ENGINEERING GEOLOGY
SECTION

AUG 18 1975

Engineering Geologic Report
Por. NW 1/4, NE 1/4, Sec. 18
T1S, R16W, SBBM
1.05 Acres near Colina Road
Topanga, California
Project 52851

AUG 18 1975

2225 Colina Road
Topanga

1732 Plan Check

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June 26, 1975

Engineering Geologic Report
Por. NW 1/4, NE 1/4, Sec. 18, T1S, R16W, SBBM
1.05 Acres near Colina Road
Topanga, California

Project 52851

Ray Stroeber
22107 Del Valle Street
Woodland Hills, California 91364

Dear Mr. Stroeber:

In accordance with your instructions, an engineering geologic investigation has been conducted to identify geologic elements that may affect residential development served by a private sewage disposal system. Investigation included examination of exposures in seven backhoe pits, and observation of nearby outcrops and exposures. To supplement field studies, review was made of Preliminary Geologic Map of the Unincorporated Part of the Topanga Quadrangle (1973), by U. S. Geological Survey. A Plot Plan, prepared by the addressee, serves as the topographic base map. Two sections depict subsurface conditions.

Location and Topographic Expression:

Subject parcel occupies part of a north-facing slope overlooking the confluence of Topanga Canyon and Old Topanga Canyon. It is about midway between Encina Road and Colina Road, and is accessible from Colina Road by private easement.

Grading is estimated to have been performed more than 15 years ago,

when the cut slope was excavated at about 1 1/2:1, about 8 feet high. Natural slopes range from 3:1 to 4:1.

The parcel occupies part of a broad gentle swale, with a poorly defined drainage channel entering its southeast corner. Runoff from the pad flows into the channel. The west lot narrows to the west near a broad, low ridge, where other building pads have been graded.

Dense, waist high wild grass covers the lot. The fill slope below the pad and the area near the drainage channel contain shrubs, and a few pepper trees grow just beyond the east property line.

Runoff is by sheet flow that has caused no serious erosion.

Geology:

The U. S. Geological Survey (1973), suggests that the subject parcel is within a large, ancient landslide, but subsurface data verify only a small slump, concealed by and flanked by thick, creep-prone residual soil.

Fill, topsoil and slump debris comprise surficial deposits. Each is loose, but moderately expansive. Fill ranges to 5 feet thick, and is composed of soil and bedrock excavated within the site. It is creep-prone and must be penetrated by footings that derive support in bedrock.

Topsoil is black expansive clay about 3 feet thick. Locally it is sandy or silty. Clayey soil is moderately stiff, and damp. It can be considered loose as shrinkage cracks 1/2 inch wide extend downward through the soil.

Creep is, for the most part, limited to the topsoil, but may affect the

transition zone between soil and bedrock. If saturated, soil is creep-prone on slopes steeper than 3:1.

Slump debris about 10 feet thick forms a band across the central area of the parcel. It is marked by a low scarp nearly obliterated by grading. It consists of broken contorted, and deeply weathered thin bedded clay shale and sandstone derived from the Topanga formation. The slide plane is well-defined in backhoe trench 7, where clay gouge dips downslope at 28 degrees. Gouge is strongly slickensided, and is underlain by competent, undeformed strata. The slump is judged to be creep-prone, and not suitable as foundation.

Bedrock units of the Topanga formation are predominately black-brown clay shale with rare interbeds of yellow-brown sandstone, and thin limy shale or impure limestone beds. The rocks are firm, highly jointed, and well bedded. They dip steeply northeast (see map and sections).

Conclusions and Recommendations:

Subject property contains a small slump in its central area, but suitable building sites are east and west of the slump. Construction is feasible, provided that applicable elements of the County Building and Grading Ordinance are incorporated in plans along with recommendations of the project consultants:

1) Footings for the dwelling and garage should penetrate creep-prone soil, fill, and weathered bedrock, and bear on competent bedrock approved by the engineering geologist. Alternatively, these unsuitable materials may be stripped and compacted to current engineering standards. This process could

be extended to include the slump debris, to gain more effective use of the building site.

2) Leachfield may cause the soil to creep. One or more seepage pits excavated should be excavated on the low ridge at the westerly end of the lot. More than likely, several pits will be required to attain the required percolation rate.

3) Runoff from the roof, yard and driveway should be collected and piped into the natural drainage course east of the pad.

4) Grading, unless corrective in nature, is discouraged. Fill must be keyed and benched into competent bedrock verified by the engineering geolgist and soil engineer. The grading plan should be reviewed by the geologist.

Thank you for this opportunity to be of service. Please call if there are questions regarding this report.

Very truly yours,

REGISTERED GEOLOGIST JOHN D. MERRILL STATE OF CALIFORNIA

John D. Merrill

Engineering Geologist 83

JDM:sh

JOHN D. MERRILL
ENGINEERING GEOLOGISTS

Project 52851 Logs of Backhoe Pits

Note: Attitudes are bearing and inclination of dip.

P-1

0-2.0 ft.	TOPSOIL: Adobe clay; black; expansive; creep-prone.
2.0-3.0 ft.	WEATHERED BEDROCK-TRANSITION ZONE: Shale; clayey; dark brown, brecciated.
3.0-6.0 ft.	TOPANGA FORMATION: Sandstone; yellow-brown; moderately hard, well cemented with wide spaced, blocky fracture planes.
6.0-12.0 ft.	Clay shale; black with brown, tarnished fracture planes. Stringers of yellow-brown sandstone. Shale is firm, damp, and well bedded. Thinly laminated. Bedding planes 074/36; 073/36, and 075/43.

P-2

0-10.0 ft.	SLUMP DEBRIS: Mottled-gray-brown; very clayey; moderately soft, moist, slightly plastic. Fragments of shale, sand and blocky sandstone, soft, slick clay gouge at base. (not slickensided).
10.0-14.0 ft.	TOPANGA FORMATION: Clay shale; dark brown-gray, highly jointed, well-bedded. Includes low grade coal lens. Bedding planes 030/42; 028/45; 035/46 and 060/30.

P-3

0-1.0 ft.	WEATHERED BEDROCK: (Topsoil has been stripped) Clay; very expansive, with many small, brittle and soft fragments of the underlying shale.
1.0-10.0 ft.	TOPANGA FORMATION: Clay shale; dark brown-gray, grades down to whitish-brown diatomaceous shale, and dark brown-gray clay shale. Beds are firm, with numerous joints perpendicular to bedding planes. Bedding planes 065/42; 076/42; 076/38 and 075/41 Bottomed on very hard limestone.

Logs of Backhoe Pits

P-4

0-2.5 ft.	TOPSOIL: Clay; balck; expansive; sandy to silty.
2.5-6.0 ft.	SLUMP DEBRIS: Broken fragments of silty claystone, clay shale and sandstone; deeply weathered. @ 6.0 ft. Topanga formation; bottomed on hard, blocky sandstone. No slide plane (possibly near toe).

P-5

0-3.0 ft.	TOPSOIL: Adobe clay; black; expansive.
3.0-7.0 ft.	TOPANGA FORMATION: Clay shale; brown, and yellow-brown sandstone; dense, firm, well bedded. Shale beds somewhat deformed. Bedding planes 115/21 and 080/20

P-6

0-3.0 ft.	TOPSOIL: Clay; black; expansive.
3.0-6.0 ft.	SLUMP DEBRIS: Sandstone; orange-brown; and clay shale; brecciated. Vertically fractured: Debris is heavily weathered, clayey, creep-prone. Disoriented bedding 090/15 to 180/18

P-7

0-2.0 ft.	WEATHERED BEDROCK: Clayey soil with many chips of soft, clay shale.
2.0-8.0 ft.	SLUMP DEBRIS: Sandstone; blocky, with strongly deformed clay shale. Strongly fractured and sheared.
8.0-9.0 ft.	TOPANGA FORMATION: Clay shale; brown, well bedded. Beds 065/31 and 080/28

Return to Jim Roblek

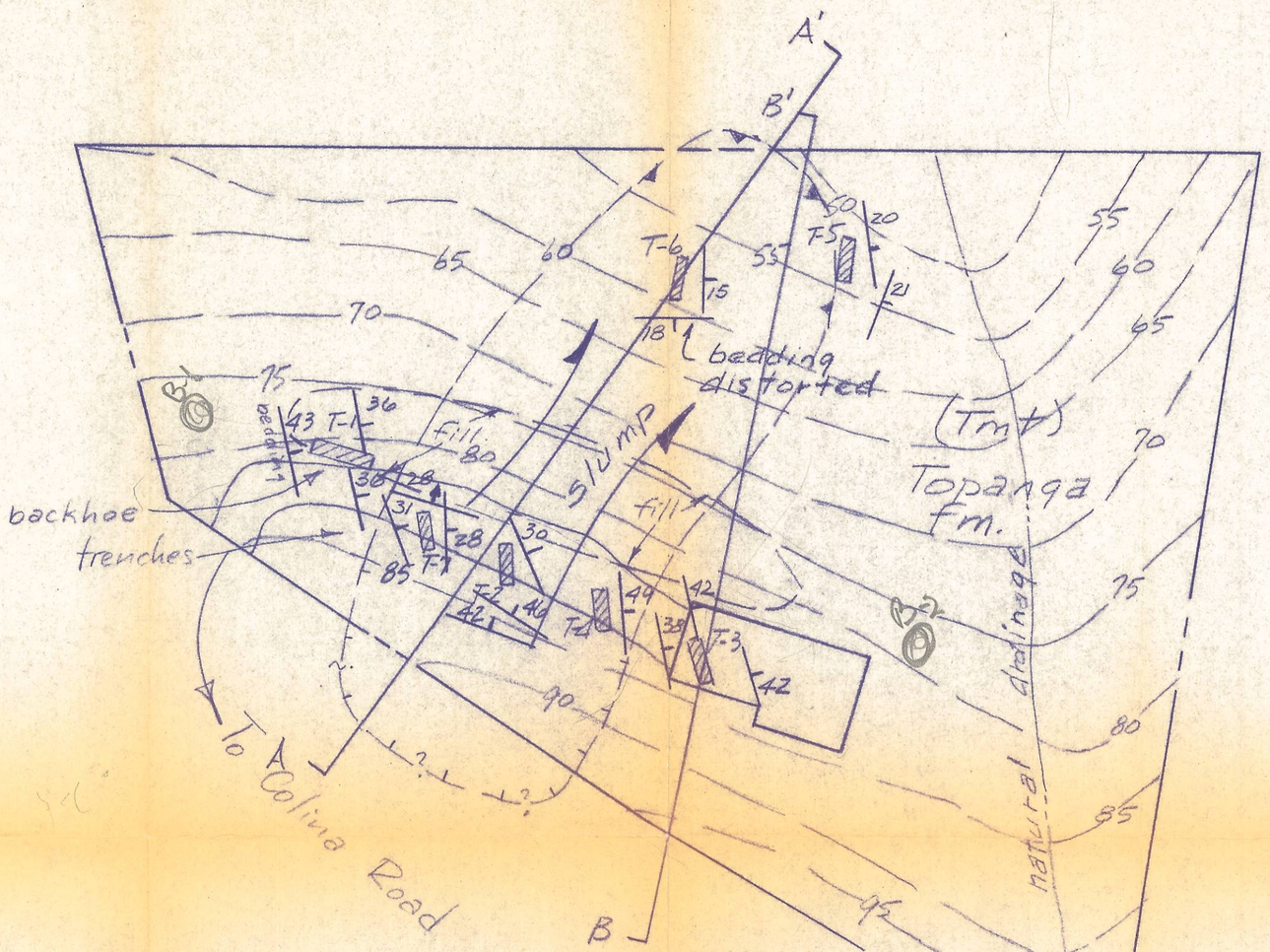
GEOLOGIC SKETCH MAP

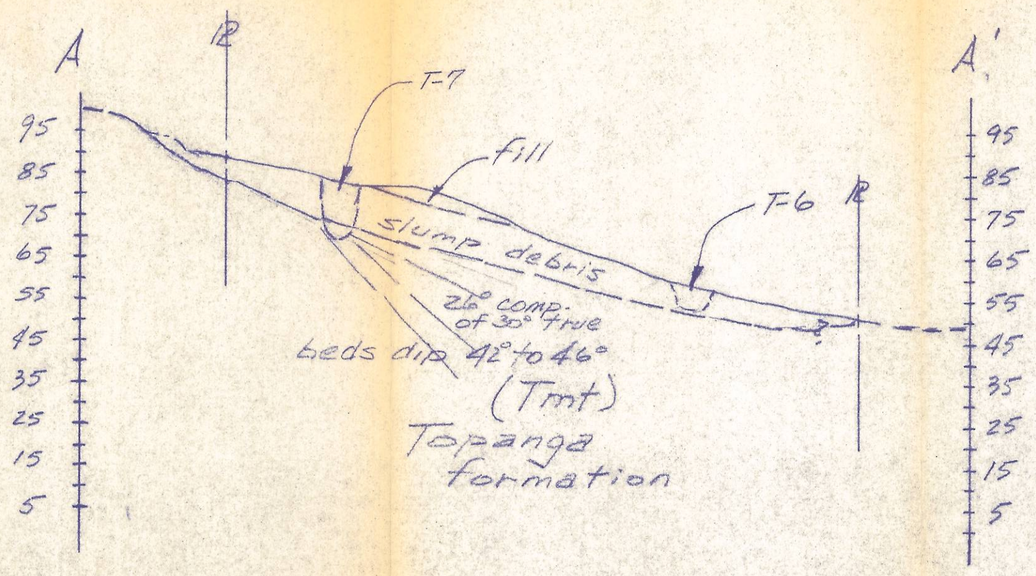
21225 Colina

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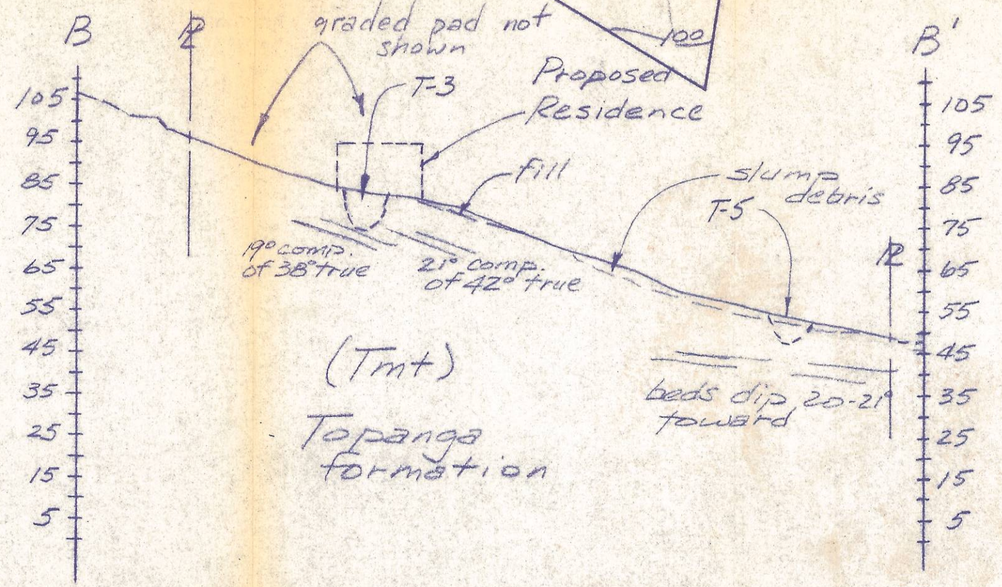
Scale: 1"=30'

POR. NW 1/4 of NE 1/4
SEC 18 Assessors M.B.
4445-23-36





SECTION A-A'
Scale: 1"=30'
H. & V.



SECTION B-B'
Scale: 1"=30'
H. & V.

NOTE: This map redrawn from Plot Plan furnished by Ray Stroeber