CALIFORNIA DIVISION OF MINES AND GEOLOGY

FAULT EVALUATION REPORT FER-85

SUPPLEMENT NO. 1

February 21, 1979

1. Name of fault

San Jacinto fault, Hemet area

6. Fieldwork and Airphoto Interpretation

Additional field work was conducted February 5 to 7, 1979 and airphotos were rechecked in several areas to resolve the questions raised in the initial FER-85 of January 23, 1979. The additional data obtained are discussed below by locality numbers and the data are plotted on Figures 4a and 4b.

A narrow (20± feet wide), northwest-trending zone of cracked and patched asphalt paving occurs in two places at Locality 1 (Fig. 4a). The cracks are not en echelon and the cause of deformation is unknown. One of several vague northwest trending lineaments (shown on Fairchild aerial photos C-5750, AXN 232-34 & 35) coincides with the crack-zone, but most of these lineaments are believed to be associated with recent channels in Bautista Wash, which has been subjected to historic flooding. Aside from the above, there is no clear indication as to the location of the presumed connection between the Clark fault to the southeast and the Casa Loma fault to the northwest (Fig. 5). An effort was made to locate the most recent trace of the Clark fault immediately to the southeast in the NE 1/4 Hemet 15' quadrangle, but this was unsuccessful (see Fig. 7).

Several lines of evidence indicate that inferred fault "D" is not an active fault, but is more likely due to recent lateral erosion by the

San Jacinto River (Fig. 4b, Localities 2, 3, 4, 5). This fault was mapped only by Proctor (1969) and Fraser (1931), the latter showing it as concealed. Sharp (1967) and Dibblee (1971) show no fault near inferred fault "D" and their mapping to the southeast suggests the absence of major offset along such a fault. At Locality 2, Bautista Beds (mudstone, ss, cgl) dip gently south and do not appear to be severely disturbed by faulting, although a probable minor fault was identified in a tributary gully 100 feet or so NE of the escarpment. However, the minor fault does not appear to offset the overlying alluvial fan deposit (coarse sand and gravel) of probable late Pleistocene age. Moreover, the fan surface does not appear to be modified by faulting and the apex of the fan projects NE across the escarpment in Bautista Beds. Thus, there is some evidence of minor Pleistocene faulting at Locality 2, but no evidence of Holocene faulting.

At Locality 3, the Bautista Beds appear (from a distance) to dip uniformly to the southwest (Fig. 4b.) at the break in slope. At Localities 4 and 5, the Late Pleistocene (?) terrace surfaces do not appear to be offset and significant vegetation or tonal lineaments are not obvious on the Fairchild and USGS airphotos. Finally, the southward extension of the Claremont fault appears to follow the scarp that lies north of and aligns with Bautista Creek (Fig. 4b). Although inferred fault "D" may be a minor Pleistocene fault that coincides with the relatively straight break in slope southeast of Poppet Creek, there is only indirect evidence of a through-going fault in the Bautista Beds and no evidence of Holocene faulting.

The south end of the Claremont fault west of Valle Vista was briefly examined again by means of airphoto interpretation in conjunction with field reconnaissance and an aerial overflight. There is no discernable evidence as to the surface location of this fault west and south of Valle Vista. It is very probable that the Clark and Claremont strands of the San Jacinto fault interconnect at depth in some manner, as both are major strike-slip faults. However, the interconnecting faults are no doubt complex

and may not be continuously exposed in the young alluvium. It is anticipated that the interconnection is at the northwest and / or southeast ends of the San Jacinto Valley graben, but these distal margins are not structurally well-defined (see Fig. 2a and b).

Inferred fault B (Fig. 5.) -- The airphotos were rechecked and the broad low scarp was reobserved in the field. Because of the location and orientation (southwest-facing) of this escarpment, it is tempting to view it as an interconnecting fault between the Casa Loma/Clark strand and the Claremont fault. However, the escarpment is very low, subtle and cannot be followed southeast of Mayberry Avenue. If it is an active fault, it is a relatively minor one. Most likely the feature is due to recent channeling along Bautista Wash, which is part of a very active alluvial fan.

7. Conclusions

With the following exceptions, the conclusions relating to the various traces of the San Jacinto fault zone remain the same as given in FER-85 (dated 1/23/79) with the following exceptions:

Casa Loma fault -- The location of the trace southeast of Lake Street is uncertain, either because of complex faulting in the subsurface, or the difficulty in propagating a fault to the surface through the very recent Holocene alluvium of Bautista Wash & Creek. Almost certainly, the Casa Loma fault connects in the subsurface to the southeast with the Clark fault, but the surface location is uncertain. It is possible that the surface trace is at Locality 1.

Claremont fault -- No new evidence for the location of the southerly trace of this fault was found, although inferred fault "B" could be a short segment of a poorly defined, set of discontinuous faults.

Inferred fault "D" -- There is no evidence for the through-going Holocene fault as inferred by Proctor (1969) and no theoretical reason why such a fault (if it exists) is active.

8. Recommendations

These are the same as in FER-85, with the following exceptions:

Inferred fault "B" -- Incorporate in narrow zone; possibly not a fault, but the low scarp certainly is a well-defined Holocene feature.

Inferred fault "D" -- Delete zone; there is evidence that active faulting has not occurred and that the somewhat linear escarpment was cut by lateral erosion along the San Jacinto River.

9. Report prepared by: E.W. Hart, 2/21/79

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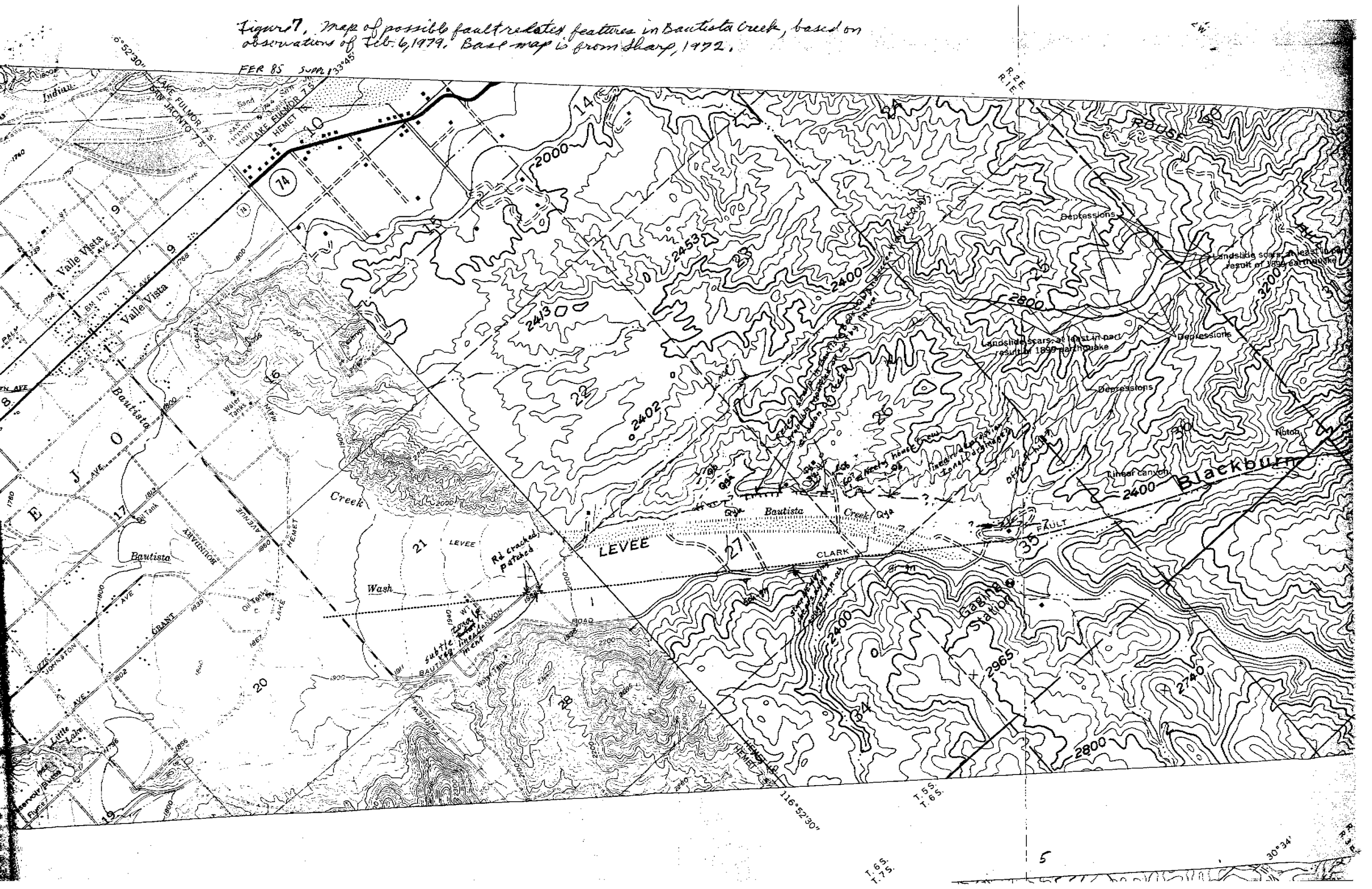
Figure 7. Map of possible fault related features in Bautista Creek, based on observations of Feb. 6, 1979. Base map is from Sharp, 1972.