APPLIED CONSULTANTS
environmental geology & engineering

3040 Clairemont Dr.
Suite B
San Diego, CA
92117
TEL (619) 275-6577
FAX (619) 275-6947

October 24, 2000

Tait Residence
16866 Circa del Sur
Fair Banks Ranch, CA

hydrogeology
geotechnical services
environmental services
structural engineering
forensic engineering

Subject: Floor Level Survey of 16868 Circa del Sur, Rancho Santa Fe, California

Dear Mr. and Mrs. Tait:

In accordance with your request Applied Consultants has performed a floor level survey of your former residence located at 16868 Circa del Sur, Rancho Santa Fe, California. The purpose of this floor level survey was to compare the results of the floor level survey conducted on 11/17/92 to the results of the current floor level survey which was conducted on 9/28/00. This report presents our findings, conclusions and recommendations.

PROCEDURE

A floor level survey consists of measuring the relative elevation differences over a given surface. This is accomplished using a water level manometer apparatus. During the floor level survey, the reservoir to the manometer is placed in a stationary location and the measurement staff is moved about the structure. Plastic tubing connects the reservoir to the measuring staff and changes in the water level on the measuring staff represent changes in slab elevation. These elevation changes are measured in tenths ($^1/_{10}{}^{th}$) of an inch. The individual measurements are plotted on a floor plan.

If the slab level changes (i.e. sunken living rooms, garages, etc.), the reservoir location is changed, and the measurements are recorded separately. For this residence, there were four (4) separate floor slab measurements. The areas measured separately are as follows:

a. Family Room/Kitchen/Hallway/Dining Room/Entryway
b. Sunken Living Room
c. Western Bedroom Suite
d. Garage

DATA PROCESSING AND GRAPHING

With the completion of the field measurements, the data was returned to Applied Consultants' office where the data was processed. Data processing consisted of normalizing the data for each area measured to the lowest measurement. Then a graphical contour was constructed using the location

of the measured point (plotted in an X-Y grid) and the normalized measurement. This graphical contour was then overlain on the floor plan of the structure to identify areas of movement (Figure 1).

FINDINGS

Applied Consultants floor level survey of the subject property determined the following:

	Location	Max Measured Deflection (from horizontal)
a.	Family Room/Kitchen/ Hallway/Dining Room/Entryway	2.2"
b.	Sunken Living Room	1.5"
c.	Western Bedroom Suite	1.3"
d.	Garage	1.1"

FLOOR LEVEL SURVEY RESULTS COMPARISON

As stated in the beginning of this report, the purpose of this floor level survey was to compare the results of the floor level survey conducted on 11/17/92 to the results of the current floor level survey which was conducted on 9/28/00. The following table compares the two sets of measurements:

Location	11/17/92	9/28/00	Difference ($^{1}/_{10}^{th's}$)
Family Room/Kitchen Hallway/DiningRoom /Entryway	2.4"	2.2"	-0.2"
Sunken Living Room	1.2"	1.5"	+0.3"
Western Bedroom Suite	1.6"	1.3"	-0.3"
Garage	0.6"	1.1"	+0.5"

CONCLUSIONS

As the table indicates there is still some ground movement occurring at the subject property. However, rather than a uniform change in all measured areas, there is a disparity in movement. The Sunken Living Room and Garage appear to be continuing to dip toward the southwest, while in the other measured areas there appears to have been some settlement or flattening.

Since the structure was fully constructed by March 1990, the majority of the ground movement appears to have occurred in the first two years after construction. The greatest amount of movement in the intervening eight years between the two measurement sets is 0.5" (see table above). This marked decrease in ground movement indicates that the majority of soils settlement has occurred.

RECOMMENDATIONS

Applied Consultants recommends that another floor level survey of the subject property be conducted after the passage of six months from this date. The purpose of this measurement will be to validate that the soil settlement has slowed or stopped. If there is no apparent additional settlement at the subject residence a report will be issued clearing the residence from an engineering standpoint.

We appreciate the opportunity to present this report. Please call our office if you have any questions.

Sincerely,

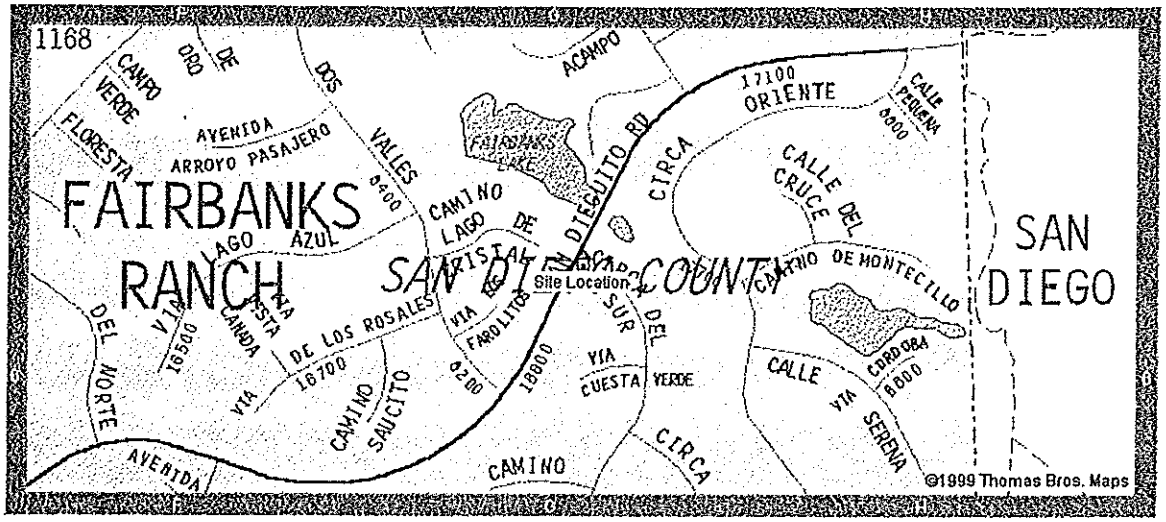
Denise Litt
Staff Geologist

Christopher J. Maxin
Project Manager, RG 6715

Bernard J. Luther, CEG 1356, CH 379
President

CERTIFIED ENGINEERING GEOLOGIST
BERNARD J. LUTHER
7/01
No. CEG1356
STATE OF CALIFORNIA

REGISTERED GEOLOGIST
CHRISTOPHER J. MAXIN
10/01
No. 6715
STATE OF CALIFORNIA



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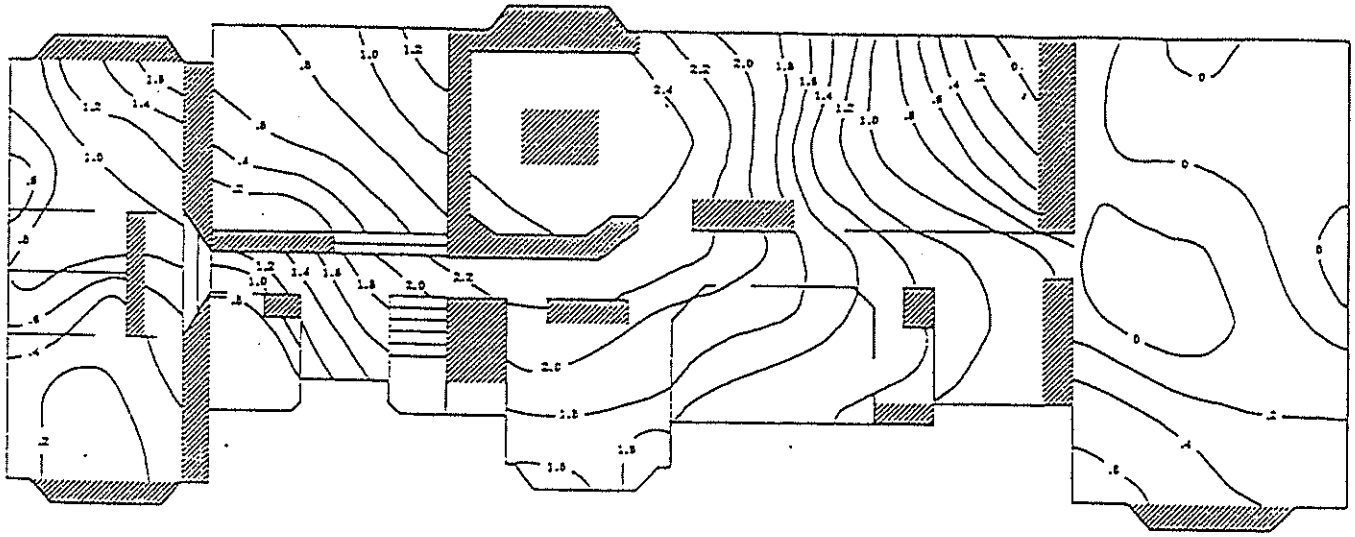
Geographic Location
16866 Circa del Sur
Fairbanks Ranch, California 92067

Lat. 32° 59min. 59sec.
Long. 117° 10min. 36sec.
Elevation: 182ft MSL

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Site Location Map
16866 Circa del Sur
Fairbanks Ranch, CA

Fig. 1



Legend

- Main Manometer
- Living Room Manometer
- Bedroom Manometer
- Garage Manometer

N

0 10' 20'

SCALE

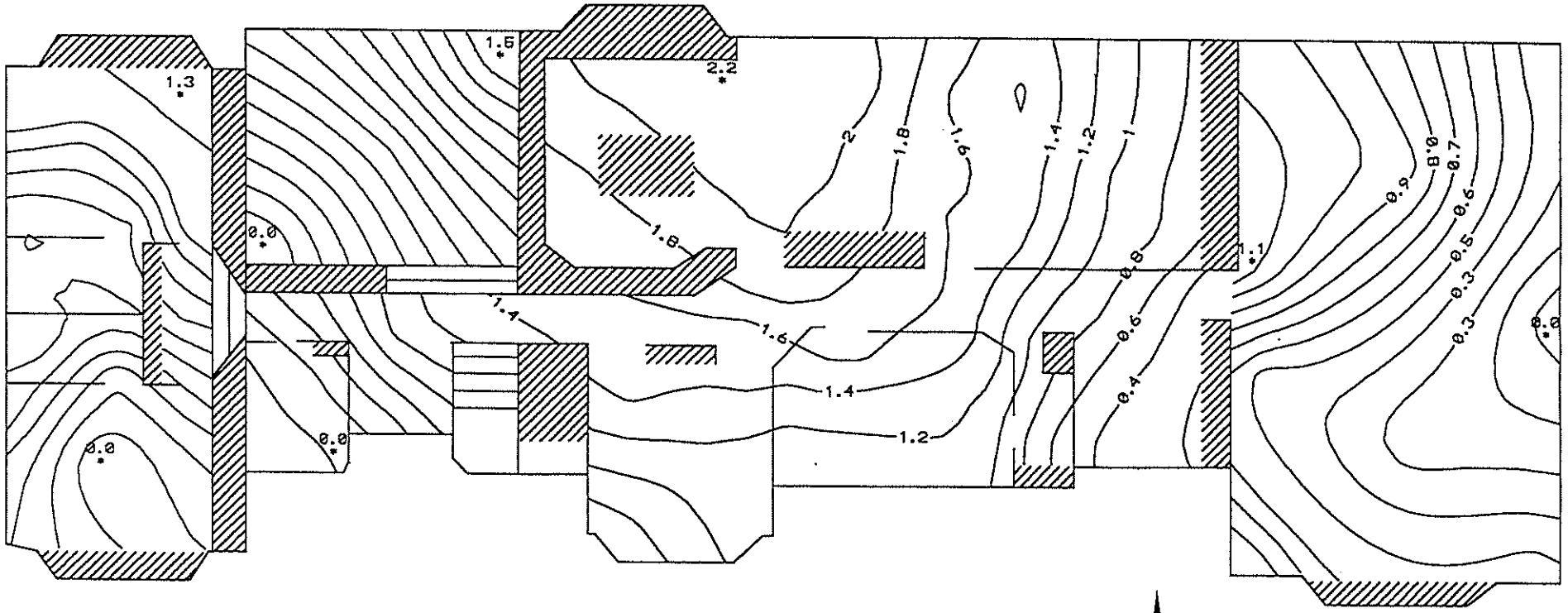
ALL DIMENSIONS AND LOCATIONS ARE APPROXIMATE

DATE SURVEYED: 9 DECEMBER 1992

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WINTERS – TAIT RESIDENCE
FLOOR LEVEL SURVEY

Fig. 3



LEGEND

Level 1

Level 2

Level 3

Level 4

N

0 10' 20'

Scale

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TAIT RESIDENCE
FLOOR LEVEL SURVEY

Fig. 2

Floor Level Survey
Tait Residence
16868 Circa del Sur
Fairbanks Ranch, CA

APPLIED CONSULTANTS
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3040 Clairemont Dr.
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March 22, 2001

Tait Residence
16866 Circa del Sur
hydrogeology Fair Banks Ranch, CA

geotechnical services Subject: Follow Up Floor Level Survey of 16868 Circa Del Sur, Rancho Santa Fe, California

environmental services

Dear Mr. and Mrs. Tait:

structural engineering

In accordance with your request Applied Consultants has performed a follow up floor level survey of your former residence located at 16868 Circa Del Sur, Rancho Santa Fe,
forensic engineering California (Figure 1). The purpose of this floor level survey was to compare the results of the floor level survey conducted on 9/28/00 to the results of the current floor level survey which was conducted on 3/19/01. This report presents our findings, conclusions and recommendations.

PROCEDURE

A floor level survey consists of measuring the relative elevation differences over a given surface. This is accomplished utilizing a water level manometer apparatus. During the floor level survey, a reservoir to the manometer is placed in a stationary location and a measurement staff is moved about the structure. Plastic tubing connects the reservoir to measuring staff and changes in the water level on the measuring staff represent changes in slab elevation. These elevation changes are measured in tenths ($^{1}/_{10}^{th}$) of an inch. The individual measurements are plotted on a floor plan.

If the slab level changes (i.e. sunken living rooms, garages, etc.), the reservoir location is changed, and the measurements are recorded separately. In the subject residence, there were four (4) separate floor slab measurements. The areas measured separately are as follows:

a. Family Room/Kitchen/Hallway/Dining Room/Entryway
b. Sunken Living Room
c. Western Bedroom Suite
d. Garage

FINDINGS

Applied Consultants floor level survey of the subject property determined the following:

	Location	Max Measured Deflection (from horizontal)
a.	Family Room/Kitchen/ Hallway/Dining Room/Entryway	2.3"
b.	Sunken Living Room	1.4"
c.	Western Bedroom Suite	1.2"
d.	Garage	1.2"

FLOOR LEVEL SURVEY RESULTS COMPARISON

As stated in the beginning of this report, the purpose of this floor level survey was to compare the results of the floor level survey conducted on 9/28/00 to the results of the current floor level survey which was conducted on 3/19/01. The following table compares the measurements:

Location	9/28/00	3/19/01	Difference ($^{1}/_{10}^{th's}$)
Family Room/Kitchen Hallway/DiningRoom /Entryway	2.2"	2.3"	+0.1"
Sunken Living Room	1.5"	1.4"	-0.1"
Western Bedroom Suite	1.3"	1.2"	-0.1"
Garage	1.1"	1.2"	+0.1"

CONCLUSIONS

As the table indicates, no appreciable ground movement has occurred at the subject property. The home was fully constructed in 1990, the majority of the ground movement appears to have occurred in the first two years after construction.

RECOMMENDATIONS

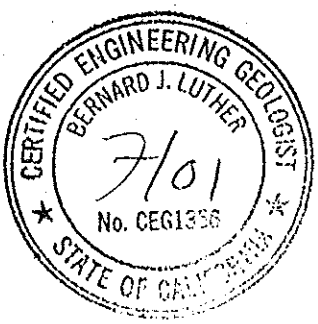
Applied Consultants recommends that no further work is needed.

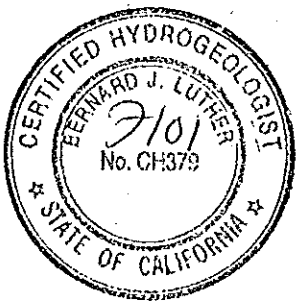
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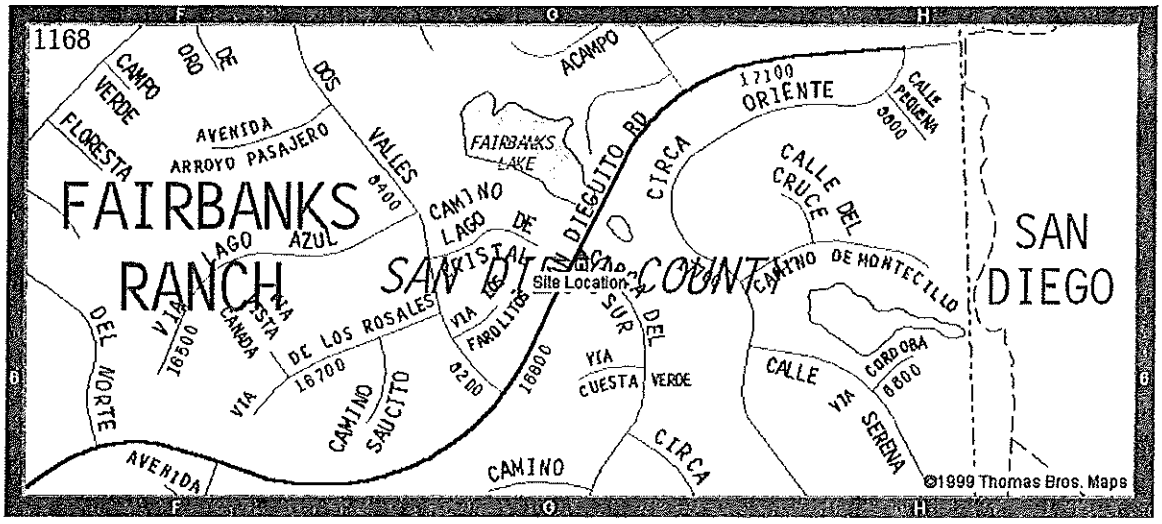
Sincerely,

Denise Litt
Project Manager

Bernard J. Luther, CEG 1356, CH 379
President







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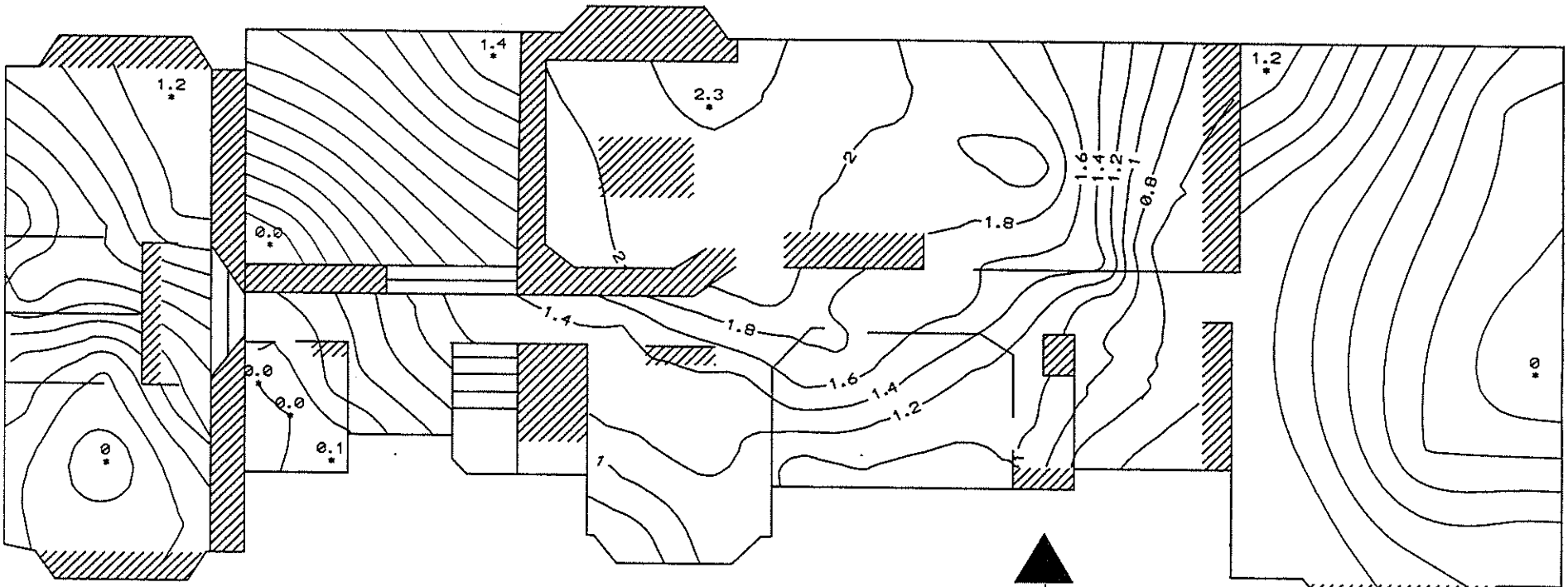
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Elevation: 182ft MSL

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Site Location Map
16866 Circa del Sur
Fairbanks Ranch, CA

Fig. 1



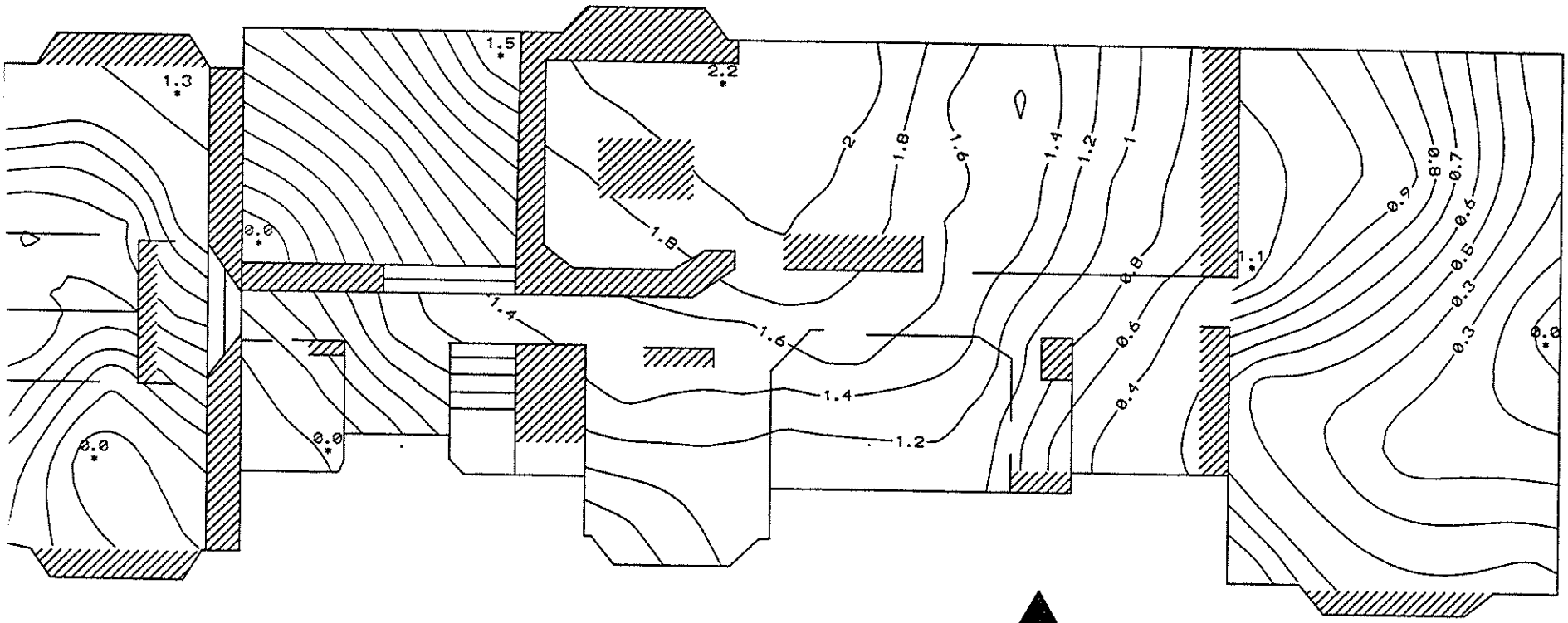
LEGEND

- Level 1
- Level 2
- Level 3
- Level 4

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TAIT RESIDENCE
FLOOR LEVEL SURVEY

Fig. 2
3/19/2001



LEGEND

Level 1

Level 2

Level 3

Level 4

N

0 10′ 20′

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TAIT RESIDENCE
FLOOR LEVEL SURVEY

Fig. 3
9/28/2000