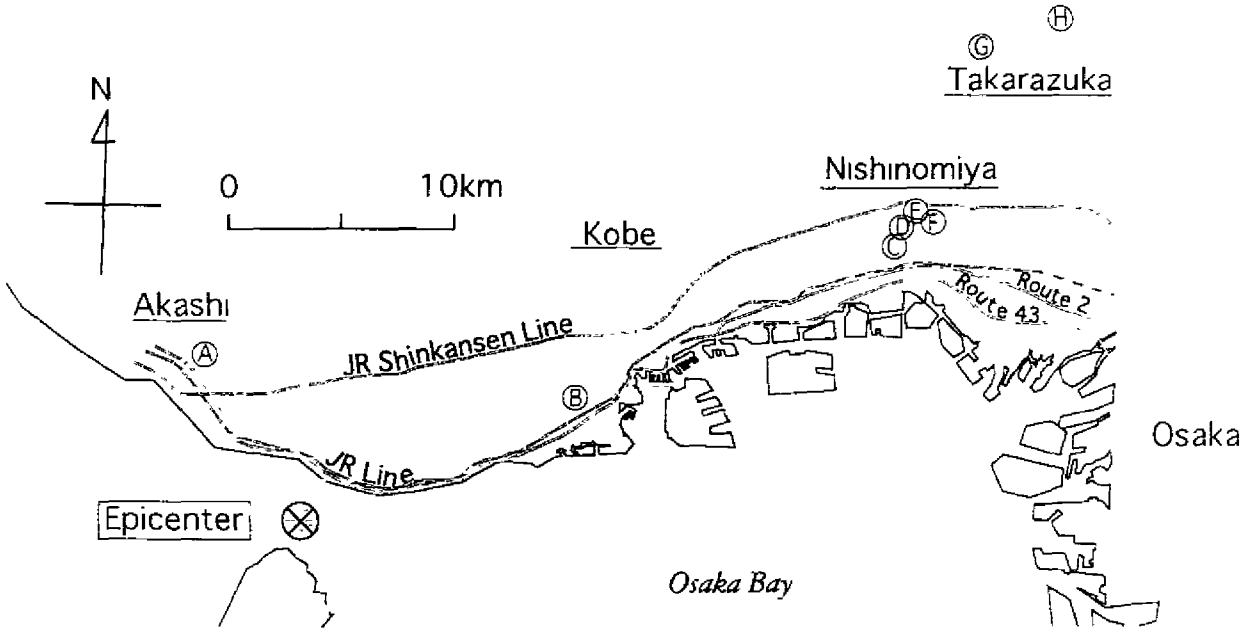

Figure 10. Distribution of liquefied sites in former pond

5.2 Liquefaction in alluvial plains

In Nishinomiya and Amagasaki cities, liquefaction traces were found not only in the reclaimed land areas along the coastline but also in the Muko River plain. Sand boils were abundantly observed particularly in the delta south of National Route 43 (about 2.5 km from the estuary) as shown in Figure 4. In the area north of Route 43, soil liquefaction sporadically occurred along the Muko River, where cracks and settlements were caused on the left embankments[20].

Soil liquefaction was also reported in the flood plain along the Ashiya and the Miya-gawa Rivers flowing through the city of Ashiya[21]. Sand boils were not observed much, nevertheless numerous wooden private houses sustained serious damage to their foundations due to ground displacement occurred along the gentle slope of natural levees and/or sandbars. Liquefaction was also observed in the lower reaches of the Ishiya River flowing through the eastern part of Kobe.