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•SOIL ENGINEERING •GEOLOGY •GEOPHYSICS •GROUND WATER •MATERIALS TESTING •HAZARDOUS WASTE ASSESSMENT

August 10, 1987

Project No. 7870969-01

TO: Growth Western Properties, Inc.
17800 Ridgeway Road
Granada Hills, California 91344

ATTENTION: Mr. Lee C. Pulsipher

SUBJECT: Preliminary Geotechnical Research and Reconnaissance, Soledad Canyon Property, Canyon Country, California

Introduction

As requested, we have performed a soils engineering and geologic (i.e. Geotechnical) research and reconnaissance study of the subject parcel along Soledad Canyon Road in Canyon Country (see Index Map, Page 2). This study is intended as an initial cursory study involving in-house research and field reconnaissance in order to identify any major geotechnical conditions which would influence site development. The following report summarizes our findings, conclusions, and recommendations regarding the subject parcel.

Site Conditions

The subject property is situated along the south side of the Santa Clara River on Soledad Canyon Road (see Plate 1). This site straddles that portion of the river which has been confined by concrete levees constructed by the Los Angeles County Flood Control Department. The Santa Clara River is an ephemeral stream (i.e. seasonal) which flows during winter and spring months. It appears that the most active portions of this ephemeral stream at the time of our reconnaissance were along the northerly property and also along the southerly property as indicated on Plate 1. In addition to the concrete levees, a double fence has been constructed along the outside bond of the stream at that vicinity along the southerly property. Adjacent to this fence is an earthern berm. Presumably both the earthern berm and fence were constructed as a levee prior to installation of the concrete levees.

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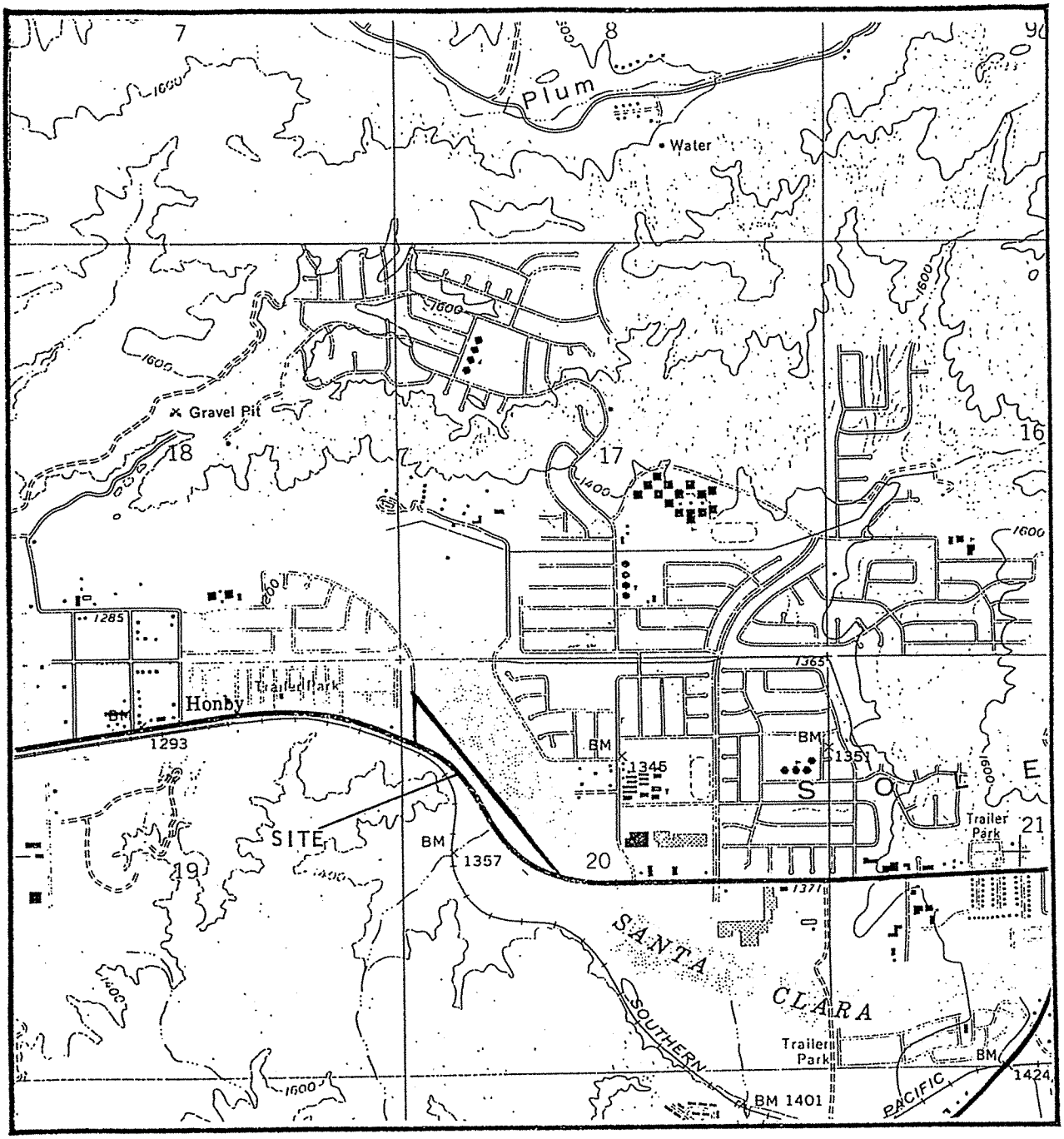
INDEX MAP



GROWTH WESTERN PROPERTIES

SOLEDAD CANYON ROAD PARCEL

SAUGUS, CALIFORNIA

(Subject Site Shown in Yellow)

Base Map: USGS 7-1/2 Minute Quadrangle Mint Canyon

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Topographically, the site is flat with elevated man-made berms. The property is sparsely vegetated by low shrubs and local grasses. The site is bounded on the east and west by existing residential and commercial development and on the north and south by undeveloped natural riverbed.

Geotechnical Conditions

The subject property is located in the central portion of the Santa Clarita basin formed by Plio-Pleistocene continental deposits warped by tectonic events to create a trough-life geologic structure. That basin has been subsequently filled by alluvial deposition along the Santa Clara River as well as soils deposited as a result of erosion of the nearby hills. Specifically, this site is situated at or near the southerly edge of the basin where alluvial deposits onlap bedrock. Bedrock in that vicinity is of the Saugus Formation and structurally consists of poorly to moderately developed beds dipping 10 to 15± degrees northerly. No bedrock was observed to exist onsite.

Shallow ground water was not observed but is likely due to the ephemeral stream condition. Alluvial deposits have been subdivided into the active stream sediments being deposited seasonally and the inactive surface where deposition appears only to have occurred during peak floods and by former active drainage courses. Both units consists of silty sands with varying amounts of angular gravel.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

It is our professional opinion that the site can be effectively developed provided the following geotechnical conclusions are addressed:

- The upper portion of the alluvial deposits may be loose and is susceptible to consolidation collapse and/or liquefaction.
- Onsite soils are essentially cohesionless and although they will provide excellent fill quality and bearing capacities, they may be subject to surficial or gross instability where utilized to create fill slopes or where cut slopes would expose such soils.
- Shallow ground water is probable and may present nuisance conditions in the form of springs or seepage if not intercepted by subdrainage devices.
- The erosion potential along the outside of the bend in the river channel onsite is considered high and mitigation is required.

Recommendations

The following recommendations are provided in order to alleviate the above-described adverse conclusions:

- A soils study involving subsurface exploration should be undertaken to identify the potentials for consolidation, collapse, and liquefaction and to provide alternative recommendations for treatment of the identified conditions.
- Fill slopes and cut slopes proposed should be designed no steeper than a horizontal to vertical ratio of 2:1. These slopes should be analyzed by the soils engineer for both gross and surficial stability once a design becomes available.
- Shallow ground water should be treated by either interceptor subdrain systems, a gravel blanket or a combination thereof. The actual location and type of system is best established during grading by the soil engineer and/or geologist.
- Any slopes which are proposed adjacent to and therefore, subjected to erosion potentials created by seasonal flow of the Santa Clara River should be designed with a non-erosive (e.g. Paved) surface to avoid erosion encroachment into the proposed slope and pad areas.
- Any proposed building pad should be constructed above the minimum applicable elevation required by local flood control requirements.

Thank you for the opportunity to be of assistance to you. If you have any questions regarding this report, please do not hesitate to contact us at your convenience.

Respectfully submitted,

LEIGHTON AND ASSOCIATES, INC.

Bruce R. Hilton, CEG 1151
Chief Engineering Geologist

Ross Khiabani, RCE 37156
Chief Geotechnical Engineer

BH/RK/lh

Attachments: Index Map - Page 2
Plate 1 - Geotechnical Map - Rear of Text

Distribution: (2) Addressee

PLATE 1

GEOTECHNICAL MAP
SOLEDAD CANYON ROAD PARCEL
GROWTH WESTERN

L&A

Proj 787096901 | Scale 1"=200' | Date 2/10
Engineer/Geologist: RK/BH | Drafting Dmjs
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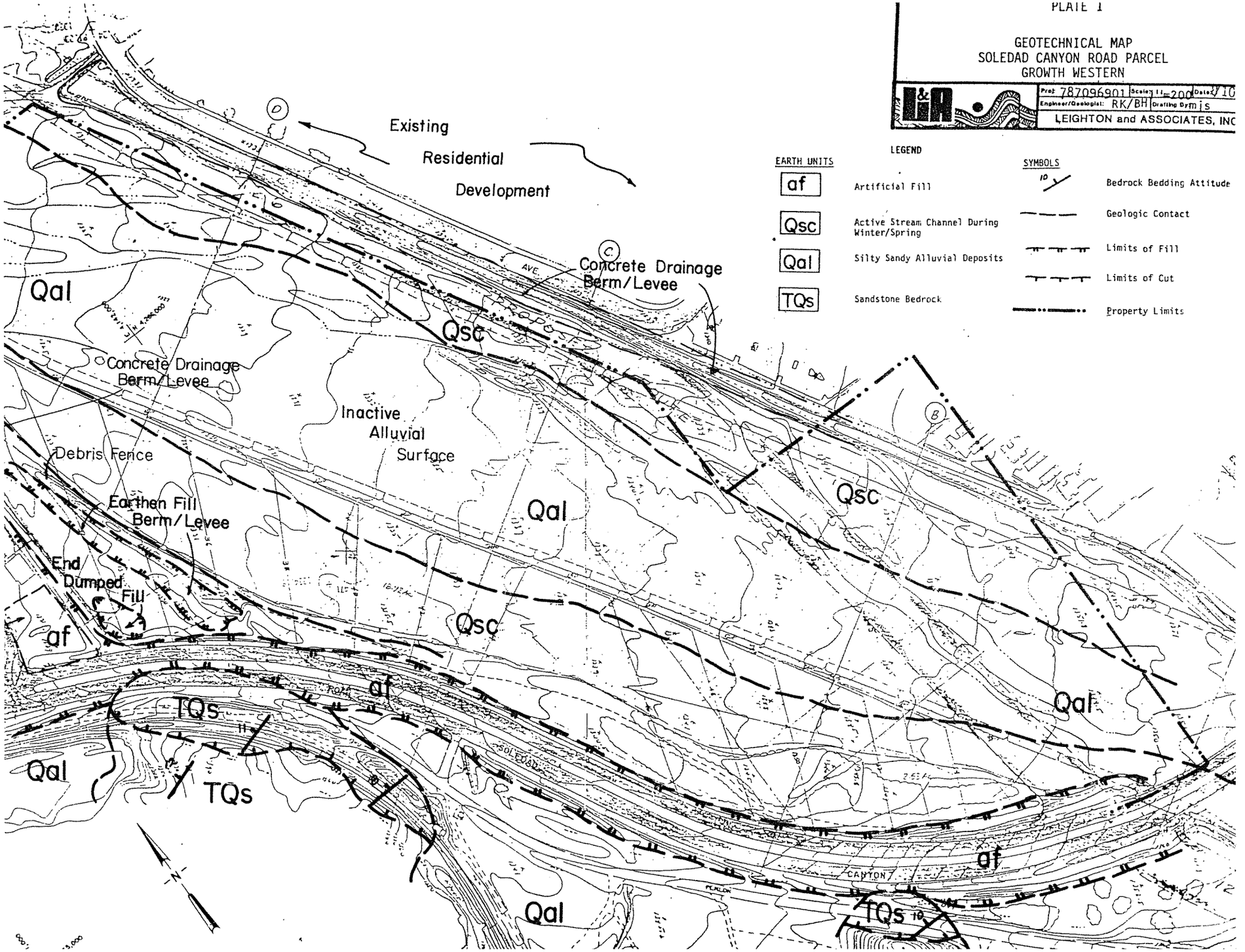

LEGEND

EARTH UNITS

af	Artificial Fill
Qsc	Active Stream Channel During Winter/Spring
Qal	Silty Sandy Alluvial Deposits
TQs	Sandstone Bedrock

SYMBOLS

- Bedrock Bedding Attitude
- Geologic Contact
- Limits of Fill
- Limits of Cut
- Property Limits