Methodology:

The trench was originally excavated and logged in the fall of 1996. The initial log of the first exposure of the lower and upper wall exposed evidence for an earthquake horizon at about the level of the bench that separated the upper and the lower wall (McGill, 1997). The purpose of this project was to cut back the lower wall to reach a final continuous exposure of the upper and the lower wall, so that the stratigraphic level of the earthquake horizon could be confirmed with a greater certainty. In the process, we photo-documented one intermediate exposure to help us trace back the highest faulted and the lowest non-faulted layers. All of the major stratigraphic layers from the initial exposure of the lower wall were found in the intermediate exposure, and were logged on photographs. Finally, we cut back to the final exposure, where we surveyed the nails along prominent contacts using a total station, and logged the wall with fine details. For safety reasons, we had to cut two feet off the upper wall but we did not lose any of the important details because the upper wall had already been logged, and the lowest unfaulted layers from the upper wall are still preserved in the final, continuous exposure.

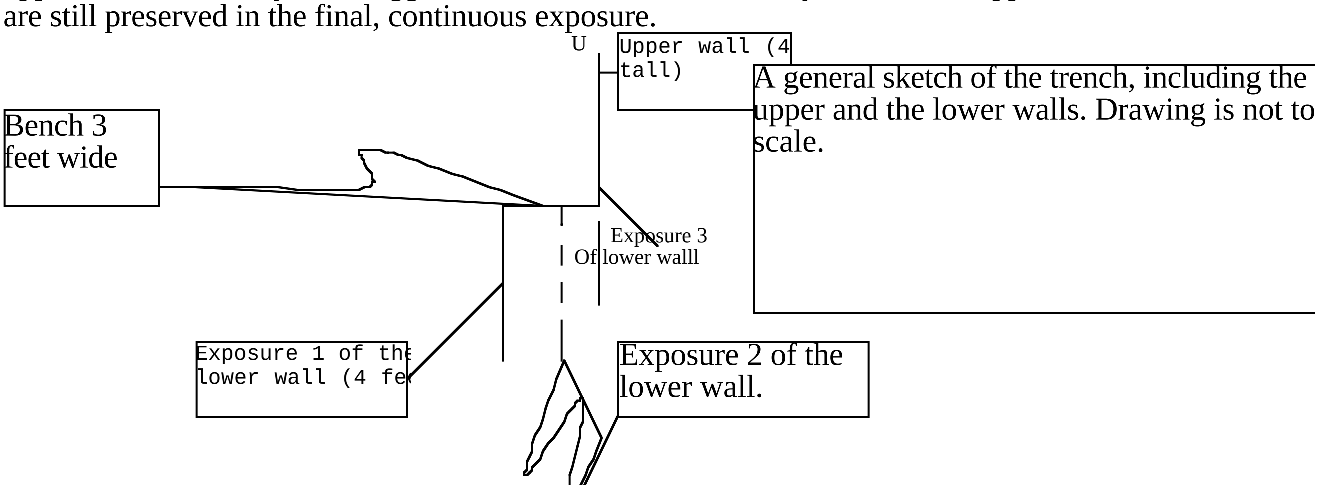

Fig.4: A sketch of the trench, illustrating the methods and the procedures.

Evidence for faulting events:

Evidence for two late Holocene earthquakes on this part of the San Andreas Fault was exposed in the trench. The evidence was also consistent in all three exposures. In the log of exposure 1 (fig.5), we identified one major earthquake horizon; event A. We correlated two prominent finer grained layers across the faults. The lower layer is E and the upper is layer G (fig.5).

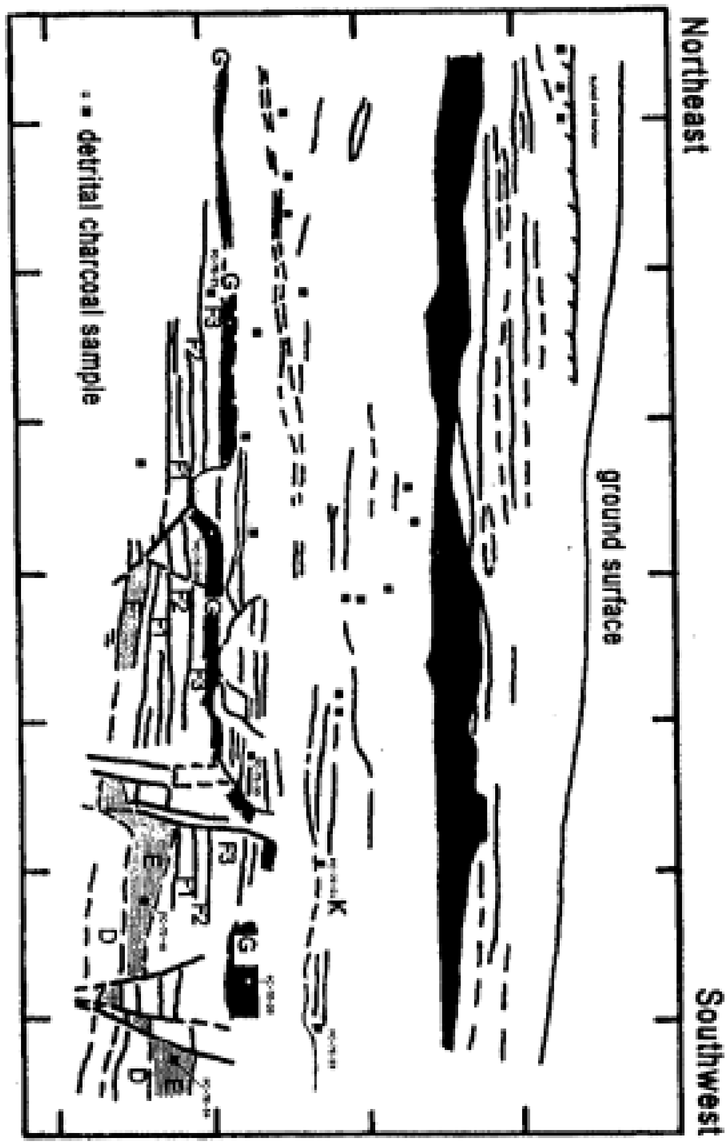

Figure 5. Log of trench 2, exposure 1, showing a paleoearthquake horizon between layers F and K. Bedding within layers E and F are clearly faulted. Tick marks are 1 meter apart. After McGill, 1997.

Stratigraphically, layer E is older than layer G and sandy layers F1-3 separate the two. It is very clear that layers F and E are faulted in all places. The layer above G, layer K, does not seem to be disturbed by the faulting. In some places, a couple of channels truncate the faults; thus it is hard to tell if layer G is disturbed by channeling or by the faulting. But in other places the fault traces are very prominent.

In the second exposure, we identified two earthquake horizons, event A and event B. Event B is older than A; it cuts through layer E only. The stratigraphic layer deposited on top of layer E (layer F1) doesn't seem to be offset; thus the faulting did not extend beyond layer E (fig.6). The youngest event A represents the same event of the first exposure. In the third and final exposure, we traced horizon events A and B. The exposure is similar to exposure 2 but individual layers F1-3 are not recognizable within unit F (fig.7). In addition, there could be a possible fault below the northeastern end of the wall (fig.7). A disruption of layer E is present at this location, which may be also, be due to faulting during event B.

Radiocarbon dates:

Seven samples of charcoal that were collected from the original expos
radiocarbon dated. The results are shown in table 1. All of the samp
represent maximum ages for the layers from which they are collected,
may have already had a significant radiocarbon age at the time they w
However, nearly all of the sample ages are consistent with the strat
Three separate radiocarbon analyses were performed on each of the sa
event A most closely (samples PC-7E-29 and PC-7E-55). Combining the
analyses led to a smaller error in the radiocarbon ages and significa
allowable range of calibrated ages of these samples. Before the extra
PC-7E-51, PC-7E-53, and PC-7E-55 of layer K dated older than PC-7E-2
layer K is younger stratigraphically. However, after getting the two
a more precise date on PC-7E-29, which made the dates on PC-7E-51, P
7E-55 stratigraphically feasible, or within 1 sigma error bars (C14 a
cases).