GEOLOGIC EVALUATION
Proposed Building Site Approval
22187 1/2 Old Santa Cruz Hoghway
Santa Clara County, California

PREPARED FOR:

Mr. Dennis Webb
22187 Old Santa Cruz Highway
Santa Clara County, California 95034

PREPARED BY:

Buckley Engineering Associates
3452 Lisbon Drive
San Jose, California 95132
(408) 942-6952

August 18, 1998

7009-98B(R1)

BUCKLEY ENGINEERING ASSOCIATES
Geotechnical Engineering and Geology

3452 Lisbon Drive
San Jose, CA 95132
Phone: 408/942-6952
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August 18, 1998
Job #98364.1

Mr. Dennis Webb
c/o Mr. Velimir Sulic
Masons-Sulic, Inc.
2021 The Alameda, Ste. 195
San Jose, CA 95126

RE: GEOLOGIC EVALUATION
Proposed Building Site Approval
22187 1/2 Old Santa Cruz Highway
Santa Clara County, California

Dear Mr. Webb:

INTRODUCTION

As authorized, we have performed a geologic evaluation for the proposed building site approval at the referenced location (Vicinity Map, Plate 1). According to development plans which your Civil Engineer provided to us, the project consists of a small, one-story, wood-frame house with attached two-car garage (Plate 3). Our work was done in order to satisfy Item #2 in the Santa Clara County letter, dated 7-2-98. It consisted of review of aerial photographs and geologic reports covering nearby properties, approximately 1 hour of site reconnaissance and preparation of this report. The photographs and reports which we reviewed are listed under "References" in this letter.

SITE GEOLOGY

The site is located on the eastern slope near the summit of the Santa Cruz Mountains at an elevation of about 1500 feet. The site area slopes moderately to the northeast; relief across the site is estimated to be about 15 feet (Cross Section, Plate 4).

According to Dibblee & Brabb (1978), the site is underlain by the Rice's Mudstone Member of the San Lorenzo Formation, including glauconitic sandstone, as well as mudstone (Area Geologic Map, Plate 2). Large ancient landslide deposits are mapped southeast of the site.

During our site reconnaissance, we observed cut slope exposures of severely and closely fractured, friable, brown

siltstone-mudstone and massive, fractured fine-grained sandstone. Bedding attitudes measured on the siltstone sandstone contact were N30W 60W. These attitudes roughly correspond to the bedding mapped by Dibblee and Brabb in the site area.

The property is located approximately half way between the ridgetop spreading features associated with the 1989 Loma Prieta Earthquake and the active San Andreas Fault, located about 1500 feet to the northeast. However, the site is not located within the San Andreas Fault Special Studies Zone, and no fault trace has been mapped to pass through your property. On the aerial photos (see References), we did not observe any evidence, such as lineaments, of faults passing through the site.

The building site is located on a cut/fill pad excavated into the hillside some time in the past. Relatively steep, un-supported cut and fill slopes characterize the site (Engineering Geologic Map, Plate 3). We observed an eroded gully approximately 30 feet south of the fork in the driveway (not mapped). The gully appeared to form as a result of driveway runoff crossing the pavement from the upper fork to the lower and than spilling over on the downhill side. The gully directed storm runoff to Old Santa Cruz Highway below the site.

GEOLOGIC HAZARDS

On the basis of current research, a major earthquake is expected to affect the Bay Area within a 50-year lifetime of the building. A major earthquake generated on the San Andreas, Fault could produce violent ground shaking at the site. The risk of fault rupture or fracturing is low due to the distance of the site to mapped fault traces and ridge-top spreading features.

The property is located within the County Ds Zone (high potential for landslides). In addition, on the aerial photographs, we observed a deeply eroded lobate and stepped nose of a ridge encompassing the site. This form is suggestive of an ancient landslide deposit. However, we did not observe evidence at the site, such as fresh scarps or arcuate ground cracks, suggestive of recent landslide movement. Although it is possible that a major earthquake could trigger landsliding which might affect the site, the risk of such landsliding occurring is no more than the risk assumed by property owners in the general area.

Earthquake-induced settlement or lateral spreading of the fill underlying the house is possible, since it appears that the

fill settlement has caused cracking of the floor slab. We observed a localized depression at the top of the fill slope below the house just north of the property line. We expect that settlement of the fill will continue to occur over the lifetime of the building.

Liquefaction during earthquakes is not expected to affect the site, due to the presence of shallow bedrock. Flooding is not anticipated because of the relative high elevation and distance to major creeks.

In our opinion, there are no potential geologic hazards which would prohibit approval of the improvements to the property. Earthquake shaking can be mitigated by design according to the latest applicable seismic standards. Proper grading and good surface drainage will mitigate the possibility of slope failures. Surface drainage improvements, such as directing roof runoff to approved discharge locations would likely decrease the rate of fill settlement, affecting the building. Driveway drainage improvement would control erosion of the downhill side of the pavement.

REFERENCES

Associated Terra Consultants, "Geologic and Soils Investigation APN: 558-05-022 and -025 22420 Old Santa Cruz Highway, Santa Clara County, California," 6-8-92.

Brabb, E.E. and Dibblee, T.W., "Preliminary Geologic Map of the Castle Rock Ridge Quadrangle, Santa Clara and Santa Cruz Counties, California," 1978.

California Division of Mines & Geology Special Studies Zones, Los Gatos Quadrangle, 1982.

Terrasearch, Inc., "Geologic/Seismic Investigation 22700 Old Santa Cruz Highway, Santa Clara County, California," 2-13-89.

U.S.G.S. Library, Aerial Photograph Stereo Pairs: SCL 11-117,118 black & white, 1:12,000, 5-16-65; GS-VBZK 2-64-65 1:20,000, 6-13-68; GS VEZR 2-172,173 1:24,000, 10-29-80.

LIMITATIONS

This report has been prepared in accordance with generally accepted geologic principles and practices. No warranty is given, either expressed or implied.

If you have any questions concerning this letter, please call our office.

Very truly yours,

BUCKLEY ENGINEERING ASSOCIATES

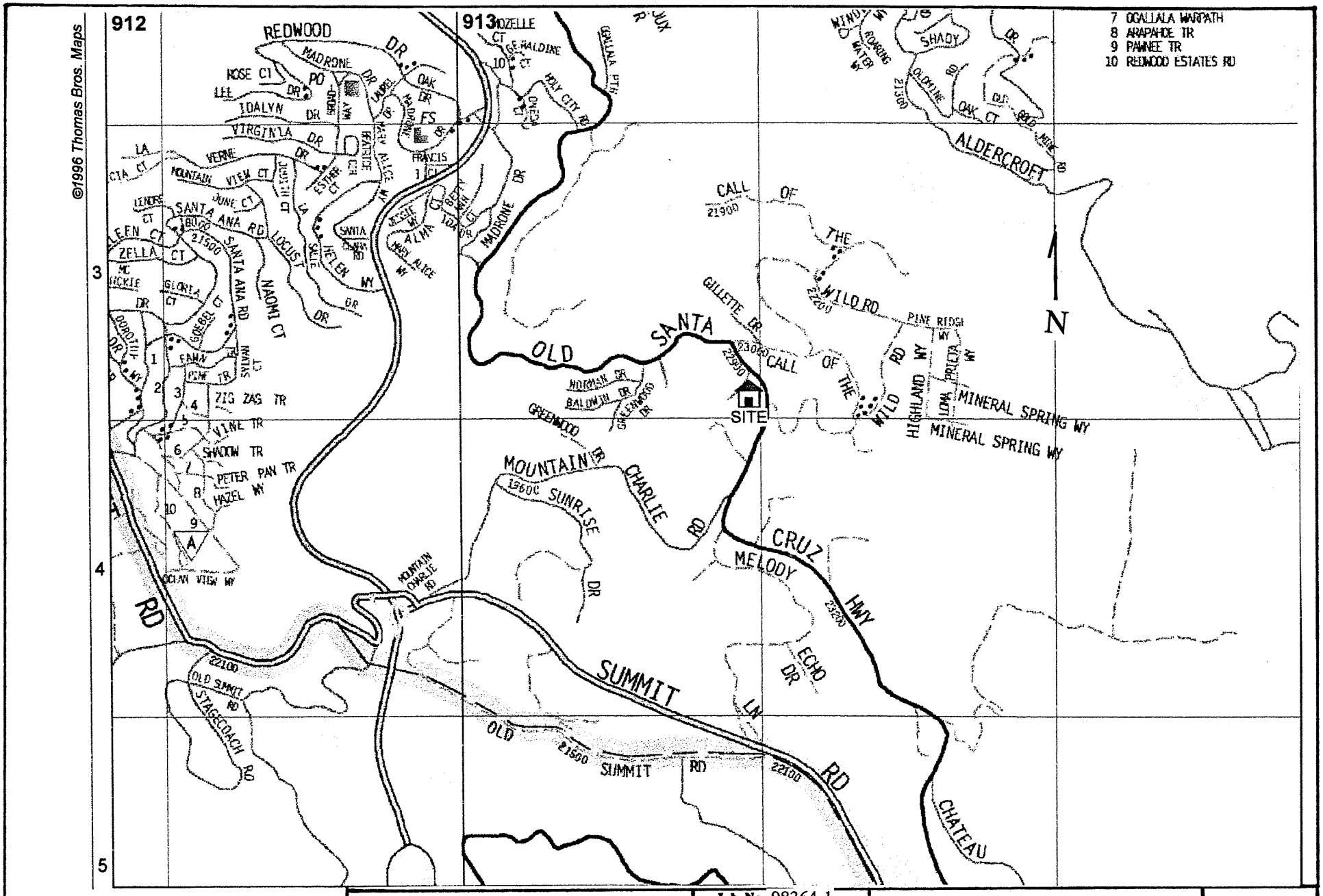
David W. Buckley

David W. Buckley
Certified Engineering Geologist 1110

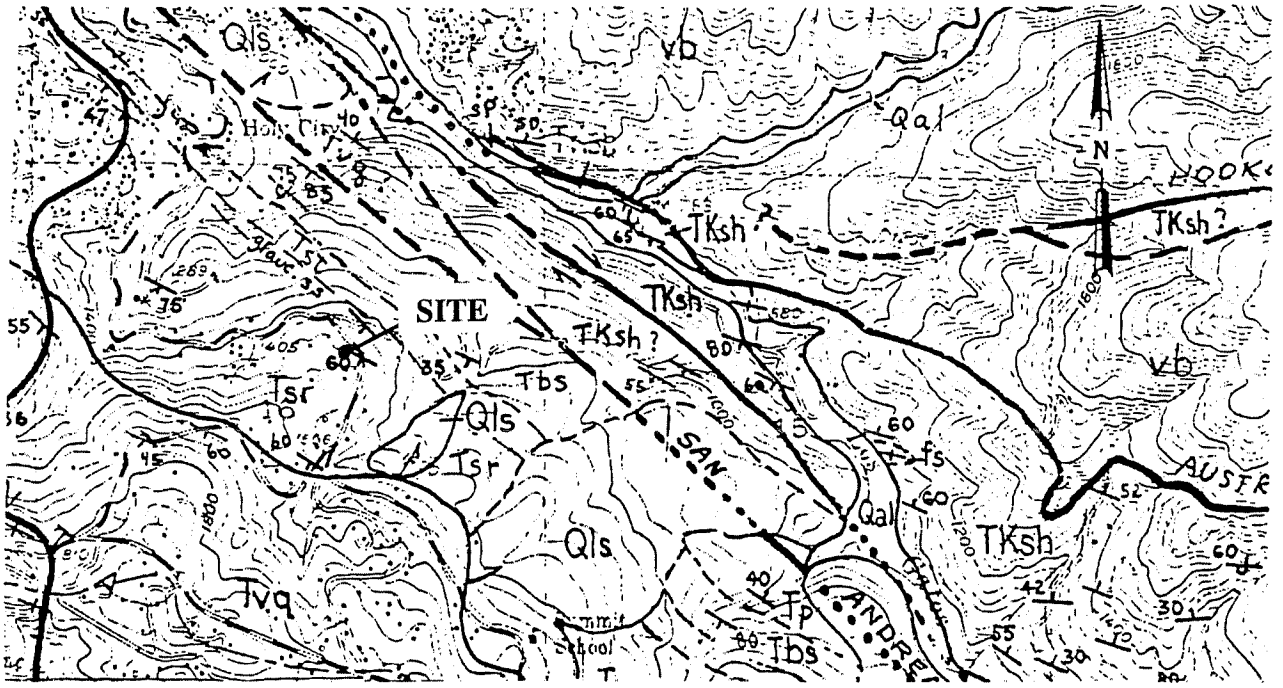
REGISTERED GEOLOGIST
DAVID W. BUCKLEY
No. EG 1110
CERTIFIED
ENGINEERING
GEOLOGIST
STATE OF CALIFORNIA

Attachments: Vicinity Map, Plate 1
Area Geologic Map, Plate 2
Engineering Geologic Map, Plate 3
Geologic Cross Section, Plate 4

Distribution: 5 to Addressee



Buckley Engineering Associates	**Job No.** 98364.1 **Approved** **Date** 8-18-98	VICINITY MAP Old Santa Cruz Hwy. Santa Clara Co., CA	**Plate** 1



Base: Dibblee & Brabb (1978)

Scale: 1 inch = 2000 feet

EXPLANATION

Qls = Landslide

Tb = Butano Sandstone

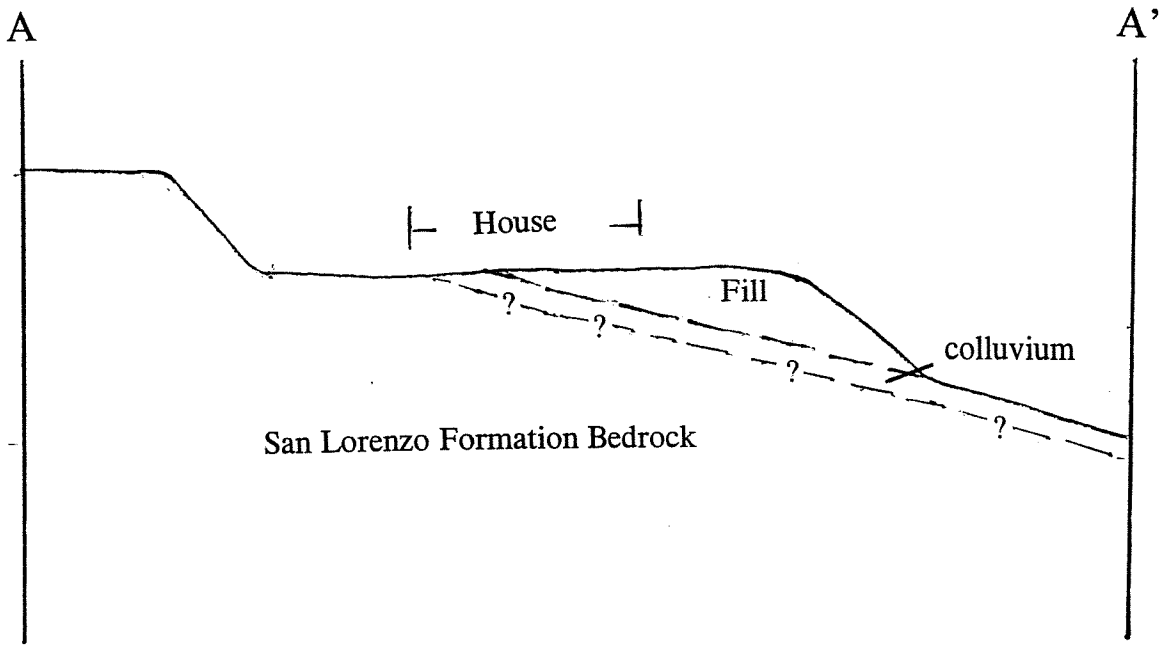
Tst = San Lorenzo Formation (Twobar Shale)

Tsr = San Lorenzo Formation (Rice's Mudstone)

Buckley Engineering Associates	**Job No.** 98364.1 **Approved** JWB **Date** 8-18-98	AREA GEOLOGY Old Santa Cruz Hwy. Santa Clara Co., CA	**Plate** 2

GEOLOGIC CROSS SECTION

Scale: 1 inch = 20 feet (H=V)



Buckley Engineering Associates	Job No. 98364.1 Approved DWB Date 8-18-98	CROSS SECTION Old Santa Cruz Hwy. Santa Clara Co., CA	**Plate** 4

Water:	Existing Well
Electric:	P.G. & E.
Gas:	Propane
Telephone:	Pacific Bell
Cable TV:	T.C.I.
Storm:	Existing Culverts & natural swales

NOTES:

1. OWNER: Mr. and Mrs. Dennis Webb
   22187 1/2 Old Santa Cruz Highway
   San Jose, California
2. Property lines shown are record data only.
3. Bearings and distances shown are record data only.

SITE PLAN

SCALE: 1" = 20'

COUNTY FILE NO.: 7009-29-41-98B

SLOPE ANALYSIS
Within Development Line

Total Site Area		=	**1.00 Ac. Net = 100%**
Total Development Area		=	0.49 Ac. = 49%
Average Slope	**S**	=	In % (percent)
Contour Interval	**I**	=	2 Feet
Combined Length of Contour Lines	**L**	=	1,255 Linear Feet
Area in Acres	**A**	=	0.49 Acres
$S = \frac{I \times L \times 0.00229}{A}$	**S**	=	11.73%
Beginning Contour Elevation		=	396
Ending Contour Elevation		=	410

NOTE: Structures and leach fields are located on a level pad.
The average slope increases due to an existing cut bank.

9-29

County Geologist's Review Comments

Copy to Planning File ☐ Copy to Geology ☑ Copy to LDE ☐

Type of Referral: **Land Use Application**

CPO Record #: 20606

Street Number	Street	File Number	Related Files	APN
22187	Old Santa Cruz Hwy.	7009	98B	55808028
		7009 - 29 - 41 - 98B R1	98B R1	

Site City State Zip: Los Gatos, CA 95034

Owner Company Name: Webb

Applicant Name: Velimir Sulic (Mason-Sulic, Inc.)

Building Permit Plan Check #: 7200

Other Geology:

Map Sheet #: 181 Geologic Hazard Zone :

Applied Date	Referral Date	Response Due Date	Date Evaluated
Aug 19, 1998	Aug 24, 1998	Sep 8, 1998	Sep 2, 1998

Evaluation: **Application is COMPLETE, with geologic conditions (see below)**

Comments: "Geologic Evaluation" report (dated 8-18-98) by Buckley (CEG#1110) appears to be adequate. Therefore, the report is APPROVED and the requirement is satisfied. If the plans are changed, a Plan Review Letter will be required prior to clearance of permits. JBB

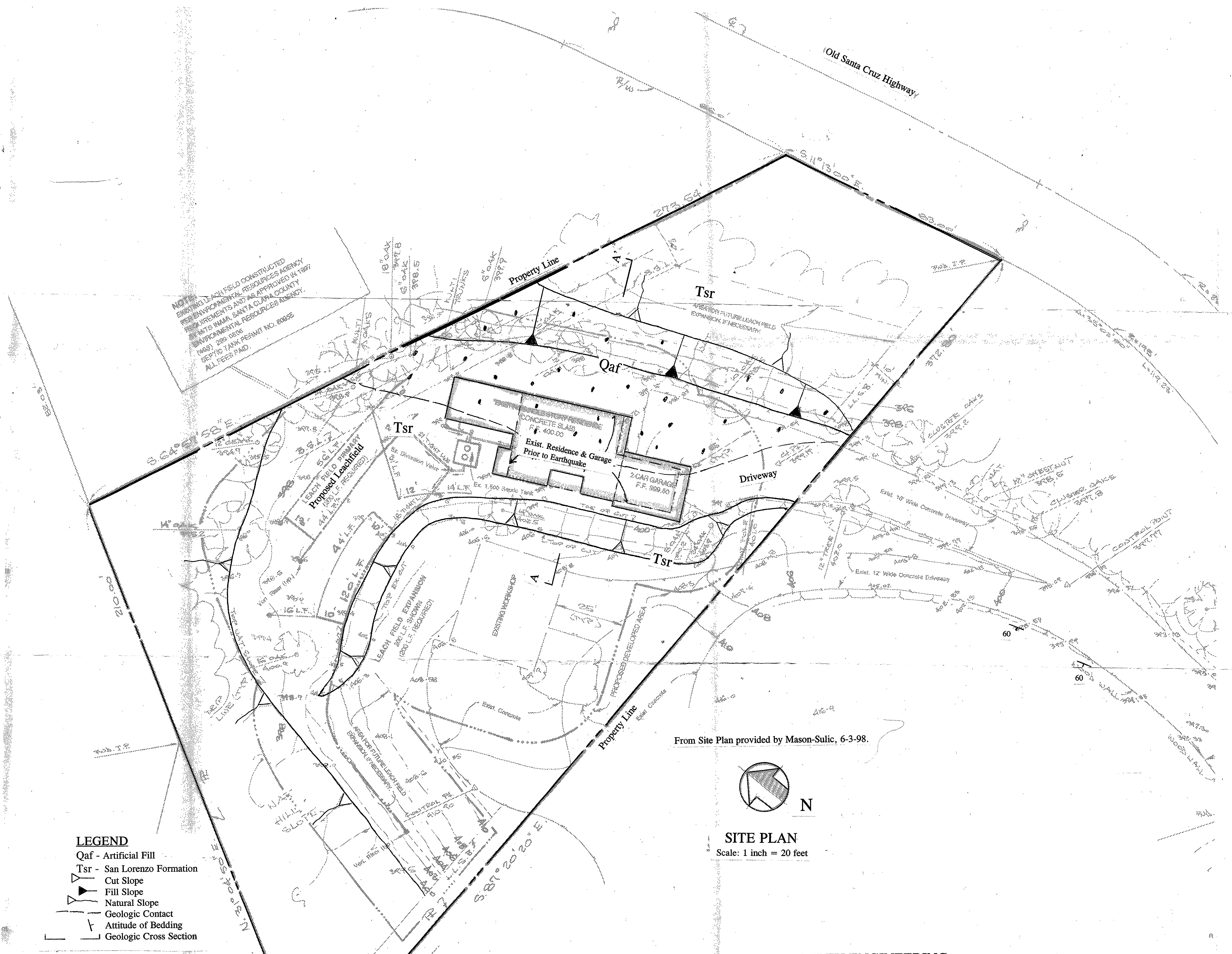
Conditions of Approval To Be Satisfied Prior To Permit Issuance

Conditions Of Approval: If the plans are changed, a Plan Review Letter will be required prior to clearance of permits. JBB

Geologic Report Received	Geologic Report Dated	Consultant	Geologic Fee Paid	Geologic Fee Date
Aug 19, 1998	Aug 18, 1998	Buckley	$310.00	Aug 20, 1998

Comments On Report: "Geologic Evaluation" report (dated 8-18-98) by Buckley (CEG#1110) appears to be adequate. Therefore, the report is APPROVED and the requirement is satisfied. If the plans are changed, a Plan Review Letter will be required prior to clearance of permits. JBB

Approved Sep 2, 1998



BUCKLEY ENGINEERING ASSOCIATES

ENGINEERING GEOLOGIC MAP

22187 Old Santa Cruz Hwy
Santa Clara County, CA

PLATE 3

8-18-1998

7009-98B