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KEY POINTS CONCERNING
2006 EARTHSLIDE AT
ROAD SHOULDER AND
ADJACENT DOWNSLOPE PARCELS
AT 130 & 136 ALLYN AVENUE
SAN ANSELMO, CA

Enclosed are my initial thoughts concerning the 2006 Allyn Avenue earthslide that led to demolition of the 136 Allyn dwelling and the garage unit for 130 Allyn to its immediate south; and upgrades for remaining foundations and its framing at 130 Allyn.

We had evaluated the 2006 slide at the road shoulder and developed criteria for a drilled and anchored bulkhead, which we had submitted in a July 2006 report with soil profile sections. We monitored its installation later that year. The structural engineer was Greg Miller of Novato. Remediatioin of the slide at the Allyn Ave terminus shoulder was monitored by us at the same time, but was essentialy unrelated to the subject slide.

Later in 2008, we provided geotechnical criteria for the new parking pad at 130 Allyn, that is restrained by a drilled bulkhead,& monitored its installation. We also assisted in the remedial measures for upgrading its foundations which included drilled piers and tiebacks. The structural engineers for those operations were Utzman Consulting of Mill Valley.

The Allyn Ave slide had continued for ~1 week during the unseasonable rains of April 2006, and extended for nearly 100 ft along Allyn Ave. The outer half of the roadway had dropped ~5 ft, over a ~60 ft length, which bordered most of the 136 Allyn property and a ~10 ft segment of the 130 Allyn parcel. The remainder of the slide displayed little or no roadway subsidence.

The bulkheads, that sustained the parking areas at 136 Allyn, and extended along the frontage of 136 Allyn, had shifted. The 136 Allyn dwelling had experienced sufficient distress from earth movement to require its demolition. The 130 Allyn Ave dwelling to the south was damaged and its garage unit on its north was removed. We did not participate in its investigations for the 136 Allyn dwelling distress, nor were we involved with its subsequent litigation.

The 136 Allyn foundation distress resulted from a general slide which extended further downslope and onto 130 Allyn Ave. From extrapolation from our data at 130 Allyn, and observations of a single test boring at the downslope corner of 136 Allyn, we judged that it was confined to the mantle soils, and possibly the upper foot of residual soils/ highly weathered bedrock. The mantle soils were found to be ~5 ft thick--and possibly greater where fill had been placed.

It is apparent that the shift of the drilled I-beam and timber post bulkheads, whichsustained the parking pad and roadway shoulder accross the frontage of the demolished house, resulted from loss of support within their saturated supporting mantle soils. The increased pressures from saturation of the backfill and inadequate post embedments were contributors.

These bulkhead shifts were the prime contributor to the movements of the roadway and parking areas. However they did not cause the general slide that resulted in the 136 and 130 Allyn foundation distress. These foundation movements are unrelated t and would have would have occured without the bulkhead shifts.

Given the general extent of the slide which included both parcels,, we have not been able to define a cause and effect relationship between the foundation movements at 130 and 136 Allyn Avenue.

Respectfully Submitted

GEOENGINEERING INC

Robert Settgast

Robert Settgast
Professional Geotechnical Engineer

Photos Attached

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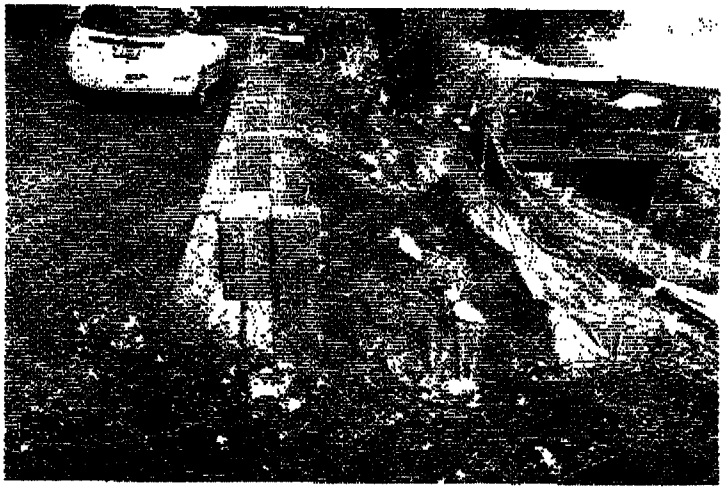
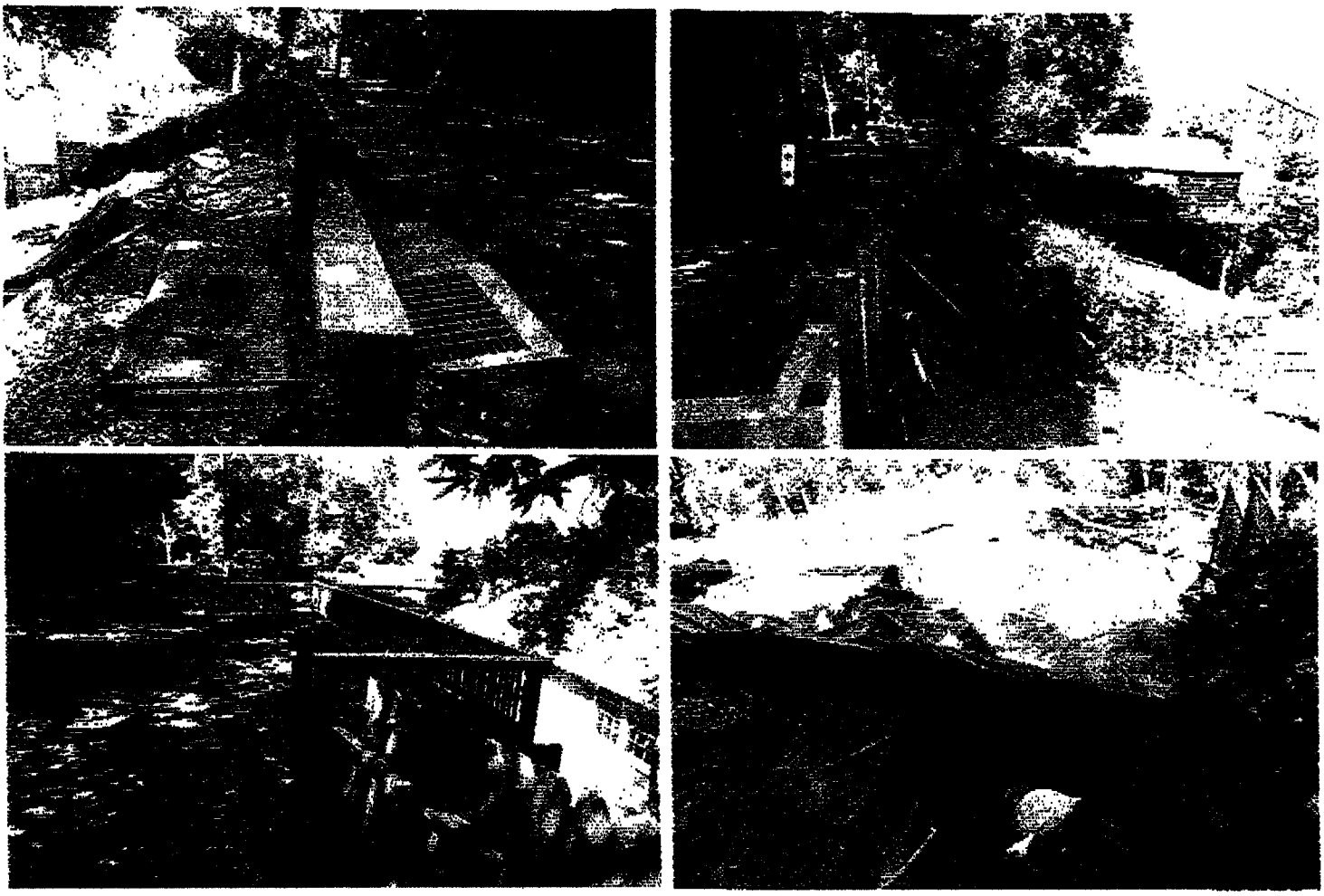


2006 Allyn Ave Slide
130 & 136 Allyn Ave
San Anselmo, CA



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