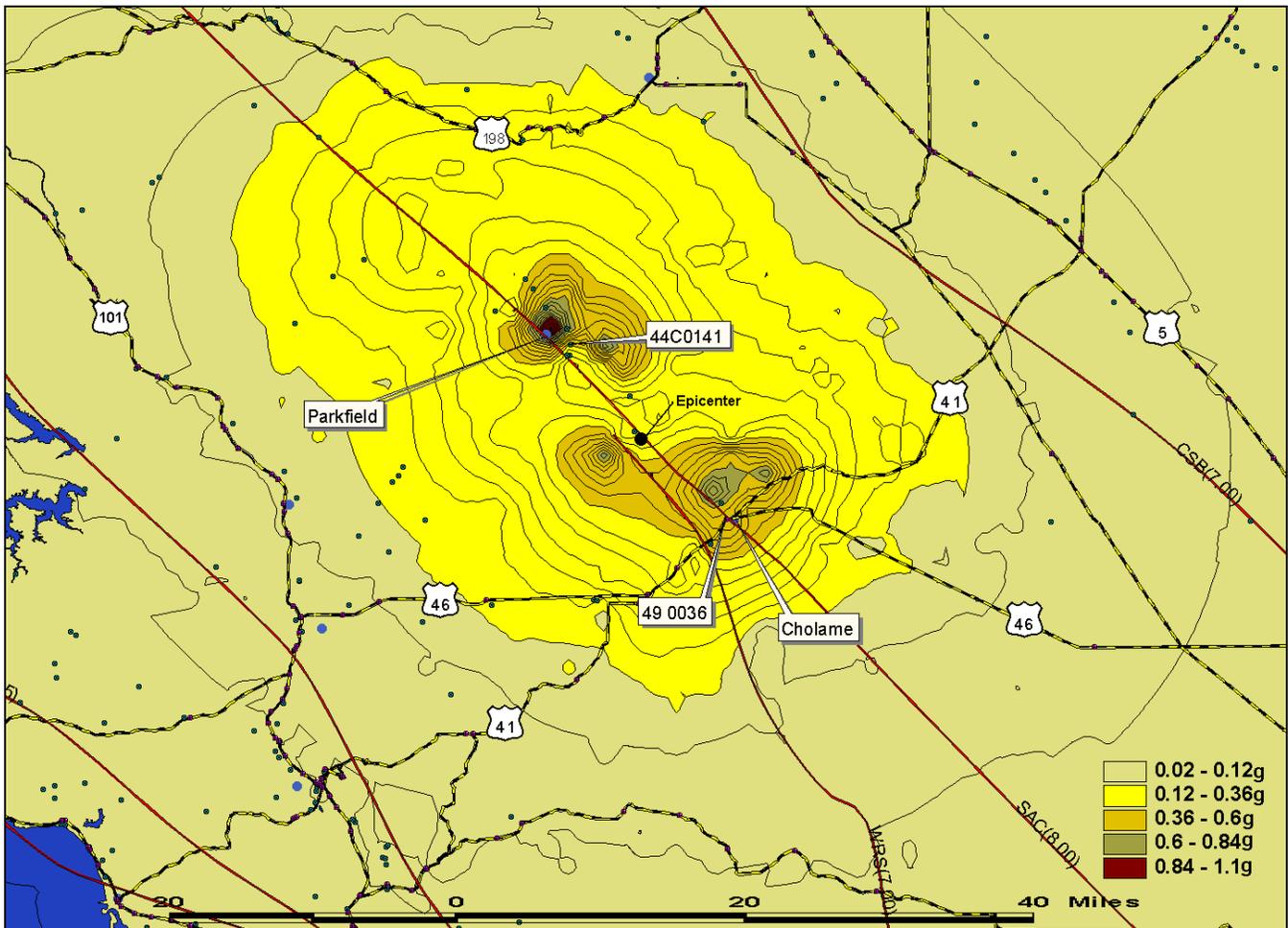


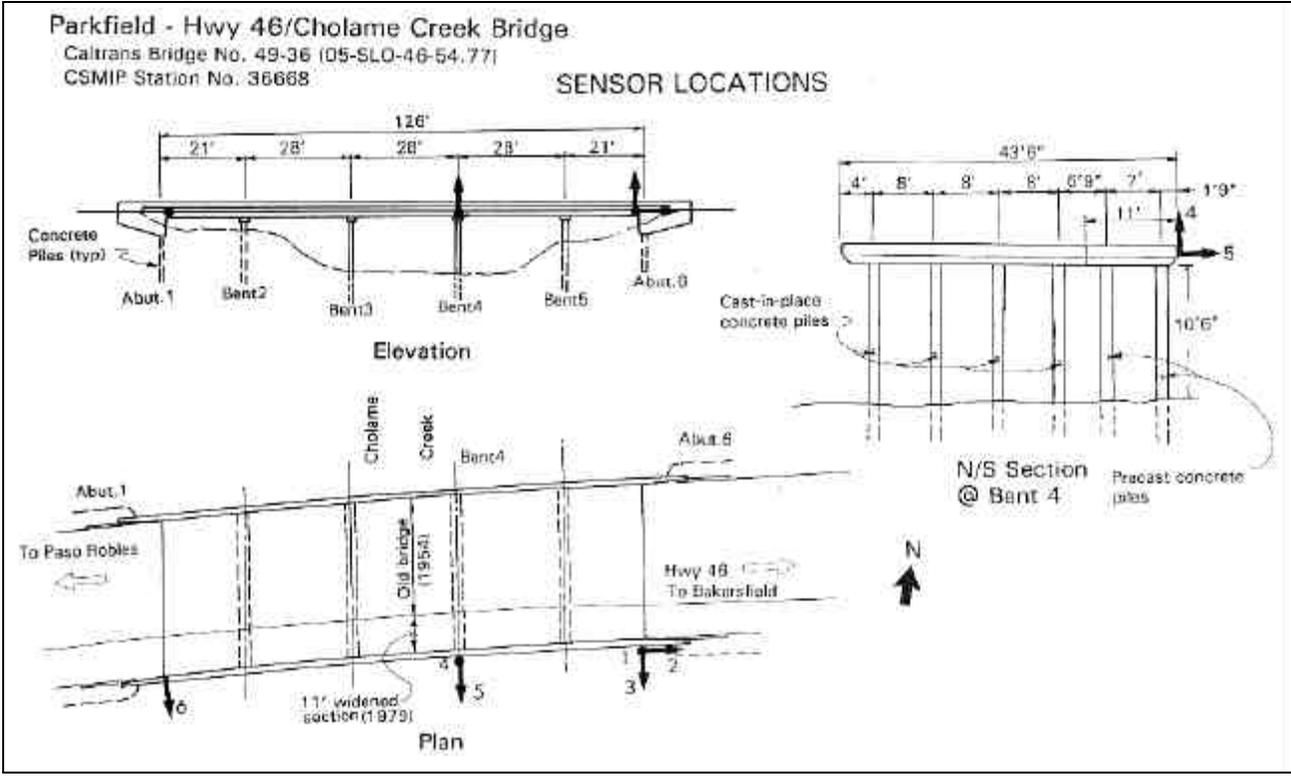
9/28/2004 Parkfield, California Earthquake



On September 28, 2004 at 10:15 AM PDT, a magnitude 6.0 earthquake occurred on the San Andreas fault near Parkfield, California (N35.81 W120.37). This site was extremely well instrumented due to the many earthquakes that occur along this section of the San Andreas Fault. The San Andreas fault north of Parkfield continually creeps until the fault south of Parkfield ruptures. This earthquake provided a wealth of data on near fault ground motion. This was the largest of a group of earthquakes that occurred along this portion of the San Andreas fault for several days after the main shock.

The above map was created by downloading the PGA Shakemap from CISN and overlaying it on an ARCVIEW map of highways in the region. This map was continually revised for several weeks after the earthquake as data from the CGS sites was collected and added to the Shakemap. As shown on the map, State Routes 41, 46, and 198 were in the area of strong shaking.

The Cholame Creek Bridge (Br #49 0036) was instrumented, it was located only 500 feet from the San Andreas fault, and it recorded accelerations in excess of 1.0g! The drawing on the facing page shows the bridge geometry and the location of the six accelerometers. Caltrans Area Bridge Maintenance Engineers (ABME's) looked at this and other state and local bridges in the area. This bridge had a few cracks at the top of the pile extensions and some signs of movement at Abutment 6 but there was no other damage. Unfortunately, there were no free-field recordings available to calibrate to the bridge motions or to the bridge damage.



Another interesting location of very minor bridge damage was at the Parkfield County Bridge (Br #44C 0141) that crosses over the San Andreas fault. This bridge was recently retrofit with oversized outrigger bent caps as shown below. The only damage was to steel keeper plates that were knocked off of the bent caps when the bents were displaced a few centimeters by the fault movement.

