5. EARTHQUAKE EFFECTS ON TRANSPORTATION FACILITIES

5.1 Effects on Railroads

Railway service in Santa Barbara and to areas north and south is provided by the Southern Pacific Transportation Company. The company operates a single track main line in this part of the state. The line parallels the coastline and is used for both freight and passenger service. As a result of the earthquake, a major freight train derailment occurred along this line in an unpopulated area at the location shown in Fig. 1.2. The consequent financial loss was one of the largest single losses resulting from the earthquake. The freight train was north-bound enroute from Los Angeles to Watsonville. It carried 49 empty cars and nine loaded cars containing non-hazardous freight. The train was rounding a curve at about 50 mph when the derailment occurred. The engineer reported that following the earthquake he saw a "kink" ahead in the tracks but that the train could not be stopped in time. Subsequent investigation showed that the kink may have been a result of roadbed fill failure. The south-bound evening Starlight Amtrak passenger train would have passed the same location an hour later. Damage to the derailed train was estimated to be $380,000 and damage to the track was set at $40,000. No injuries resulted from this accident which derailed thirty cars (Fig. 5.1) and sent a pair of wheels flying across U.S. Highway 101 which borders on the track, as seen in Fig. 5.2. The line was reopened to normal train traffic about 24 hours later.

5.2 Effects on Highways and Bridges

Santa Barbara is separated from the Santa Ynez River basin to the north by the Santa Ynez Mountains which run parallel to the coastline and range in height from two to over four thousand feet. California State Highway 154, a two-lane highway, cuts directly across these mountains in a north-westerly direction from the city, rising to over 2,000 feet at San Marcos Pass. Several rock-slides of the type shown in Fig. 5.3 occurred along this heavily weekend-travelled route, closing it to through traffic for more than 24 hours. No injuries resulting from the rock-slides were reported. On the Santa Barbara side of the mountains, where the highway appraches the foothills, earth settlement was noted at one location along the highway shoulder, 9 to 10 feet from the edge of the pavement, creating a gap of about 2 inches. This was at a place where the ground on the settlement side of the road drops 200 feet.

U.S. Highway 101, which is the major coastal highway route between northern and southern California, passes through the center of Santa Barbara. A short state highway spur in Goleta designated as California State Highway 217, but better known locally as Ward Memorial Boulevard, merges with Highway 101 and carries traffic to and from the UCSB campus area. Highway 101, as well as Ward Memorial Boulevard, are divided freeways with two lanes in each direction. Several major thoroughfares in Goleta cross Highway 101 and the adjacent Southern Pacific track on roughly north-south oriented bridge overpasses. One such thoroughfare is Ward Memorial Boulevard where it merges with Highway 101 on curved and banked overpasses as shown in Figs. 5.4 and 5.5.

Fig. 5.1 Derailed freight train west of Goleta. View looking north toward highway. (Santa Barbara News-Press photo. Reproduced by permission).

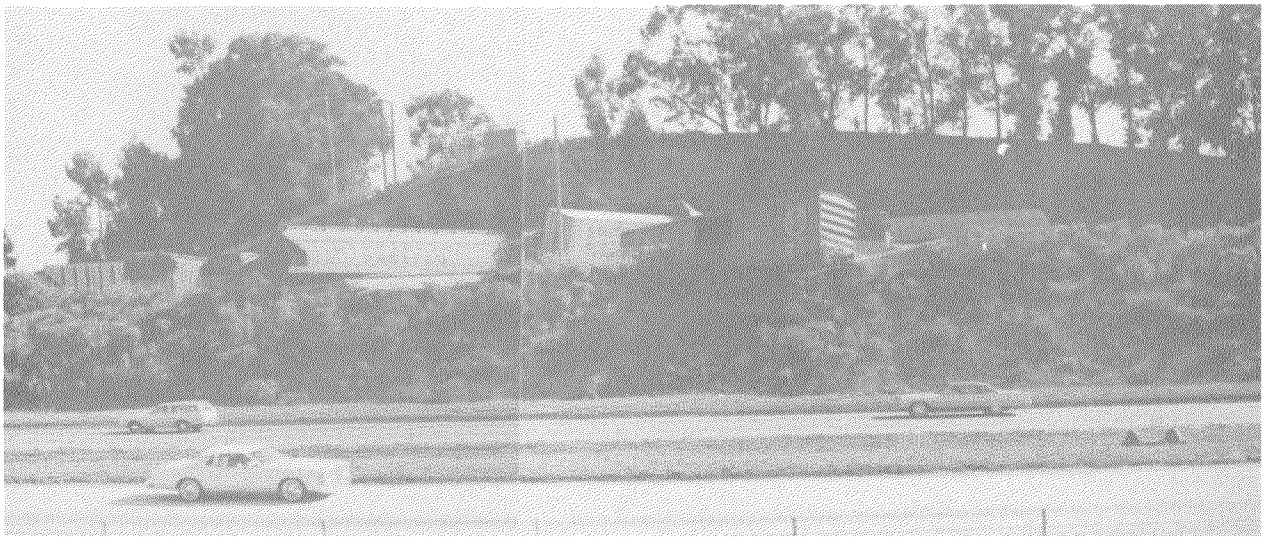

Fig. 5.2 Derailed freight train west of Goleta. (see Fig. 1.2 for location). View looking south across U.S. Highway 101. Note train wheels on highway median.