CITY OF LOS ANGELES
CALIFORNIA

DEPARTMENT OF
BUILDING AND SAFETY
201 NORTH FIGUEROA STREET
LOS ANGELES CA 90012

ROBERT R "BUD" OVROM
GENERAL MANAGER

RAYMOND S CHAN C E S E
EXECUTIVE OFFICER

GEOLOGY AND SOILS REPORT APPROVAL LETTER

March 20, 2012

Log # 76503
SOILS/GEOLOGY FILE - 2

Robert Dirksen
1805 Nichols Canyon Road
Los Angeles, CA 90046

TRACT: 13404
LOT: 3
LOCATION: 1805 Nichols Canyon Road

CURRENT REFERENCE REPORT/LETTER(S)	REPORT NO.	DATE(S) OF DOCUMENT	PREPARED BY
Geology Report	Project No. LP1045	01/20/2012	Land Phases, Inc.
Oversize Documents	" "	"	" "
Soil Report	Project No. 5325	01/27/2012	CalWest Geotech.
Oversize Documents	" "	"	" "

The referenced reports concerning remedial slope restoration proposed to remove retaining walls and associated backfill (construction without permits on the vacant, adjacent, up-slope, off-site property), and the removal of wood retaining walls on the slope within the property (also constructed without permits), have been reviewed by the Grading Division of the Department of Building and Safety. An order was issued by the code enforcement bureau of the department.

The dwelling was constructed in 1947, per the City Navigate LA Maps. The geologic map shows that the slope ascending above the west side of the dwelling, is east-facing and steeper than would be allowed per current code standards. As shown, the lower, southern portion of slope on the property exposing the granitic bedrock (quartz diorite) is inclined steeper than 50 degrees, and the upper (off-site portion) above elevation 510 and above the un-permitted walls is steeper than 60 degrees.

The geologist did not identify geologic structure that is adverse or hazardous. It is the opinion of the geologist however (see pgs. 19 & 20 in the geology report), that removal of the existing masonry walls and stairway (also un-permitted on steep slopes within the subject property), may worsen geologic conditions on the slope and that these structures may be allowed to remain, stating that the walls do not pose a hazard to the subject or adjacent properties. It is assumed based on visual inspection that the conventional foundations for the stairway construction bear on bedrock.

Per the reports, the existing retaining wall at the toe of the slope (west edge of pad), does not have protective freeboard or the standard paved back-drain.

It shall be understood that slope conditions and the structures on the slope above the dwelling are not in conformance with code standards, and that the recommendations outlined in the above-referenced reports are intended to improve existing conditions over that which presently exist, and will be considered as "remedial".

The owner shall be aware of the geologist's note (see pg. 23) concerning consideration to provide at least 3 feet of freeboard height and an open-channel, paved, concrete 'V' drain, as additional protection for the dwelling from slough and runoff from the slope.

The reports are acccptable, provided thc following conditions are complied with:

1. The remedial plans shall be filed with the department for review and approved, *prior* to starting work.

2. The existing stairway may remain, as recommended.

3. Secure the notarized written consent from *all owners* upon whose property the proposed grading is to extend. Note: The written consent shall be included as part of the final plans.

4. Surface drains shall be provided for the graded slope as recommended by the geologist (see pg. 19).

5. As recommended, the un-permitted walls and associated backfill on the up-slope, off-site property (1800 Binkley Dr.), shall be removed entirely and replaced with certified compacted fill placed on competent bedrock with sub-drains at the base of the fill and surface drains, with the finished horizontal to vertical slope gradient to not exceed 1.5:1 (33 degrees).

6. The sub-drains shall be placed under the direct observation of the geologist and soil engineer, and approved in the field prior to backfilling.

7. The graded slope shall be planted with low-water consumption, native-type plant varieties to protect against erosion, as recommended by the geologist.

8. All drainage from off the slope (including drainage from the stairway) shall be conveyed in non-erosive devices to the street or other approved location in a manner that is acceptable to the department. Water shall not be dispersed on to off-site property or descending slopes.

9. Final plans shall conform to the recommendations for grading included by the soil engineer (see pgs. 8 - 10 in the soil report dated 01/27/2012), and the conditions in this letter.

10. The existing, un-permitted, wooden planter walls and the associated un-certified backfill shall be removed and the exposed bedrock slope covered with geo-textile fabric to prevent erosion, as recommended by the geologist (see pg. 19).

11. The applicant is advised that the approval of this report does not waive the requirements for excavations contained in the State Construction Safety Orders enforced by the State Division of Industrial Safety.

12. As recommended (see pg. 10 in the soil report), temporary excavations in bedrock shall be restricted to a vertical height of 7 feet, and all portions exceeding the vertical height of 7 feet shall be sloped back at a horizontal to vertical slope gradient not exceeding 1:1 (45 degrees). Otherwise, the excavations shall be shored or slot-cut, as recommended.

13. Prior to any excavation, an initial inspection shall be called at which time the sequence of the grading work to remove the un-permitted walls (both on and off-site), any shoring or slot-cuts (that may be required), protection fences and dust and traffic control will be scheduled.

14. A supplemental report with recommendations justified with calculations shall be submitted by the soil engineer and approved by the department prior to implementation, if shoring or slot-cuts are required.

15. The geologist and soil engineer shall provide continuous supervision of the remedial grading and upon completion submit a final report stating that the completed work complies with all recommendations.

16. All grading and removal of the existing un-permitted structures on the steep slopes (and any shoring or slot-cuts that may be required), shall be performed under the inspection and approval of the geologist, soils engineer and/or a deputy grading inspector reporting to the geologist and soil engineer.

17. A grading permit shall be obtained.

18. Grading shall be scheduled for completion prior to the start of the rainy season, or detailed temporary erosion control plans shall be filed in a manner satisfactory to the Grading Inspection Division of the Department and the Department of Public Works, Bureau of Engineering, B-Permit Section, for any grading work in excess of 200 cu yd.

201 N. Figueroa Street Room 770, LA	(213) 482-7474
6262 Van Nuys Blvd. Ste 351, V Nuys	(818) 374-4605
1828 Sawtelle Blvd., 3rd Floor, West LA	(310) 575-8625

19. The geologist and soils engineer shall review and approve the detailed plans prior to issuance of any permits. This approval shall be by signature on the plans which clearly indicates that the geologist and soils engineer have reviewed the plans prepared by the design engineer and that the plans include the recommendations contained in their reports.

20. All recommendations of the reports which are in addition to or more restrictive than the conditions contained herein shall be incorporated into the plans.

21. A copy of the subject and appropriate referenced reports and this approval letter shall be attached to the District Office and field set of plans. Submit one copy of the above reports to the Building Department Plan Checker prior to issuance of the permit.

22. The geologist and soils engineer shall inspect all excavations to determine that conditions anticipated in the report have been encountered and to provide recommendations for the correction of hazards found during grading.

23. All man-made fill shall be compacted to a minimum 90 percent of the maximum dry density of the fill material per the latest version of ASTM D 1557. Where cohesionless soil having less than 15 percent finer than 0.005 millimeters is used for fill, it shall be compacted to a minimum of 95 percent relative compaction based on maximum dry density (D1556). Placement of gravel in lieu of compacted fill is allowed only if complying with Section 91.7011.3 of the Code.

24. Prior to the placing of compacted fill, a representative of the consulting soils engineer shall inspect and approve the bottom excavations. He shall post a notice on the job site for the LADBS Grading Inspector and the Contractor stating that the soil inspected meets the conditions of the report, but that no fill shall be placed until the LADBS Grading Inspector has also inspected and approved the bottom excavations. A written certification to this effect shall be filed in the final compaction report filed with the Grading Division of the Department. All fill shall be placed under the inspection and approval of the soils engineer. A compaction report together with the approved soil report and Department approval letter shall be submitted to the Grading Division of the Department upon completion of the compaction. The engineer's certificate of compliance shall include the grading permit number and the legal description as described in the permit.

STEPHEN DAWSON
Engineering Geologist II

PASCAL CHALLITA
Geotechnical Engineer II

Log # 76503
(213) 482-0480

cc: Mid-Valley Permit Service (Applicant)
Land Phases, Inc. (Geologist)
CalWest Geotechnical (Soil Engineer)
LA District Office

CITY OF LOS ANGELES
DEPARTMENT OF BUILDING AND SAFETY
Grading Section

District LA | Log No.

APPLICATION FOR REVIEW OF TECHNICAL REPORTS AND IMPORT-EXPORT ROUTES

INSTRUCTIONS

A. Address all communications to the Grading Section, LADBS, 201 N. Figueroa St., 3rd Fl., Los Angeles, CA 90012 Telephone No. (213)482-0480.
B. Submit 3 copies (4 for fault study zone) of reports and 3 copies of application with items "1" through "10" completed.
C. Check should be made to the City of Los Angeles.

1. LEGAL DESCRIPTION
Tract 13404
Block ____ Lots 3

2. PROJECT ADDRESS: & 1800 Binkley Dr
1805 Nichols Cyn Rd

3. OWNER Robert Dirksen
Address 1805 Nichols Cyn Rd
City Los Angeles, Zip 90046
Phone (Daytime) ____

4. APPLICANT Mid Valley Permit Service
Address 8808 Hillcroft Trail
City West Hills CA Zip 91304
Phone 818 (Daytime) 266-9796 Fax 818 340-4622

5. Report(s) Prepared by: ~~Coast Geotechnical~~ Land Phases INC

6. Report Date(s): JAN 25th 2012 ~~2012~~

7. Status of project: ☒ Proposed ☐ Under Construction ☐ Storm Damage

8. Previous site reports? ____ if yes, give date(s) of report(s) and name of company who prepared report(s)

9. Previous Department actions? ____ if yes, provide dates and attach a copy to expedite processing.
Dates ____

10. Applicant Signature: [signature] Position: agent

(DEPARTMENT USE ONLY)

REVIEW REQUESTED	FEES	REVIEW REQUESTED	FEES
☐ Soils Engineering		☐ Import-Export Route	
☒ Geology	541.50	☐ Division of Land	
☐ Combined Soils Engr. & Geol.		☐ Other	
☐ Supplemental		Sub-total	541.50
☐ Combined Supplement		One-Stop Surcharge	Y

Fee Due $ 647.07
Fee Verified By: ____ Date: 2/21/12

(Cashier Use Only)

LA Department of Building and Safe...
WE 09 32 309095 02/21/12 ...

GRADING REPORT	...
ONE STOP SURCH	...
SYSTEMS DEVT FEE	...
CITY PLANNING SURCH	...
MISCELLANEOUS	13.00
GEN PLAN MAINT SURCHARGE	16.00
Total Due:	647.07
Carry Over TO Trans 309095	647.07

ACTION BY:

TOTAL FEE 647.07

THE REPORT IS: ☐ NOT APPROVED
☐ APPROVED WITH CONDITIONS SEE: ☐ BELOW ☐ ATTACHED

For Geology *Date*

For Soils *Date*

DISTRIBUTION: ☐ Soil Engr ☐ Board Files
☐ Owner ☐ Geologist ☐ Tract File
☐ Applicant
☐ ____

Inspection:
☐ LA ☐ WLA ☐ BI
☐ VN ☐ SP/WLA ☐ BMI

CITY OF LOS ANGELES
DEPARTMENT OF BUILDING AND SAFETY
Grading Section

District	Log No. 18503

APPLICATION FOR REVIEW OF TECHNICAL REPORTS AND IMPORT-EXPORT ROUTES

INSTRUCTIONS

A. Address all communications to the Grading Section, LADBS, 201 N. Figueroa St., 3rd Fl., Los Angeles, CA 90012 Telephone No. (213)482-0480.
B. Submit 3 copies (4 for fault study zone) of reports and 3 copies of application with items "1" through "10" completed.
C. Check should be made to the City of Los Angeles.

1. LEGAL DESCRIPTION
Tract 13404
Block ______ Lots 3

2. PROJECT ADDRESS: 1805 Nichols Cyn Rd

3. OWNER Robert Dirksen
Address 1805 Nichols Cyn Rd
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Phone (Daytime) ______

4. APPLICANT Mid Valley Permit Service
Address 8808 Hillcroft Trail
City West Hills CA Zip 91304
Phone 818 (Daytime) 266-9796 Fax 818 340-4622

5. Report(s) Prepared by: Calwest Geotechnical & ~~Land Phases Inc~~
6. Report Date(s): ~~Jan 2012~~ Jan 27, 2012

7. Status of project: ☒ Proposed ☐ Under Construction ☐ Storm Damage
8. Previous site reports? ______ if yes, give date(s) of report(s) and name of company who prepared report(s)
9. Previous Department actions? ______ if yes, provide dates and attach a copy to expedite processing.
Dates ______
10. Applicant Signature: [signature] Position: agent

(DEPARTMENT USE ONLY)

REVIEW REQUESTED	FEES	REVIEW REQUESTED	FEES
☐ Soils Engineering		☐ Import-Export Route	
☒ Geology	544.50	☐ Division of Land	
☐ Combined Soils Engr. & Geol.		☐ Other	
☐ Supplemental		Sub-total	544.50
☐ Combined Supplement		One-Stop Surcharge	Y
		TOTAL FEE	647.07

Fee Due $ 647.07
Fee Verified By: [initials] Date: 2/21/12

(Cashier Use Only)

LA Department of Building and Safety
VN [illegible]

GRADING [illegible]	[illegible]
ONE STOP SURCH	[illegible]
SYSTEMS DEVT FEE	[illegible]
CITY PLANNING SURCH	[illegible]
MISCELLANEOUS	[illegible]
GEN PLAN MAINT SURCHARGE	[illegible]
Subtotal	$647.07
Carry Over FROM Tran# 009094	$647.07
Total Due	[illegible]
Credit Card	[illegible]

ACTION BY:

THE REPORT IS: ☐ NOT APPROVED
☐ APPROVED WITH CONDITIONS SEE: ☐ BELOW ☐ ATTACHED

______ *For Geology* ______ *Date*

______ *For Soils* ______ *Date*

DISTRIBUTION: ☐ Owner ☐ Applicant ☐ Soil Engr ☐ Geologist ☐ Board Files ☐ Tract File Inspection: ☐ LA ☐ VN ☐ WLA ☐ SP/WLA ☐ BI ☐ BMI

☐ 20120201253242

REPORT OF ENGINEERING GEOLOGIC STUDY

PROPOSED REMEDIAL SLOPE RESTORATION -
MITIGATION OF UN-PERMITTED RETAINING WALLS AND ASSOCIATED GRADING

1805 N. NICHOLS CANYON ROAD **and**
A PORTION OF THE ADJACENT PROPERTY TO THE WEST
HOLLYWOOD AREA, CITY OF LOS ANGELES, CALIFORNIA

PREPARED FOR MR. ROBERT DIRKSEN
c/o
PETER VRACKO

JANUARY 20, 2012 Project No.: LP1045

CONSULTING ENGINEERING GEOLOGISTS
"Exploration and Analysis for Design and Development"
702 Greenbriar Avenue Simi Valley, California 93065 Phone: (805) 657-0142

January 20, 2012

Project No.: LP1045

Mr. Robert Dirksen
c/o Peter Vracko
P.O. Box 691369
W. Hollywood, CA 90069

SUBJECT: REPORT OF ENGINEERING GEOLOGIC STUDY, PROPOSED REMEDIAL SLOPE RESTORATION - MITIGATION OF UN-PERMITTED RETAINING WALLS AND ASSOCIATED GRADING, 1805 N. NICHOLS CANYON ROAD and A PORTION OF THE ADJACENT PROPERTY TO THE WEST, HOLLYWOOD AREA, CITY OF LOS ANGELES, CALIFORNIA

Dear Mr. Dirksen,

Land Phases, Inc. (LP) is pleased to report the findings of our engineering geologic study performed with respect to the proposed remedial slope restoration at 1805 N. Nichols Canyon Road, and a portion of the adjacent property located to the west, which is located in the Hollywood area of the City of Los Angeles, California (collectively referred to herein as the "subject property" or "project area"). Work performed as part of our engineering geologic study was in general accordance with the authorized scope of work presented in our proposal, dated December 8, 2011, which was formally authorized by you on December 13, 2011.

This report summarizes our scope of work and presents the results of our research, our analyses and interpretation of surficial and subsurface geologic data, and presents our engineering geologic conclusions and recommendations concerning the subject property and the proposed project. Based on the results of our engineering geologic study, it is currently our opinion that the proposed project is feasible from an engineering geologic standpoint provided the recommendations presented in this report, and those presented by the Project Geotechnical Engineer, are properly incorporated in the design and implemented during construction.

We appreciate the opportunity to provide you with our professional engineering geologic services. It is strongly recommended that you read this report from cover to cover in order to understand the assumptions and limitations of this study and to avoid taking a finding or recommendation out-of-context. Please avoid misunderstandings or misinterpretation of this report by calling the undersigned with any questions you may have.

Respectfully Submitted,
LAND PHASES, INC.

Jake W. Holt
PG 7404, CEG 2282, CHG 816 exp. 11-30-12
Senior Project Engineering Geologist

jh:\\MS2\Users\Jake Holt\LAND PHASES INC\LP PROJECTS\LP1045 - Dirksen\Reports\LP1045 - Geo Report, Jan 20, 2012.doc

Distribution: (5) Addressee (3 for City submittal, 1 unbound, plus 1 pdf copy on CD)
(1) CalWest Geotechnical

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ATTACHMENTS

Figures:

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Figure 2 – Site Location Map
Figure 3 – Regional Geologic Map by Dibblee (1991)
Figure 4 – Earthquake Fault Zones Map
Figure 5 – Seismic Hazard Zones Map

Appendices:

Appendix A – Appended Documents
-City of Los Angeles Order To Comply, dated October 17, 2011

Appendix B – Typical Details and Diagrams
-Typical 1.5(h):1(v) Buttress Fill-Slope, Keyway, Benching, and Subdrain Detail

Map Pocket:

Plate 1 – Geologic Map (scale: 1" equals 10')
Plate 2 – Geologic Section A-A' (scale: 1" equals 10')
Plate 3 – Geologic Section B-B' (scale: 1" equals 10')

INTRODUCTION

General Remarks and Purpose

The following report summarizes findings of our engineering geologic study concerning the subject property. The purpose of this study was to determine and evaluate the geologic conditions of the subject property with respect to the proposed remedial slope restoration at the site. Our engineering geologic study of the subject property was performed in conjunction with a geotechnical engineering study of the site by CalWest Geotechnical. To clarify, LP is the *Project Engineering Geologist* and CalWest Geotechnical is the *Project Geotechnical Engineer* with respect to the proposed project.

Proposed Remedial Slope Restoration

Information concerning the proposed project was provided by the property owner and Vracko Construction, Inc. This information was the basis for our engineering geologic study. Based on the provided information and the findings of our recent site observations, un-permitted construction activities have recently been performed within the subject property and a portion of the adjacent property located to the west. These un-permitted construction activities are the subject of the referenced City of Los Angeles "Order to Comply and Notice of Fee" letter, dated October 17, 2011 (included in Appendix A). Specifically, two retaining walls have been constructed and backfilled in order to create a level terrace area located immediately adjacent to the western property line of 1805 N. Nichols Canyon Road. In addition, a concrete staircase and adjacent masonry walls have been constructed on the rear yard slope of the subject property in order to provide foot access from the rear yard area of the site to the aforementioned terrace area. Lastly, non-conforming wooden post-and-board planter walls are also present on the rear yard slope of the subject property. The locations of the existing un-permitted structures and associated grading are illustrated on the *Geologic Map* which is attached to this report as Plate 1.

In order to mitigate the un-permitted retaining walls and associated grading, it is proposed to perform remedial slope restoration within the subject property and adjacent offsite area. Based on our consultation with property owner, Vracko Construction, Inc., and the Project Geotechnical Engineer, the remedial slope restoration project will include the removal of the two retaining walls and associated backfill located immediately adjacent to the western property line of 1805 N. Nichols Canyon Road followed by the construction of a 1.5(h):1(v) max. fill-slope in order to restore the pre-existing grade. In addition, it is proposed to remove the existing non-conforming wooden walls and associated backfill from the rear yard slope of the site. In regards to the concrete staircase and adjacent masonry walls, these structures shall remain on the slope (to be discussed in greater detail in the **RECOMMENDATIONS** section of this report). However, foundation underpinning of the concrete staircase and/or adjacent masonry walls may be required as part of the proposed project. Formal slope restoration plans have not been prepared and await, in part, the conclusions and recommendations of this report.

Scope of Work

Our engineering geologic study of the subject property was conducted from December 13, 2011 to January 20, 2012 and included the following tasks:

- Review of the project information which was provided to our office.
- Research and review of available City files and archives for geologic data pertinent to the subject property and adjacent area.
- Review of selected aerial photographs, published engineering geologic references, and available published and unpublished engineering geologic and geotechnical engineering reports. The references cited or utilized as part of this study are listed in the **REFERENCES** section of this report.
- Geologic field mapping of the surficial deposits and/or outcrops located within and adjacent to the subject property.
- Preparation of a site-specific *Geologic Map* (scale: 1" equals 10') which utilizes a detailed topographic survey as a base. The *Geologic Map* illustrates the proposed project, the locations of the geologic cross-sections constructed as part of this study, and the interpreted geologic conditions of the site based on the findings of our engineering geologic study. The *Geologic Map* is attached to this report as Plate 1.
- Preparation of site-specific *Geologic Sections A-A' and B-B'* (scale: 1" equals 10') which illustrate the topographic and interpreted geologic and hydrogeologic conditions of selected portions of the subject property based on the findings of our engineering geologic study. The locations and orientations of the geologic sections are typically intended to illustrate the interpreted geologic and hydrogeologic conditions underlying the "worst-case" or steepest slope of the area of the proposed project for use by the Project Geotechnical Engineer. However, the locations and orientations of the geologic sections may also illustrate other portions of the site or specific geologic conditions deemed pertinent to this study. *Geologic Sections A-A' and B-B'* are attached to this report as Plates 2 and 3.
- Analysis of the geologic and hydrogeologic data obtained from the aforementioned tasks.
- Preparation of this report that presents our engineering geologic findings, conclusions, and recommendations with respect to the subject property and proposed project.
- All aspects of this study were performed by, or under the direct supervision of, a State of California Certified Engineering Geologist.

SITE DESCRIPTION

Site Location

The subject property is located on the southern flank of the Santa Monica Mountains in the Hollywood area of the City of Los Angeles, California. Specifically, the subject property is located east of the San Diego (405) Freeway, west of the Ventura/Hollywood (101) Freeway, north of Hollywood Blvd., on the west side of N. Nichols Canyon Road in a residentially developed hillside and canyon area (see Figure 1). Custom single-family residences are present on the adjacent properties located to the north, south, and across the street to the east. However, the adjacent property located upslope to the west is currently vacant.

Regional Geomorphology

The property is located within the geographic area known as the Santa Monica Mountains. The geomorphic conditions of this area have been sculpted by factors associated with geographic location, underlying geologic conditions, tectonics, climate, erosion, and man. Based on our observations of the area, and our review of the *United States Geological Survey (USGS) Topographic Map of the Hollywood Quadrangle,* the general topographic conditions of the surrounding area consist of a south–facing mountain front which has been incised by south–trending drainage courses (see Figure 2). The prominent geomorphic features in the area of the subject property are Laurel Canyon located to the west, the Los Angeles Basin located to the south, a south-trending ridge located upslope to the west, and the south-trending canyon (named Nichols Canyon) in which the subject property is situated.

Site Geomorphology

Locally, the subject property is situated on the western margin of the southern terminus (i.e. mouth) of Nichols Canyon. The eastern half (approx.) of the subject property is described as a moderately level building pad which is located near the bottom of Nichols Canyon. However, the western half (approx.) of the subject property is described as a steep, east-facing slope.

Based on the findings of this study, past grading on the eastern and central portions of the site appears to have consisted of cutting and filling associated with the construction of the existing building pad and residence. However, as previously discussed in this report, un-permitted grading activities have recently been performed within the western portion of the site. Based on the findings of this study, the recent grading has consisted of cutting and filling performed in association with the construction of un-permitted retaining walls, a concrete staircase and associated masonry walls, and wooden post-and-board planter walls which are all present on the east-facing slope.

Total physical relief within the subject property is on the order of 60 feet. Slope gradients within the site vary from nearly horizontal to as steep as 0.75(h):1(v). The existing topographic conditions of the subject property are presented on the attached *Geologic Map* (Plate 1) which utilizes a current topographic survey as a base.

Existing Structures

Pre-Existing Structures (Not A Part) -

A single-family residence with an attached wood deck is present on the central portion of the subject property. To the west of the existing residence, a retaining wall is present at the toe of the ascending rear-yard slope. Currently, this retaining wall lacks any "freeboard" or a concrete V-drain. On the east side of the existing residence, concrete block and un-reinforced stone-and-mortar retaining walls and planter walls are present along the front yard stairway. Vehicular access to the subject property from Nichols Canyon Road is via a concrete bridge structure which spans an concrete-lined drainage channel which is located adjacent to the eastern property line of the site. The locations of the existing structures of the subject property are illustrated on the attached *Geologic Map* (Plate 1). It should be noted that detailed engineering geologic evaluation of the condition and/or structural performance of the existing structures is beyond the scope of this study.

Recently Constructed Un-Permitted Structures and Grading -

Based on the findings of our engineering geologic study, un-permitted structures have recently been constructed on the east-facing slope located to the west of the existing residence of the site. These un-permitted structures and associated grading are the subject of the referenced City of Los Angeles "Order to Comply and Notice of Fee" letter, dated October 17, 2011 (included in Appendix A). Specifically, two CMU retaining walls have been constructed on the slope located adjacent and west of the western property line of the subject property. These retaining walls range in height from 4 to 5 feet. The western-most retaining wall has not been provided with a backdrain, adequate waterproofing, certified backfill, or a concrete V-drain behind the wall. Rather, colluvium has been allowed to slough into the void located behind this retaining wall. It is reported by the property owner and Vracko Construction, Inc. that this retaining wall was founded into the underlying bedrock with the use of a conventional footing. Based on our site observations, this footing condition appears likely. However, subsurface observation and confirmation of the as-built footing condition for this retaining wall was not performed by LP as part of this engineering geologic study. The eastern-most retaining wall of the two has been backfilled to create a moderately level terrace area. The wall backfill was not placed under geotechnical control or supervision and is thus considered as "uncertified fill". Based on our site observation, it is probable that the eastern retaining wall was not provided with a backdrain or adequate waterproofing. It is reported by the property owner and Vracko Construction, Inc. that this retaining wall was also founded into the underlying bedrock with the use of a conventional footing. Based on our site observations, this footing condition appears likely. However, subsurface observation and confirmation of the as-built footing condition for this retaining wall was not performed by LP as part of this engineering geologic study. The locations of these retaining walls are illustrated on the attached *Geologic Map* (Plate 1).

Near the lower portion of the east-facing rear yard slope, a series of four wooden post-and-board planter walls have been constructed and backfilled in order to provide support of narrow planter areas. It should be noted that the use of wood retaining walls on slopes is not permitted in the City of Los Angeles (and many other jurisdictions) as wooden walls are subject to wood rot,

insect infestation, and weathering which leads to accelerated decay and failure. Based on our site observations, these walls have been provided with a relatively minor amount of uncertified backfill in order to construct a moderately level planter areas on the upslope side of the walls. The locations of the wooden planter are illustrated on the attached *Geologic Map* (Plate 1).

Lastly, a concrete staircase and adjacent masonry walls have been constructed on the northern portion of the east-facing slope of the subject property. For the most part, the masonry walls constructed along the margin of the staircase do not appear to "retain" or support excavated areas and/or earth materials present on the slope. Where localized portions of the masonry walls have been constructed parallel or sub-parallel to the face of the east-facing slope, less than 2 feet of earth materials appear to be in contact with the upslope wall. It is reported by the property owner and Vracko Construction, Inc. that the concrete staircase and adjacent walls bear upon the underlying bedrock with the use of a conventional footing system. Based on our site observations, this footing condition appears likely. However, subsurface observation and confirmation of the as-built footing condition for the staircase and adjacent walls was not performed by LP as part of this engineering geologic study. The locations of the staircase and adjacent walls are illustrated on the attached *Geologic Map* (Plate 1).

Site Drainage

Slope and pad drainage within the site is by sheet flow runoff which is directed east around the residence and offsite via the existing contours. Roof drainage is controlled via rain gutters and downspouts which direct the collected runoff to the pad area located adjacent to the existing residence. As previously stated in this report, the existing rear yard retaining wall, located to the west of the existing residence at the toe of the ascending slope, currently lacks any "freeboard" or a concrete V-drain. Furthermore, the existing residence currently lacks the code-required level rear yard setback area of 15 feet (as measured between the western wall of the existing residence and rear yard retaining wall). Street drainage along Nichols Canyon Road is controlled via curb and gutter. In addition, a concrete-lined drainage channel is located on the west side of Nichols Canyon Road.

Site Vegetation

Vegetation on the subject property consists of domestic shrubs, trees, and lawn in the yard areas surrounding the residence with both domestic and natural grasses and shrubs on the ascending rear yard slope.

PREVIOUS STUDIES

General

Available engineering geologic/geotechnical engineering records on file at our office and the City of Los Angeles Department of Building and Safety were researched as part of our engineering geologic study of the subject property. Pertinent engineering geologic and geotechnical engineering data presented in the available reports was utilized, as deemed appropriate, in our

engineering geologic analysis of the site and preparation of this report. The references cited or utilized as part of this study are listed in the **REFERENCES** section of this report.

Subject Property

Based on our research, the subject property has not been the focus of any known previous site-specific engineering geologic and/or geotechnical engineering study as a site-specific engineering geologic or geotechnical engineering report could not be located in the City files at the time of our study.

GEOLOGIC CONDITIONS

Regional Geologic Setting

The subject property is located within the Transverse Ranges geologic province of California. The general geologic structures and conditions of the Transverse Ranges geologic province are a direct result of lateral and compressional tectonics. Due to the bend in the San Andreas Fault, located to the northeast, this region of California is experiencing compressional stresses in addition to right-lateral strike-slip motion associated with the Pacific and North American plate boundary. This stress has produced a region characterized by east/west-trending mountain ranges, valleys, geologic structures, and numerous active faults which is in contrast to the overall north/northwest structural trend elsewhere in the state. Faulting of the Transverse Ranges, due to the relatively high compressional forces, is primarily thrust or reverse-dip-slip faulting usually with lateral components.

Regional Geologic Mapping

Part of our engineering geologic study of the subject property involved the review of available geologic publications and regional geologic maps as the review of regional geologic data is often very useful in determining and analyzing the geologic conditions of a particular site. A brief summary of the pertinent data presented by available geologic publications and regional geologic maps is as follows:

Regional geologic mapping by Dibblee (1991) indicates that the eastern portion of the subject property is underlain by Quaternary alluvial deposits (**Qae**) while the western portion of the site is underlain by quartz diorite bedrock (**qd**) of Cretaceous age. Faults are not mapped by Dibblee within the subject property. However, Dibblee maps the Santa Monica-Hollywood Fault at a distance of approximately 250 feet to the south of the subject property (see Figure 3).

Site Geology

The geologic conditions (i.e. earth materials and structure) beneath the subject property have been interpreted and characterized based upon our review of published and unpublished geologic references, review of available engineering geologic and geotechnical engineering reports, our observations of isolated exposures available during surface mapping of the site and adjacent area, and the findings of our subsurface exploration. It should be noted that our interpretations of the

geologic conditions of the subject property involve projections of data and require that geologic conditions remain reasonably constant between points of observation and/or exposure.

Geologic Units

Based on the findings of our engineering geologic study, the geologic units (i.e. earth materials) underlying the subject property consist of artificial fill, colluvium, and alluvium over bedrock. The mapped distribution of the geologic units underlying the subject property, based on the geologic data collected to date, is presented on the attached *Geologic Map* (Plate 1).

Artificial Fill (af)

A minor to moderate amount of artificial fill has been mapped by LP within the subject property and the adjacent property to the west. Within the eastern half (approx.) of the subject property, the artificial fill was most likely generated in association with the original construction of the building pad, existing residence, and during past landscaping activities. However, as previously stated in this report, un-permitted construction and grading activities have recently been performed within the western half (approx.) of the subject property, and within a portion of the adjacent property located to the west. These construction and grading activities have resulted in the presence of artificial fill on the east-facing slope.

Based on the findings of our surficial observations performed as part of our engineering geologic study, the artificial fill underlying the project area of the site consists of an admixture of colluvium and bedrock and is described as silty sand with gravel which is mottled grayish brown and pale yellowish brown, dry to slightly moist, and is medium dense. The gravel component consists of angular, pebble- to cobble-size clasts of quartz diorite. It should be noted that based on the findings of our engineering geologic study of the subject property, the artificial fill underlying the project area of the site was not placed under geotechnical control or supervision and is thus considered uncertified.

Colluvium (Qcol)

Natural colluvial deposits overlie the bedrock on portions of the east-facing slope of the subject property and the adjacent offsite area. Based on the findings of our surficial observations performed as part of our engineering geologic study, the colluvium is described as silty sand with gravel which is pale yellowish brown, dry, and is loose to medium dense with depth. The gravel component consists of angular, pebble- to cobble-size clasts of quartz diorite.

Alluvium (Qal)

Based on the finding of our geologic mapping, and review of the referenced geologic reports and publications, it is interpreted that natural alluvial deposits underlie the eastern half (approx.) of the subject property. Due to the presence of the existing structures and artificial fill mantling the eastern half of the site, the alluvium could not be observed by LP during our engineering geologic study. However, based on our review of the referenced geologic reports and publications, the alluvium of the site most likely consists of interlayered mixtures of sand, silt, and gravel.

Bedrock (qd)

Based on the findings of our engineering geologic study, the bedrock underlying the subject property consists of quartz diorite of Cretaceous age. The quartz diorite bedrock is exposed at surface grade on portions of the east-facing slope of the subject property. Based on our observations of the bedrock exposures, the quartz diorite is speckled white, medium gray, and grayish orange, is faintly foliated to massive, coarse-grained, somewhat friable to moderately strong, moderately hard to hard, moderately fractured, and is moderately weathered (at surface grade) to slightly weathered with depth.

Geologic Structure

The earth materials present within the subject property are common to this area of the Santa Monica Mountains and their occurrence is generally consistent with regional trends.

Foliation

Foliation is the planar arrangement of textural or structural features in metamorphic and igneous rock and is most commonly evident by the parallel alignment of grains or minerals. The parallel alignment of grains or minerals typically developed in an orientation perpendicular to the applied tectonic stresses. A *foliation plane* is defined as the division plane in metamorphic or igneous rock that separates each successive layer of aligned minerals or grains.

Based on the findings of our geologic field mapping performed as part of our study, the underlying quartz diorite bedrock possess a faint foliation fabric. Foliation planes mapped within the underlying bedrock generally strike east-west to northeast and dip towards the north and northwest. The locations and orientations of the mapped foliation planes are presented on the attached *Geologic Map* (Plate 1). The structural interpretation of foliation within the underlying bedrock is illustrated on the attached geologic sections based on the measured true and/or calculated apparent dip of foliation.

Joints

A *joint plane* is the surface of a fracture or parting at which no appreciable movement has occurred parallel to the fracture, and only slight movement has occurred normal to the fracture. Joint surfaces can be systematic with subparallel orientations and regular spacing or non-systematic which irregular orientations, shape, and spacing. A *joint set* is a group of joint surfaces which are more or less parallel. A *joint system* is two or more *joint sets* which are subparallel to each other and intersect. Joints may be unfilled; that is, the fracture may be open and void of mineral infilling or an open joint surface may be occupied with some form of mineral infilling. Joints can occur in bedrock as well as in unlithified sedimentary deposits. The development of joint surfaces in bedrock is most commonly in response to burial, unburial, application of regional deformational forces, application of local deformational forces, and the cessation of regional or local deformational forces.

Joint planes mapped within the underlying bedrock generally strike east-west and dip steeply towards the south. The locations and orientations of the mapped joint planes are presented on the

attached *Geologic Map* (Plate 1). The mapped joint surfaces are also illustrated, where appropriate, on the attached geologic sections based on the measured true and/or calculated apparent dip of the joint.

Shears

Shear is defined as a ductile deformation resulting from stresses that cause contiguous parts of a body, or material, to slide relative to each other in a direction parallel to their contact. A shear plane is defined as the surface or zone along which differential movement, by shear, has taken place. It should be noted that a shear plane is also synonymous with the definition of a fault. However, the term shear plane or shear zone is used when movement is interpreted to be in the "micro-sense" as compared to a "macro-sense" of displacement associated with a fault or fault zone. The development of a shear plane or shear zone in subsurface materials is most commonly related to regional or local faulting and folding. Simply, the subsurface stresses and pressures associated with faulting and folding can deform the adjacent bedrock or portions thereof. The deformation and/or movement at the shear surface often results in the presence of a zone of gouge or breccia typically consisting of clay, silt, or pulverized material derived from the surrounding parent material. Shear planes can develop within bedrock along pre-existing parting surfaces such as bedding, foliation, or joints planes but can also develop between parting planes, within massive bedrock, and/or in orientations which cross-cut the pre-existing bedrock structures. Shear planes can also develop during mass slope movements such as landslide. In instances where the basal failure surface of a landslide (i.e. landslide plane) did not fail along a pre-existing shear surface, the pressures and stresses at the basal surface of a slope failure can form a shear plane by the grinding of subsurface materials as the landslide develops followed by decomposition of the materials at the shear surface aided by the interaction between the sheared materials and groundwater.

Significant or mapable shear planes were not identified within the underlying bedrock during our engineering geologic study of the subject property.

Folds

Analysis of structural geologic data obtained during our engineering geologic study indicates that a significant fold feature is not present within the subsurface of the subject property.

Faults

A *fault* is a fracture, or zone of closely related fractures, along which there has been significant relative displacement of the materials, on opposite sides of the fault, in a direction parallel to the fracture. Sudden movement along a fault releases energy in the form of seismic waves and is commonly known as an earthquake. A fault can be present as a single plane of fracture or shear, or a broad zone of deformation or distributed tectonic movement ranging in width from a few feet to several miles. A *fault trace* is the line formed by the intersection of a fault with the Earth's surface.

Faults are classified as either active, potentially active, or inactive. The State of California defines an "active" fault as a fault that has exhibited surface displacement within the Holocene epoch of geologic time (i.e. the last 11,000 years). Potentially active faults are defined by the State of California as those which display evidence of surface displacement movement in the Pleistocene epoch of geologic time (i.e. between 11,000 and 1.6 million years before present). Inactive faults are those which do not display evidence of surface displacement within the Pleistocene and Holocene (i.e. the last 1.6 million years).

The Alquist-Priolo Special Studies Act of 1972, with subsequent amendments and revisions (i.e. name revision in 1993 to the Alquist-Priolo Earthquake Fault Zoning Act), prohibits locating most structures planned for human occupancy across known active faults. This state law was a direct result of the 1971 San Fernando Earthquake, which was associated with extensive surface fault ruptures that damaged numerous homes, commercial buildings, and other structures. Under the Alquist-Priolo Earthquake Fault Zoning Act, the State Geologist designates "California Earthquake Fault Zones", previously known as "Special Studies Zones", around faults that are known to be *sufficiently active* and *well-defined*. A *sufficiently active* fault is defined as a fault that has exhibited surface displacement, along one or more of its segments or branches, within the Holocene epoch of geologic time (i.e. the last 11,000 years). A *well-defined* fault is defined as a fault whose trace is clearly detectable by a trained Geologist as a physical feature at or just below the ground surface. Most new development projects located within designated California Earthquake Fault Zones are required to demonstrate the absence of active faults underneath building areas. Furthermore, the Alquist-Priolo Earthquake Fault Zoning Act specifies that it be assumed that active faults underlie the area located within 50 feet of the fault splays which are illustrated on the California Earthquake Fault Zone maps. No structures planned for human occupancy shall be permitted in this setback area unless detailed geologic investigation of this area indicates that active faults are not present. It should be noted that most local City and/or County governmental agencies are permitted to, and have adopted policies and/or criteria which are stricter than those established by the Alquist-Priolo Earthquake Fault Zoning Act. Specifically, most local City and/or County governmental agencies prohibit the construction of a structure planned for human occupancy within 50 feet of an active fault once the exact location of the fault has been determined by a detailed geologic study.

The subject property is not located within a California Earthquake Fault Zone (see Figure 4) and no known potentially active or active faults cross the site. However, as previously discussed in this report, regional geologic mapping by Dibblee (1991) indicates that the Santa Monica-Hollywood Fault is located approximately 250 feet to the south of the subject property (see Figure 3). Due to the limited scope of the proposed project (i.e. remedial slope restoration), the performing of a detailed seismic hazard evaluation with respect to the proposed project and/or the remaining portions of the subject property is not considered necessary.

HYDROGEOLOGY

Introduction

Hydrogeology is defined as the application of the science of geology to the study of the occurrence, distribution, quantity, movement, and quality of water below the surface of the earth and the interrelationship between the geologic conditions and groundwater. With respect to proposed project and our engineering geologic study of the subject property, our hydrogeologic analysis of the site primarily involved the determination of the presence and distribution of groundwater (current and/or historic) within the subsurface in order to perform accurate engineering geologic and geotechnical analysis of the site so that proper recommendations (mitigative or otherwise) can be made by LP, the Project Geotechnical Engineer, and/or the Project Environmental Health Specialist with respect to the proposed project.

Current and historic groundwater conditions of the subject property were determined by our site observations and our review of the referenced engineering geologic publications and reports. Off-site groundwater interpretations, performed when necessary by LP as part of our preparation of the geologic sections, are based collectively on the groundwater conditions observed within the subject property, our review of groundwater data presented in the referenced engineering geologic publications and reports, and our analysis of the regional topographic and geologic conditions of the area.

Groundwater Defined

All water that is present beneath the surface of the Earth is referred to as subsurface water or *groundwater*. Groundwater most commonly occurs in two different zones within the subsurface. One zone, which usually occurs immediately below the ground surface, contains both water and air in the available pore space of the surrounding sediment or rock materials and is referred to as the *unsaturated zone*. And most often, the zone located beneath the *unsaturated zone* is an area in which all the available pore space is filled with water. This zone is referred to as the *saturated zone*. In the *unsaturated zone*, groundwater is most often present as moisture which is retained within the surrounding sediment or rock as a film on the grain surfaces or water which is percolating downward through the subsurface towards the *saturated zone*.

In the subsurface, groundwater can be unconfined, confined, semi-confined, or perched. A *confining bed* is a rock unit or layer which has a low hydraulic conductivity and thus restricts the movement of groundwater. The presence of a *confining bed*, or beds, within the subsurface can result in the presence of a confined, semi-confined, or perched groundwater condition.

In an unconfined subsurface condition, the upper surface of the saturated zone is referred to as the *potentiometric surface*. The *potentiometric surface* is commonly referred to as the "level of groundwater" or "groundwater table" and is the elevation in the subsurface at which the hydraulic pressure of the subsurface water is equal to atmospheric pressure. This is also the level or elevation at which water will be observed in a well, or exploratory excavation, which penetrates into the saturated zone. In a confined subsurface condition, the saturated zone is overlain by a *confining bed* and the upper surface of the saturated zone is referred to as the

piezometric surface. The *piezometric surface* usually possesses a hydraulic pressure which is greater than atmospheric pressure and is the level or elevation at which water will be observed in a well, or subsurface excavation, which penetrates through the *confining bed* into the saturated zone.

Factors controlling the presence, elevation, and movement of groundwater include regional climatic conditions, geomorphology, distance to rivers, lakes, and oceans, geologic structure, hydraulic conductivity of the subsurface materials, dynamic characteristics of the water, strength of the gravitational field, irrigation, and land use. Thus, the presence, elevation, and movement of groundwater can vary significantly over short distances and can also fluctuate. Therefore, groundwater levels at the time of construction and during the life of the structures may vary from the observations or conditions encountered at the time of our field exploration.

Observed Site Groundwater Conditions

Based on the findings of our engineering geologic study, unconfined conditions are interpreted to the present within the subsurface of the subject property. Thus, the underlying level of groundwater, for purposes of this study, shall be is referred to as the *potentiometric surface*.

The underlying potentiometric surface was not encountered or observed during our engineering geologic study of the subject property. In addition, naturally occurring seeps or springs were not observed within the site during our study. However, surface flow of water was observed in the concrete-lined channel located immediately to the east of the subject property. It should be noted that channelized water flow of this type is not an indicator of the potentiometric surface in the shallow subsurface of the subject property.

Historic Site Groundwater Conditions

Evidence of a historically high potentiometric surface, including seeps, springs, or perched water, was not observed during our engineering geologic study of the subject property. The referenced Seismic Hazard Evaluation Report for the Hollywood Quadrangle indicates the presence of a historically high groundwater level at a depth of approximately 150 feet below existing grade in the general area of the subject property (DOC CDMG; now referred to as the California Geological Survey - CGS, 1998).

Highest Anticipated Site Groundwater Conditions

As previously stated, the underlying potentiometric surface, or evidence of a historically high potentiometric surface, was not observed during our engineering geologic study of the subject property. While it is known that the presence, elevation, and movement of groundwater can vary significantly over short distances and can also fluctuate; based upon the location, elevation, topographic and geologic conditions of the subject property, the underlying potentiometric surface is interpreted to be at a depth to where it will not have an impact on the proposed remedial slope restoration project of the subject property.

SITE/SLOPE STABILITY

Past Slope Performance (Landslides and Rain Damage)

Based on the findings of our engineering geologic study, the subject property is free from any recent rain-related damage such as landslides or mudflows. However, uncertified fill and colluvium on slopes are typically subject to downhill creep and erosion.

Quantitative Surficial and Gross Stability

The orientation of the geologic structure of the underlying bedrock is typically considered favorable with respect to the gross stability of the site as the mapped foliation and joint planes are supported in the down-dip direction. However, it should be noted that this engineering geologic study did not include quantitative engineering analysis or calculations associated with a determination of surficial and/or gross slope stability. A quantitative determination of slope stability of the subject property and/or the project area shall be performed, as necessary, by the Project Geotechnical Engineer, utilizing the geologic map and geologic sections which are included herein.

CONCLUSIONS

General Findings

Based on the findings of our engineering geologic study, and our experience with similar projects, LP has concluded that the proposed project is feasible from an engineering geologic standpoint, provided the recommendations presented in this report, and those presented by the Project Geotechnical Engineer, are properly incorporated into the plans and implemented during construction.

Geologic Conditions

The engineering geologic conditions, hydrogeologic conditions, and geologic hazards of the subject property that can impact the engineering analysis and/or design requirements associated with the proposed project are described in detail in the previous sections of this report. It is recommended that the property owner, Project Engineers (i.e. Geotechnical, Civil, and/or Structural), and Contractor be familiar with the site engineering geologic conditions, hydrogeologic conditions, and geologic hazards presented in this report as well as the following engineering geologic recommendations concerning the proposed project.

RECOMMENDATIONS

Mitigation of Un-Permitted Retaining Walls and Associated Grading

As previously discussed in this report, two retaining walls and associated uncertified backfill have recently been constructed on the east-facing slope located immediately adjacent to the western property line of 1805 N. Nichols Canyon Road. In order to mitigate this un-permitted

and non-conforming condition, it is proposed to demolish and remove the retaining walls and uncertified backfill followed by the construction of a 1.5(h):1(v) max. fill-slope in order to restore the pre-existing grade. The remedial slope grading shall be designed and performed in accordance with the following grading requirements and those presented by the Project Geotechnical Engineer. As part of this remedial grading, it is also recommended that a surficial drainage control device (i.e. a concrete V-drain) be installed on the restored slope in order to collect and transfer runoff from the slope restoration area. The appropriate location and construction specifications of the recommended V-drain shall be determined by the Project Civil Engineer and will be shown on the detailed slope restoration plans.

Please Note: As the majority of the aforementioned remedial slope restoration activities will be located within the adjacent property to the west, written permission from the adjacent property owner will be required prior to the permitting and implementation of the proposed project.

Mitigation of Un-Permitted Wooden Planter Walls and Associated Backfill

In order to mitigate the un-permitted wooden planter walls and the associated uncertified backfill present on the east-facing slope of the subject property, it is recommended that the wooden walls and backfill be removed from the slope. This action should essentially restore the pre-existing grade of the slope and it is anticipated that this removal operation will expose the underlying bedrock. Upon completion of the removal operation, it is recommended that the exposed slope face be covered in geo-textile fabric as specified by the Project Geotechnical Engineer and/or Project Civil Engineer in order to protect the slope face from erosion. The appropriate location and construction specifications of the recommended geo-textile fabric shall be determined by the Project Civil Engineer and will be shown on the detailed slope restoration plans.

Concrete Staircase and Adjacent Masonry Walls (To Remain)

As previously discussed in this report, a concrete staircase and adjacent masonry walls have been constructed on the northern portion of the east-facing slope of the subject property. The locations of the staircase and adjacent walls are illustrated on the attached *Geologic Map* (Plate 1). For the most part, the masonry walls constructed along the margin of the staircase do not appear to "retain" or support excavated areas and/or earth materials present on the slope. Where localized portions of the walls have been constructed parallel or sub-parallel to the face of the east-facing slope, less than 2 feet of earth materials appear to be in contact with the upslope wall. It is reported by the property owner and Vracko Construction, Inc. that the concrete staircase and adjacent walls bear upon the underlying bedrock with the use of a conventional footing system. Based on our site observations, this footing condition appears likely. However, subsurface observation and confirmation of the as-built footing condition for the staircase and adjacent walls was not performed by LP as part of this engineering geologic study.

Based on the findings of our engineering geologic study, it is the professional engineering geologic opinion that the mitigation (i.e. removal) of the un-permitted staircase and adjacent masonry walls will most likely cause further disturbance to the underlying slope which would result in a slope condition which is more adverse than what presently exists at the site. Specifically, the existing natural grade of the east-facing slope located along the alignment of the

existing staircase is on the order of 1(h):1(v) to 0.75(h):1(v). It follows that remedial grading as a means of restoring the pre-existing slope located along the alignment of the existing staircase (i.e. construction of 1(h):1(v) fill-slopes and/or slightly steeper cut-slopes after removal of the structures) does not appear feasible if it is required to be in conformance with current grading codes and ordinances put forth by the City of Los Angeles Department of Building and Safety.

Due to the aforementioned site-constraints and conditions, it is proposed that the existing staircase and adjacent walls be left in-place on the slope. This is considered acceptable from an engineering geologic standpoint as it is our professional engineering geologic opinion that the existing staircase and adjacent walls do not constitute a geologic hazard to the subject site or adjacent properties.

Please Note: It *may* be required to underpin portions of the existing staircase and adjacent masonry walls as part of the proposed project if deemed necessary by the Project Geotechnical Engineer and/or the Project Civil Engineer. Any proposed foundation underpinning or structural improvement deemed necessary shall be specified by the Project Civil Engineer and will be shown on the detailed slope restoration plans.

Grading

General

General engineering geologic guidelines are presented below to provide a basis for quality control during any proposed site grading. We recommend that all structural fills be placed and compacted under observation and testing by the Project Geotechnical Engineer in accordance with the following requirements and those presented by the Project Geotechnical Engineer.

Demolition of Existing Structures

If the demolition of existing structures is necessary as part of the proposed project, the Contractor should locate all existing foundations, floor slabs, debris pits, uncontrolled fills, and subsurface structures. These structures, uncontrolled fills, and any disturbed soils should be removed completely. The resulting excavations should be cleaned of all loose or organic material, the exposed native materials should be scarified to a depth of 8 inches and compacted, and the excavation shall be backfilled under the observation of the Project Geotechnical Engineer. If the area to receive fill is to be utilized for the support of structures, deeper removals may be required as specified by the Project Geotechnical Engineer.

Site Preparation

It is recommended that all brush, vegetation, loose soil, and other deleterious materials be removed prior to fill placement. The general depth of stripping shall be sufficiently deep to remove the root systems and organic topsoils. A careful search shall be made for subsurface trash, abandoned masonry, abandoned tanks and septic systems, and other debris (including uncertified fill) during grading. All such materials, which are not acceptable fill material, shall

be removed prior to fill placement. The removal of trees and large shrubs shall include complete removal of their root structures.

Remedial Fill-Slope

The proposed remedial fill-slope shall be designed and constructed as specified by the Project Geotechnical Engineer. For reference, a typical 1.5(h):1(v) fill-slope detail is included in Appendix B of this report.

Removal Bottoms, Keyways, and Benches

In areas to receive compacted fill, the existing earth materials shall be removed and recompacted as structural fill as specified by the Project Geotechnical Engineer.

Removal bottom, keyway, and bench excavations constructed during grading shall expose competent bedrock in the bottom and shall be observed and approved by the Project Engineering Geologist prior to fill placement. Keyways constructed at the toes of fill-slopes shall be a minimum of 2 feet deep into competent bedrock, as measured on the downhill side of the keyway. The exposed, approved bottom of a removal area, keyway, or bench shall be scarified, mixed, and moisture conditioned to a minimum depth of 8 inches or as specified by the Project Geotechnical Engineer. During construction of removal bottom, keyway, and bench excavations, a careful search shall be made for zones of loose soil and uncertified fill. The bottom of removal areas should be proof-rolled, in the presence of the Project Engineering Geologist and Project Geotechnical Engineer, with appropriate rubber-tire mounted heavy construction equipment or a loaded dump truck to detect loose, yielding soils that must be removed to stable material. If encountered, these loose zones shall be properly removed to the firm underlying soil or bedrock and properly backfilled and compacted as directed by the Project Geotechnical Engineer.

Subdrains

The installation of subdrains is recommended in association with the construction of any proposed fill-slopes, buttress fill-slopes, and canyon fills. During construction of a fill-slope, it is recommended that a subdrain be installed in the bottom of the keyway excavation and at the heal of bench excavations as necessary so that the fill-slope is provided a subdrain at vertical intervals not exceeding 20 feet. If topographic and/or property line constraints prevent the installation of subdrain in the bottom of the keyway excavation, the subdrain should be placed at the heal of the lowest removal bench. The canyon "cleanouts" constructed in association with a canyon fill shall also be provided with a subdrain for the entire length of the cleanout.

The subdrain shall consist of a 4-inch-diameter (minimum) Schedule 40, or better, perforated PVC pipe with the perforations placed downward surrounded in a minimum of 3 cubic feet, per linear foot, of ¾-inch-diameter durable aggregate. *Accordion* or similar type pipe is not acceptable for subdrain pipe. The gravel and perforated pipe shall be wrapped with geosynthetic fabric such as Mirafi 140, or approved equivalent, in order to protect the subdrain from clogging. The subdrain shall be daylighted utilizing a solid pipe to the slope face or to a location specified by the Project Civil Engineer. In locations where seasonal or constant water flow from a

subdrain is anticipated, the subdrain outlet should be connected to the surficial drainage control system of the site (if feasible), to a storm drain, or to the street as specified by the Project Civil Engineer. If a subdrain outlet is to be connected to the subsurface piping of a surficial drainage control system, or to a storm drain, an observation vault and/or cleanout must be installed near the connection point so that the water discharge from the subdrain can be observed.

Suitable Fill Material

The suitability of the on-site soils for use as compacted fill, and the requirements for any import material desired to be utilized as compacted fill, shall be determined and/or provided by the Project Geotechnical Engineer.

Fill Placement and Testing

All fill placed within the subject property shall contain a moisture content and be compacted to a degree as specified by, and shall be performed under the observation of, the Project Geotechnical Engineer. If either the moisture content or relative compaction does not meet the criteria of approval of the Project Geotechnical Engineer, the Contractor shall rework the fill until it does meet the prescribed criteria.

Inclement Weather and Construction Delays

If construction delays or the weather result in the surface of the fill drying, the surface shall be scarified and moisture conditioned before slabs are constructed or before the next layer of fill is added. Each new layer of fill shall be placed on a rough surface so planes of weakness are not created in the fill.

During periods of wet weather and before stopping work, all loose material shall be spread and compacted, surfaces shall be sloped to drain to areas where water can be removed, and erosion protection or drainage provisions shall be made in accordance with plans provided by the Project Civil Engineer. After the rainy period, the Project Engineering Geologist and Project Geotechnical Engineer shall review the site for authorization to resume grading and to provide any specific recommendations that may be required. As a minimum, however, surface materials previously compacted before the wet weather shall be scarified, brought to the proper moisture content, and recompacted prior to placing additional fill.

During foundation construction, including any concrete flatwork, construction sequences shall be scheduled to reduce the time interval between subgrade preparation and concrete placement to avoid drying and cracking of the subgrade or the surface shall be covered or periodically wetted to prevent drying and cracking. If the surficial soils dry out due to delays between grading and foundation construction, it may be necessary to recondition the surficial soils (scarification, moisture condition, and recompaction) just prior to foundation and slab construction.

Drainage

General

The proper control of all surface runoff is and must remain a crucial element of site maintenance. Proper drainage and irrigation control within the site are important in order to reduce the potential for damaging ground/foundation movements due to hydroconsolidation, soil expansion or shrinkage, and landslides. It is recommended that the Project Civil Engineer and Landscape Architect be retained to prepare a detailed grading, drainage, and landscaping plan which utilize the following general engineering geologic guidelines, and any recommendations of the Project Geotechnical Engineer, with respect to site drainage control, landscaping, and irrigation.

Freeboard for Existing Rear Yard Retaining Wall

As previously stated in this report, a retaining wall is present to the west of the existing residence at the toe of the ascending rear-yard slope. Currently, this retaining wall lacks any "freeboard" or a concrete V-drain. While not a specific requirement as part of the proposed remedial slope restoration project, consideration should be given to providing at least 3 feet of freeboard to the existing retaining wall and an open-channel V-drain behind the wall in order to provide additional slough and drainage protection for the existing residence.

Drainage Control During Grading or Construction

During grading or construction, proper drainage shall be provided away from the building site, footings, and temporary excavations. This is especially important when construction takes place during the rainy season. A storm water erosion control plan should be prepared by the Project Civil Engineer and implemented during the rainy season as required by the local regulatory agency.

Drainage Control Devices

All pad drainage shall be collected and diverted away from proposed buildings and foundations in non-erosive devices as specified by the Project Civil Engineer. Pad drainage shall not be allowed to flow uncontrolled over slopes. Rain gutters and downspouts should be provided, properly maintained, and discharged directly into a drainage system or over paved areas which are sloped to the street. A drainage system consisting of area drains, catch basins, and connecting lines shall be provided to capture landscape and hardscape sheet flow discharge water. All drainage system piping shall be watertight and discharge directly to the street, storm drain, or to a location specified by the Project Civil Engineer.

Underground Water and Drainage Lines

All underground water lines and drainage lines shall be absolutely leak free. It is recommended that water mains, irrigation lines, and drainage lines be periodically checked for leaks for early detection of water infiltrating the underlying soils that could cause detrimental soil movements. If a leak is detected at any time, it must be repaired immediately.

Site Vegetation and Irrigation

Seepage of surface irrigation water or the spread of extensive root systems into the subgrade of footings, slabs, or pavements can cause differential movements resulting in distress and/or damage to the adjacent structures. Trees and large shrubbery shall not be planted so that roots grow under foundations and flatwork when they reach maturity.

Where landscaping is planned adjacent to structures or paved areas, it is recommended that design measures be taken by the Project Civil Engineer and Landscape Architect to restrict excessive landscape water from infiltrating the subgrade supporting foundations or the subgrade and base supporting paved areas. Design alternatives to restrict the infiltration of excessive landscape water for vegetation located adjacent to structures and paved areas include the implementation of landscape watering plans, the use of higher gradient ground slopes near structures and paved areas, the use of drains to collect and transmit excess irrigation water to drainage structures, or installing a *French Drain* extending at least 12 inches below the subgrade along the edge of the structure or pavement.

Care shall be taken to not over- or under-irrigate the site. Landscape watering shall be held to a minimum while maintaining a uniformly moist condition without allowing the soil to dry out. Irrigation systems should be turned off when significant rain is in the forecast. During extreme hot and dry periods, adequate watering may be necessary to keep soil from separating or pulling back from the foundations or slabs.

Maintenance of Drainage Devices

Site area drains, catch basins, roof gutters, downspouts, and any subdrain outlets should be inspected periodically to insure that they are not clogged, damaged, and that they are functioning properly. In addition, cracks in paved surfaces shall be sealed to limit infiltration of surface waters.

Slope Maintenance

A rigorous slope maintenance program should be adopted to maintain the existing and any proposed slopes. The following recommendations should provide guidelines for maintenance of the slopes:

- The slopes should be landscaped. An experienced Landscape Architect could be consulted for recommendations regarding the type of landscape to use on the slope that would help to reduce surface erosion and would need minimum amount of irrigation such as drought resistant plants. Trees with rooting systems that could severely disturb the outer slope materials should be avoided and/or removed.

- The moisture content of the slope outer face materials should be maintained close to the optimum throughout the year. Excessive watering or drying of the slope face must be avoided. Irrigation systems should be turned off when significant rain is in the forecast.

- Proper surface drainage should be maintained. Drainage swales should be inspected and cleaned before the rainy season. Any erosion around and underneath the swales should be repaired to prevent further undermining of the subgrade around the swales.

- If slope subdrain outlets are present on a slope, their locations should be carefully noted and extreme care should be taken to insure that the subdrain outlets do not become buried or blocked. Measures should be undertaken to insure that rodents or small animals can not enter or reside in a subdrain outlet. If a subdrain outlet becomes buried or blocked, it must be located and/or the obstruction must be removed immediately so that water may freely drain from the subdrainage system. It should be noted that a buried or blocked subdrain outlet could prevent groundwater from draining from within the slope thus causing the saturation of the earth materials as well as a rise in the hydrostatic pressures within the slope. This condition could possibly lead to failure of the slope.

- Burrowing by rodents disturbs the surficial materials and surface drainage conditions. If burrowing rodents are observed on or within the slope, they should be exterminated immediately and any disturbance to the slope should be corrected.

Excavation Characteristics

Based on the findings or our engineering geology study, moderately hard to very hard bedrock is present within the subsurface of the site and will most likely be encountered during construction of any proposed subsurface excavations. Should a very hard layer be encountered, coring or the use of high-impact hammers may be necessary.

Temporary Excavations

All temporary excavations, including overexcavations and utility trench excavations should comply with Cal/OSHA and any other applicable regulatory agency requirements. Excavations deeper than 5 feet shall be constructed as specified by the Project Geotechnical Engineer. No surcharge loads should be placed, nor should equipment operate, within a setback distance from the top of excavation side slopes equal to the depth of excavations. All excavations shall be stabilized within 30 days of initial excavation. Water should not be allowed to pond near the top of the excavation, nor be allowed to flow toward it.

Site Observations and Testing

Prior to the start of site preparation and/or construction, we recommend that a pre-construction meeting be held with the owner or developer, contractor, project engineers, City Inspector, and LP to discuss the project. In addition, we recommend that LP be retained to perform the following tasks prior to and/or during construction.

- Review the grading, drainage, and/or foundation plans to verify that the recommendations contained in this report have been properly incorporated into the project plans and specifications. If LP is not provided the opportunity to review these documents, we can

take no responsibility for misinterpretation of our findings, conclusions, and recommendations.

- Observe and advise during all grading activities including, but not limited to, site preparation, observation of all removal bottom, keyway, bench excavations and backcuts, observation of cut-slopes, and observation of the placement of slope subdrains and/or canyon cleanout subdrains and outlets.

- All fill which is placed for engineering purposes shall be observed and tested by the Project Geotechnical Engineer to confirm proper site preparation, suitability of removal excavations, scarification, selection of suitable fill materials, and placement and compaction of fill.

Should any site observation reveal any unforeseen geologic or geotechnical hazard, the Project Engineering Geologist and/or the Project Geotechnical Engineer will recommend treatment. Please advise LP at least 24 hours prior to any required site observation. A complete set of approved plans should be provided to the Project Engineering Geologist and Project Geotechnical Engineer prior to site grading and/or construction, and a set of signed and approved plans should be available on-site for review.

Responsibilities and Site Control

As a reminder, LP is not a licensed Land Surveyor, Civil Engineer, or Contractor and LP can not perform the duties of a Land Surveyor, Civil Engineer, or Contractor. As such, the client, property owner, and/or developer should fully understand and acknowledge that LP is not responsible for the performance of work by third parties including, but not limited to, the project surveyor, civil engineer, grading contractor, construction contractor, and/or subcontractors. LP's observation of the work of other parties on a project shall not relieve such parties of their responsibility to perform their work in accordance with applicable plans, specifications, and safety requirements. It should be noted that continuous or periodic monitoring by LP's employees does not mean that LP is observing or verifying all site work. In addition, the engineering geologic observation services performed by LP do not include establishing or verifying "lines and grades." LP will only make on-site observations appropriate to the field services provided by LP and will not relieve others of their responsibilities to perform, observe, or test the work.

It should be clearly understood and acknowledged that it is the responsibility of the client, property owner, developer, and/or their authorized agent(s) to insure that the engineering geologic information and recommendations provided by LP in association with the project are properly and thoroughly conveyed to the project architect(s), engineer(s), and/or contractor(s) so that they may be properly incorporated into the plan and that the necessary steps are taken to see that the contractor(s) carries out such recommendations in the field. LP is not and will not be responsible for the acts, errors, or omissions of contractors or other parties associated with the project and the subject site.

Plan Review

This engineering geologic study was performed and this report was prepared on the basis of the furnished project plans and/or information. Formal plans should be reviewed by LP. Should the plans differ substantially from the provided plans or information, additional engineering geologic exploration and analysis may be required.

ASSUMPTIONS and LIMITATIONS

General

This report presents the results of our engineering geologic study concerning the subject property and the proposed project. It is strongly recommended that this report be read in its entirety in order for the reader to completely and clearly understand LP's engineering geologic findings, conclusions, and recommendations concerning the subject property and the proposed project. In addition, it is also recommended that the following sections be carefully read and completely understood as they provide information concerning the assumptions of this study and the limitations of this report. It should be noted that the following "Assumptions and Limitations" also pertain to any future addendum, supplemental, update, or final engineering geologic reports prepared by LP concerning the subject property and proposed project as well as any additional or revised "Assumptions and Limitations" presented therein. Any questions the reader may have concerning any portion of this report, or any portion of any future addendum, supplemental, update, or final reports concerning the site should be presented to LP prior to use of this or future reports.

Report Intent

It is the intent of this report to aid in the design and completion of the described project. Implementation of the advice presented in the "Conclusions" and "Recommendations" sections of this report is intended to reduce risk associated with the proposed project and should not be construed to imply total performance of the project. As previously stated, this report is issued with the understanding that it is the sole responsibility of the client, or their authorized agent(s), to insure that the engineering geologic information and recommendations provided in this report are conveyed to the project architect, engineers, and contractors so that they may be properly incorporated into the plan and that the necessary steps are taken to see that the contractor carries out such recommendations in the field.

Report Use

LP has prepared this report concerning the subject property for the exclusive use of the client and their authorized agents and shall not be considered transferable. Prior to use by others, the subject site and this report must be reviewed by our office. Following review, additional work may be required to update and/or supplement this report. In addition, this report should not be utilized in order to form an opinion concerning the geologic/geotechnical conditions of the adjacent or surrounding properties as the findings presented in this report apply only to the explored area of the subject property and may not accurately reflect the underlying conditions of the surrounding area and/or the adjacent properties.

This report is not intended for use as a bid document. Any company or person using this report for bidding or construction purposes shall perform such independent investigation, as they deem necessary, to satisfy themselves as to the surficial and subsurface conditions of the project site.

Accuracy of Topographic Base Map(s)

The engineering geologic and geotechnical engineering analysis of a particular site and subsequent conclusions and recommendations with respect to a proposed project are, in some cases, highly dependent on certain factors which include, but are not limited to, the topographic conditions of the subject site, the adjacent slopes, and/or the locations of property lines. It should be noted that, at the time of this study, it is LP's assumption that the provided topographic survey, grading plan, and/or site plan (utilized as a base for the geologic map(s) and geologic section(s) constructed as part of this study) accurately present the current topographic conditions of the site, adjacent slopes, and also accurately depict the locations of the existing structures (if present), easements, property lines, proposed structures, and/or proposed grades. It should be clearly understood that LP's use of the provided topographic survey, grading plan, or site plan does not imply or verify the accuracy of the provided topographic survey, grading plan, or site plan. If at a time subsequent to the completion of this engineering geologic study and report, a revision is made to the site topographic survey, grading plan, or site plan, the findings, conclusions, and recommendations of this report may be partially invalidated, wholly invalidated, or revised. In addition, supplemental engineering geologic exploration and analysis concerning the subject property and proposed project may also be necessary upon our review of the revised topographic survey, grading plan, or site plan.

Locations of Exploratory Excavations

The locations and elevations of the exploratory excavations of this study (if applicable), as presented on the various geologic illustrations contained in this report, were determined by use of a steel tape, brunton pocket transit, and interpolation between contours, topographic features, fixed monuments and/or structures illustrated on the supplied topographic map. The locations and elevations of the exploratory excavations of other consultants, if applicable, were approximately determined by our review and analysis of the various geologic maps and illustrations presented in the referenced reports containing the exploration data. The presented locations and elevations should be considered accurate only to the degree implied by the method used. If a more accurate method of determining the locations and elevations of the exploratory excavations was performed as part of this study, the particular method and degree of accuracy was discussed in the "Scope of Work" section of this report.

Variation in Subsurface Conditions

The engineering geologic conclusions and recommendations contained within this report concerning the proposed project are based on the findings of the tasks described in the "Introduction" section of this report with the assumption that the subsurface conditions within the site do not deviate appreciably from those observed or encountered during our geologic study. In view of the general geologic conditions described herein, based on our limited observations of the site and/or surrounding area, it should be understood that there is a possibility that different

subsurface conditions exist within the site and/or adjacent area. Simply, if observation or exploration was performed at a particular location, it may not be indicative of the portions of the site not observed or explored. The nature and extent of variations in subsurface conditions may not become evident until grading or construction. As such, it should be clearly understood that it is the responsibility of the client, their authorized agent(s), or contractor(s) to bring any deviations or unexpected conditions observed during grading or construction to the attention of the Project Engineering Geologist and the Project Geotechnical Engineer of record. In this way, supplemental recommendations can be made with a minimum delay to the project.

Site Risks

It should be noted that all building sites are subject to a certain degree of risk that cannot be wholly identified and/or entirely eliminated. Building sites are subject to many detrimental engineering geologic and/or geotechnical hazards including, but not limited to, the effects of water infiltration, erosion, concentrated drainage, settlement, expansive soil movement, expansive bedrock movement, seismic shaking, fault rupture, landsliding, and slope creep. Risks from these hazards can typically be reduced by employing qualified engineering geologic and geotechnical engineering professionals. However, even with a thorough subsurface exploration and testing program performed by a qualified engineering geologist and/or geotechnical engineer, significant variability of the underlying earth materials may be present within the site. In addition, it is possible that latent (hidden) geologic hazards are present within the site which are concealed by earth materials, vegetation, existing structures, and hardscaping. If such defects are present, they are beyond the evaluation of the Project Engineering Geologist and/or the Project Geotechnical Engineer. In addition, the level of risk and/or the potential for negative site effects from many geologic/geotechnical hazards are highly dependent on the property owner or developer properly developing and maintaining the site, drainage facilities, slopes, and by correcting any deficiencies found during occupancy or use of the property. It should be clearly understood that owner and/or developer is responsible for retaining appropriate and qualified design professionals and contractors in developing the property and for properly maintaining the site and structures. Retaining the services of an engineering geologic and/or geotechnical engineering consultant shall not be construed to relieve the owner, developer, or contractors of their responsibilities or liabilities.

Hazardous Materials

It should be clearly understood that the identification, sampling, testing, excavation, handling, and/or disposal of any hazardous materials, that may or may not be present within the site, is beyond the scope of this study. In the event such materials are discovered by additional site studies or are encountered during grading or construction, appropriate environmental studies and site mitigation/remediation work may be required. In addition, the client and/or property owner shall acknowledge and/or accept that LP has neither created nor contributed to the creation or existence of any hazardous, radioactive, toxic, irritant, pollutant, substance or constituent, or otherwise dangerous conditions at the site. All site generated non-hazardous and/or hazardous materials, including but not limited to samples, soil/rock cuttings, drilling fluids, decontamination fluids, development fluids, and used disposable protective gear and equipment are the property of the client and/or property owner.

Additional Work

Please be aware that the contract fee for our services to perform an engineering geologic study and prepare this report does not include additional work that may be required in association with the proposed project such as responses to report and/or plan review letters prepared by the building department or appropriate regulatory agency in association with you obtaining a grading/building permit, meetings, plan review by this firm, grading observations, footing observations, and/or any necessary geologic observation of the site with respect to the proposed project. Where additional services are requested or required, you will be billed on an hourly basis for our engineering geologic observation, exploration, consultation, and/or analysis in accordance with LP's current *Fee Schedule.*

Report Expiration

The findings, conclusions, and recommendations of this report are valid as of the date of issuance. However, it should be noted that changes in the surficial or subsurface conditions of a property may occur with the passage of time due to natural processes or works of man within the site or the adjacent area. Furthermore, changes in industry standards periodically occur due to code revisions, legislation, and broadening of knowledge. Accordingly, the findings, conclusions, and/or recommendations of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to our review and remains valid for a maximum period of one (1) year from the date of issuance unless LP issues a written opinion of its continued validity thereafter.

Warrantee

The professional opinions and engineering geologic advice contained in this report are based on LP's understanding of the proposed project, LP's evaluation of available information, and LP's general experience in the field of engineering geology. It should be noted that LP does not guarantee the engineering geologic interpretations presented in this report, only that the methods of this engineering geologic study and the professional engineering geologic opinions and advice provided in this report are generally consistent with the standard of care of the engineering geologic profession at this time for studies performed in the same locality and under similar project conditions. Simply, no warranty is expressed, implied, is made, or intended concerning this report, by furnishing of this report, or by any other oral or written statement by LP.

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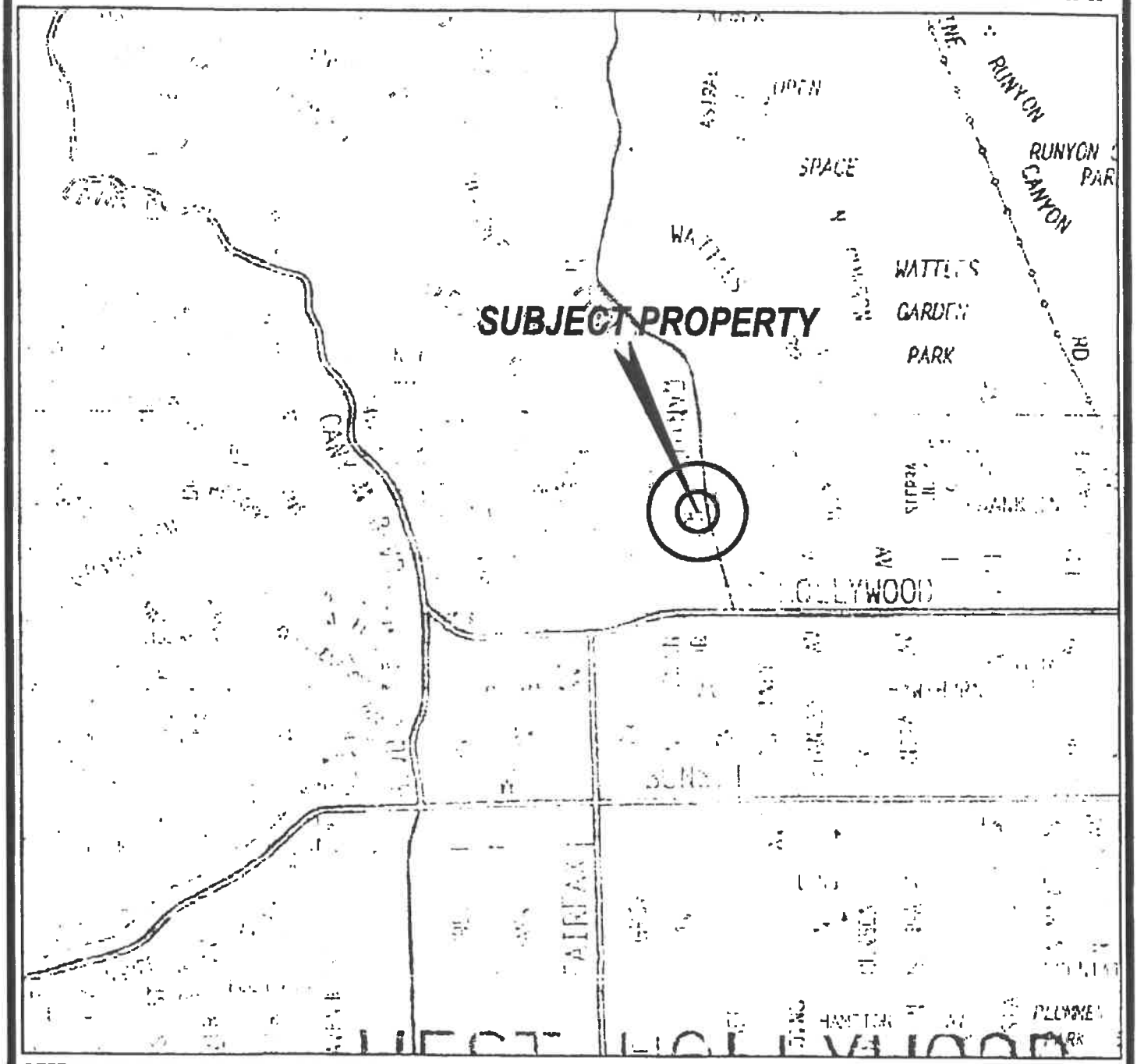
FIGURES

SITE LOCATION MAP



REFERENCE: *THOMAS GUIDE MAP, PAGE 593-B4*

N
W E
S

0 500 1000 1500 2000 3000 feet

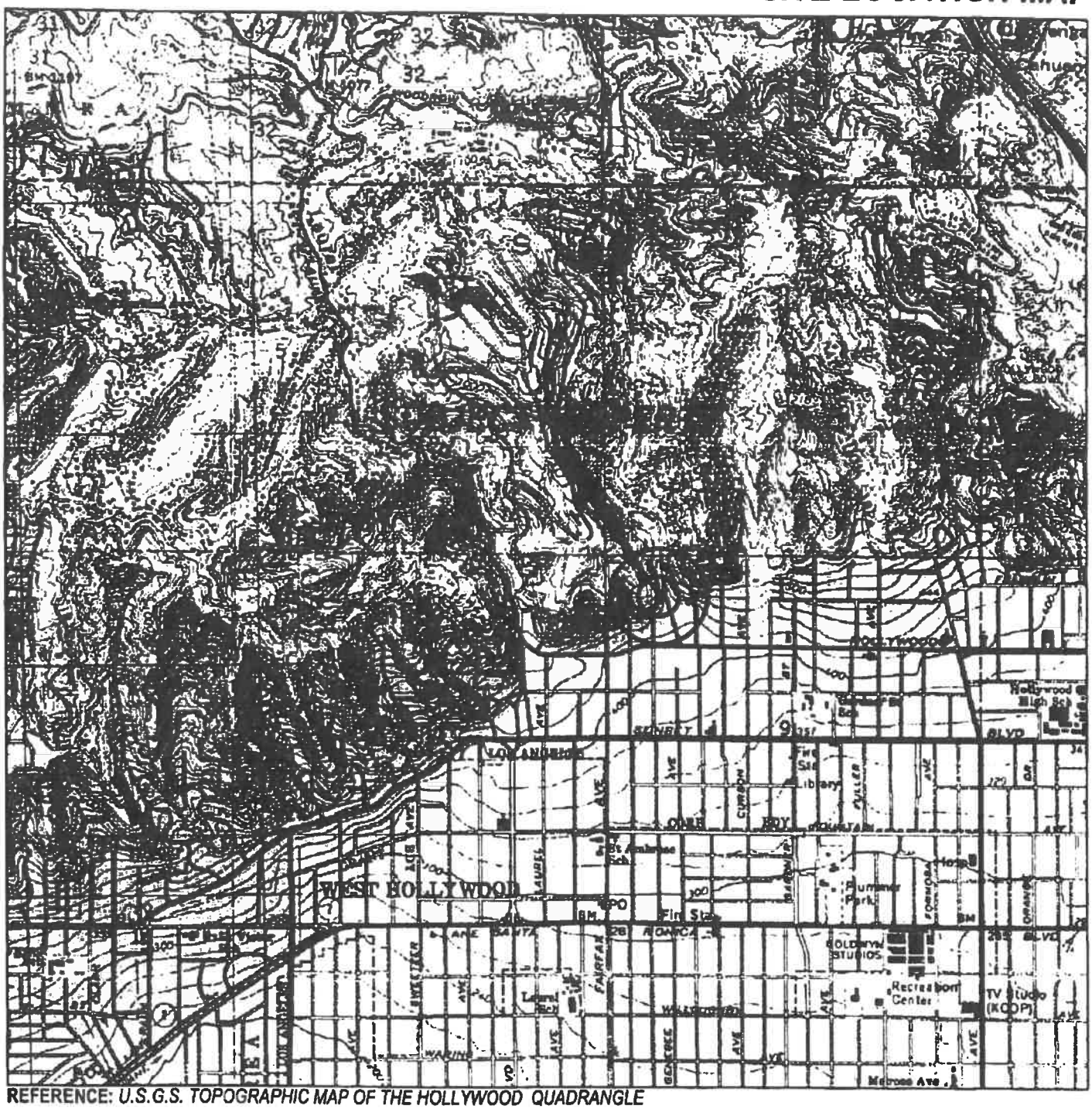
Land Phases, Inc.
CONSULTING ENGINEERING GEOLOGISTS

JOB NUMBER: LP 1045

JOB NAME: DIRKSEN

FIGURE 1

SITE LOCATION MAP



REFERENCE: *U.S.G.S. TOPOGRAPHIC MAP OF THE HOLLYWOOD QUADRANGLE*

N

W E

S

0 1000 2000 3000 4000 6000 feet

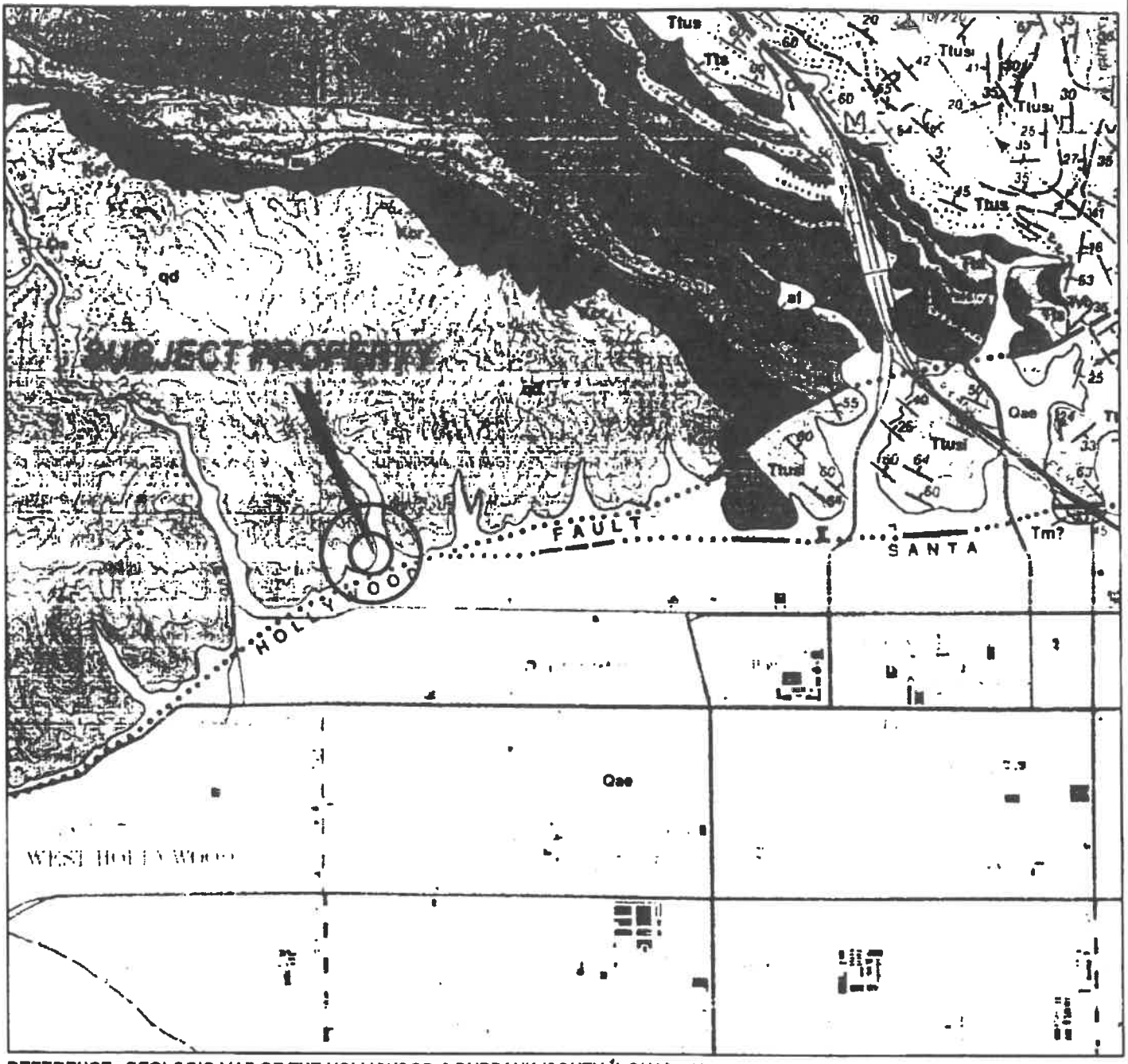
Land Phases, Inc.
CONSULTING ENGINEERING GEOLOGISTS

JOB NUMBER: LP 1045

JOB NAME: DIRKSEN

FIGURE 2

REGIONAL GEOLOGIC MAP



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N
W E
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0 1000 2000 3000 4000 6000 feet

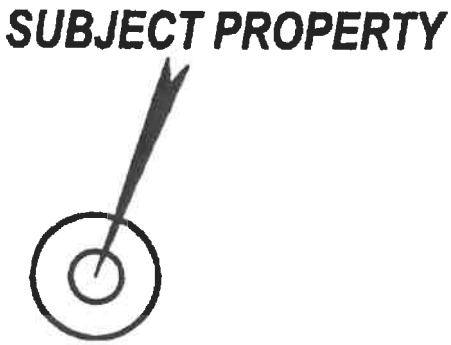
Land Phases, Inc.
CONSULTING ENGINEERING GEOLOGISTS

JOB NUMBER: LP 1045

JOB NAME: DIRKSEN

FIGURE 3

EARTHQUAKE FAULT ZONE MAP



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Land Phases, Inc.
CONSULTING ENGINEERING GEOLOGISTS

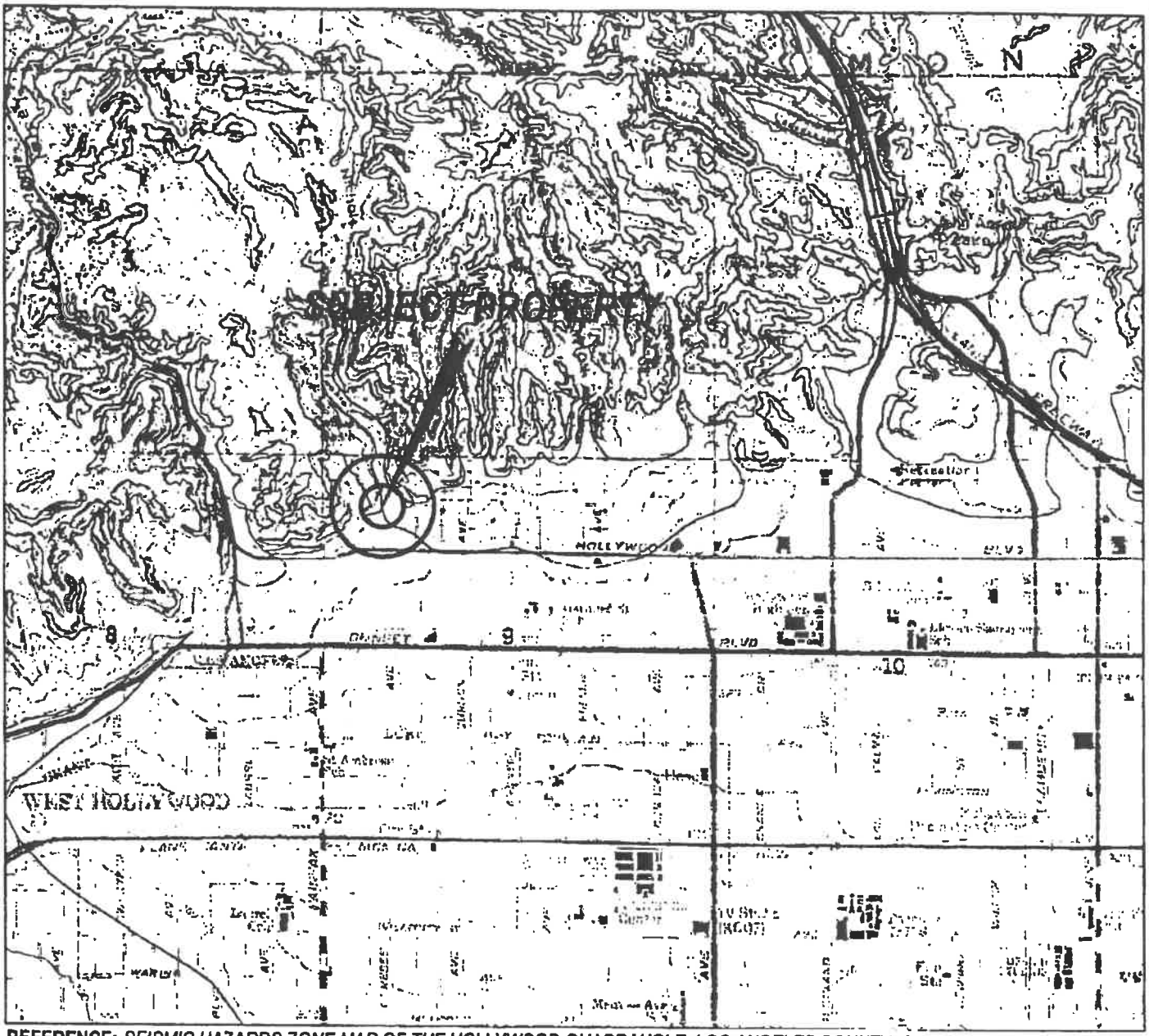
0 1000 2000 3000 4000 6000 feet

JOB NUMBER: LP 1045

JOB NAME: DIRKSEN

FIGURE 4

SEISMIC HAZARD MAP



REFERENCE: *SEISMIC HAZARDS ZONE MAP OF THE HOLLYWOOD QUADRANGLE, LOS ANGELES COUNTY, CA.: C.D.M.G., 1999*

Liquefaction: *Areas where occurance of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potencial for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.*

Earthquake-Induced Landslides: *Areas where previous occurrence of landslide movement, or local topographic, geological and subsurface water conditions indicate a potencial for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.*

N
W E
S

0 1000 2000 3000 4000 6000 feet

Land Phases, Inc.
CONSULTING ENGINEERING GEOLOGISTS

JOB NUMBER: LP 1045

JOB NAME: DIRKSEN

FIGURE 5

APPENDIX A

APPENDED DOCUMENTS

CITY OF LOS ANGELES
CALIFORNIA

ANTONIO R. VILLARAIGOSA
MAYOR

DEPARTMENT OF
BUILDING AND SAFETY
201 NORTH FIGUEROA STREET
LOS ANGELES, CA 90012

ROBERT R. "Bud" OVROM
GENERAL MANAGER
RAYMOND S. CHAN, C.E., S.E.
EXECUTIVE OFFICER

ORDER TO COMPLY AND NOTICE OF FEE

DIRKSEN,ROBERT B
1805 NICHOLS CANYON RD
LOS ANGELES, CA 90046

CASE #: 430721
ORDER #: A-2870940
EFFECTIVE DATE: October 17, 2011
COMPLIANCE DATE: **November 16, 2011**

OWNER OF
SITE ADDRESS: **1805 N NICHOLS CANYON ROAD**
ASSESSORS PARCEL NO.: 5551-007-024
ZONE: R1; One-Family Zone

An inspection has revealed that the property (Site Address) listed above is in violation of the Los Angeles Municipal Code (L.A.M.C.) sections listed below. You are hereby ordered to correct the violation(s) and contact the inspector listed in the signature block at the end of this document for a compliance inspection by the compliance date listed above.

FURTHER, YOU ARE ORDERED TO PAY THE CODE VIOLATION INSPECTION FEE (C.V.I.F) OF **$ 356.16** ($336 fee plus a six percent Systems Development Surcharge of $20.16) **WHICH WILL BE BILLED TO YOU SEPARATELY.** Section 98.0421 L.A.M.C.

NOTE: FAILURE TO PAY THE C.V.I.F. WITHIN 30 DAYS OF THE INVOICE DATE OF THE BILL NOTED ABOVE WILL RESULT IN A LATE CHARGE OF TWO (2) TIMES THE C.V.I.F. PLUS A 50 PERCENT COLLECTION FEE FOR A TOTAL OF **$1,176.00.**
Any person who fails to pay the fee, late charge and collection fee, shall also pay interest. Interest shall be calculated at the rate of one percent per month.

The inspection has revealed that the property is in violation of the Los Angeles Municipal Code as follows:

VIOLATION(S):

1. **Grading was performed without first obtaining a permit.**

   You are therefore ordered to: Obtain all required grading permits and approvals.

   Code Section(s) in Violation: 91.5R106.1.2, 91.5R103.1, 12.21A.1(a) of the L.A.M.C.

   Comments: Stairs leading up to flat area above the house on the side of the hill needs a grading permit for grading in a hillside area.

2. **A permit is required for masonry or concrete fences over 3.5 ft. high.**

   You are therefore ordered to: Obtain proper permit for the masonry or concrete fence over 3.5 feet high or lower the fence to not exceed 3.5 feet at any point of the fence.

   Code Section(s) in Violation: 91.106.2#13, 91.103.1, 12.21A.1.(a) of the L.A.M.C.

   Comments: Two walls on the hillside and the walls along side the steps leading up to the flat area on the hill side.

retaining wall(s) constructed of wood.

You are therefore ordered to: 1) Provide plans and specifications and obtain required grading and building permits.
2) Maintain all protective devices as shown on the approved plans and specifications submitted with the application for a permit.
3) Demolish and remove unapproved wooden retaining wall(s).
4)Construct approved retaining wall(s) or provide other approved means to stabilize slope.

Code Section(s) in Violation: 91.2304.11.7, 91.7005.6, 91.7006, 91.106.1.1, 91.106.1.2, 91.103.1, 12.21A.1.(a) of the L.A.M.C.

4. **Construction work was performed and concealed without obtaining the required inspections. CONCEALED WORK WITHOUT INSPECTION(S).**

You are therefore ordered to: 1) Expose all work concealed without the required inspections.
2) Call for inspection.

Code Section(s) in Violation: 91.104.2.2, 91.103.1, 12.21A.1.(a) of the L.A.M.C.

Comments: Any work concealed must be exposed for inspection.

5. **An inspection is required for the work performed.**

You are therefore ordered to: Obtain all required inspections including a final inspection.

Code Section(s) in Violation: 91.108.1, 91.103.1, 12.21A.1.(a) of the L.A.M.C.

NON-COMPLIANCE FEE WARNING:

In addition to the C.V.I.F. noted above, a proposed noncompliance fee in the amount of **$550.00** may be imposed for failure to comply with the order within 15 days after the compliance date specified in the order or unless an appeal or request for slight modification is filed within 15 days of the compliance date.
If an appeal or request for slight modification is not filed within 15 days of the compliance date or extensions granted therefrom, the determination of the department to impose and collect a non-compliance fee shall be final. Section 98.0411 L.A.M.C.

NOTE: FAILURE TO PAY THE NON-COMPLIANCE FEE WITHIN 30 DAYS AFTER THE DATE OF MAILING THE INVOICE, MAY RESULT IN A LATE CHARGE OF TWO (2) TIMES THE NON-COMPLIANCE FEE PLUS A 50 PERCENT COLLECTION FEE FOR A TOTAL OF **$1,925.00.**
Any person who fails to pay the non-compliance fee, late charge and collection fee shall also pay interest. Interest shall be calculated at the rate of one percent per month.

PENALTY WARNING:

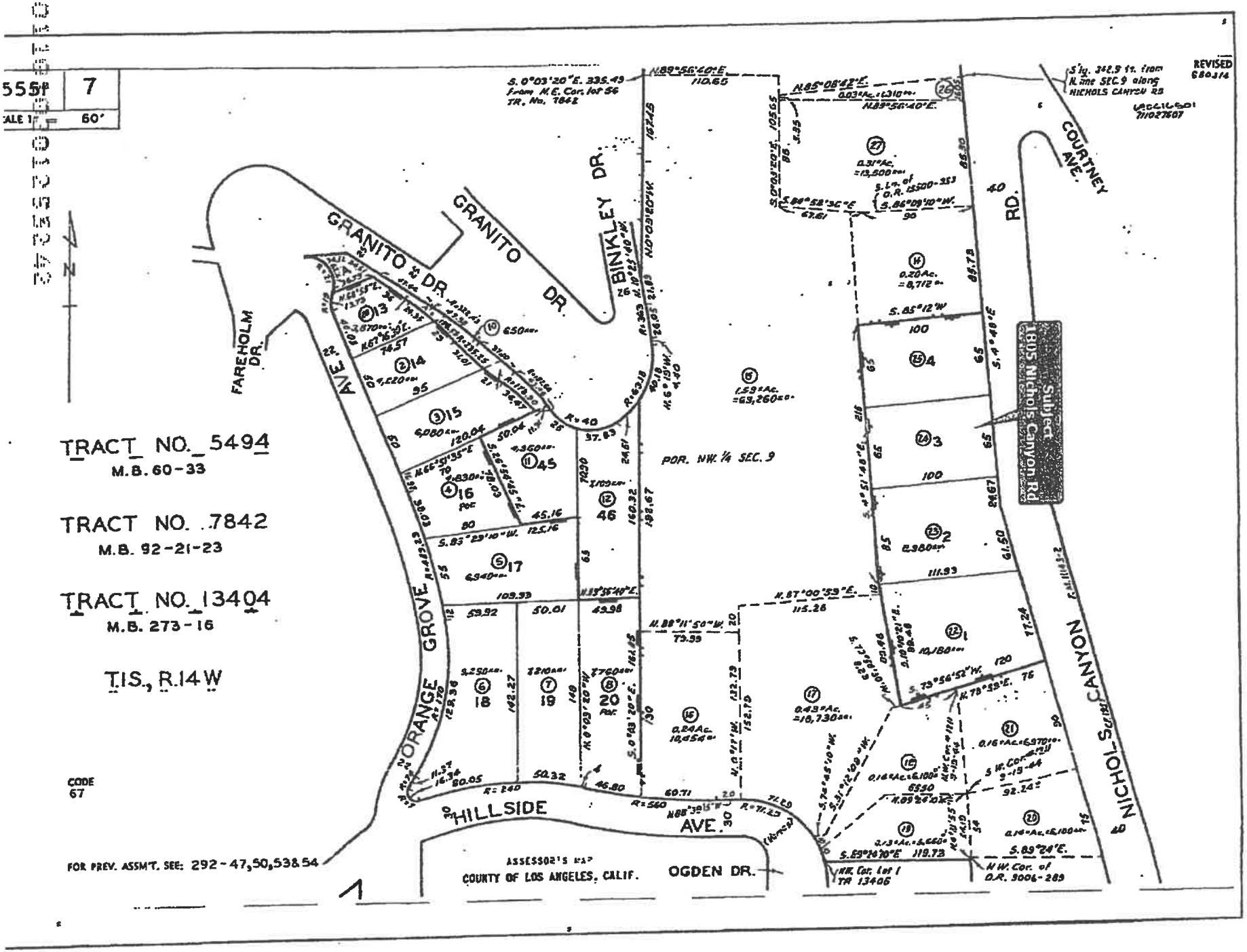
Any person who violates or causes or permits another person to violate any provision of the Los Angeles Municipal Code (L.A.M.C.) is guilty of a misdemeanor which is punishable by a fine of not more than $1000.00 and/or six (6) months imprisonment for each violation. Section 11.00 (m) L.A.M.C.

INVESTIGATION FEE REQUIRED:

Whenever any work has been commenced without authorization by a permit or application for inspection, and which violates provisions of Articles 1 through 8 of Chapter IX of the Los Angeles Municipal Code (L.A.M.C.) , and if no order has been issued by the department or a court of law requiring said work to proceed, a special investigation fee which shall be double the amount charged for an application for inspection, license or permit fee, but not less than $400.00 , shall be collected on each permit, license or application for inspection. Section 98.0402 (a) L.A.M.C.

APPEAL PROCEDURES:

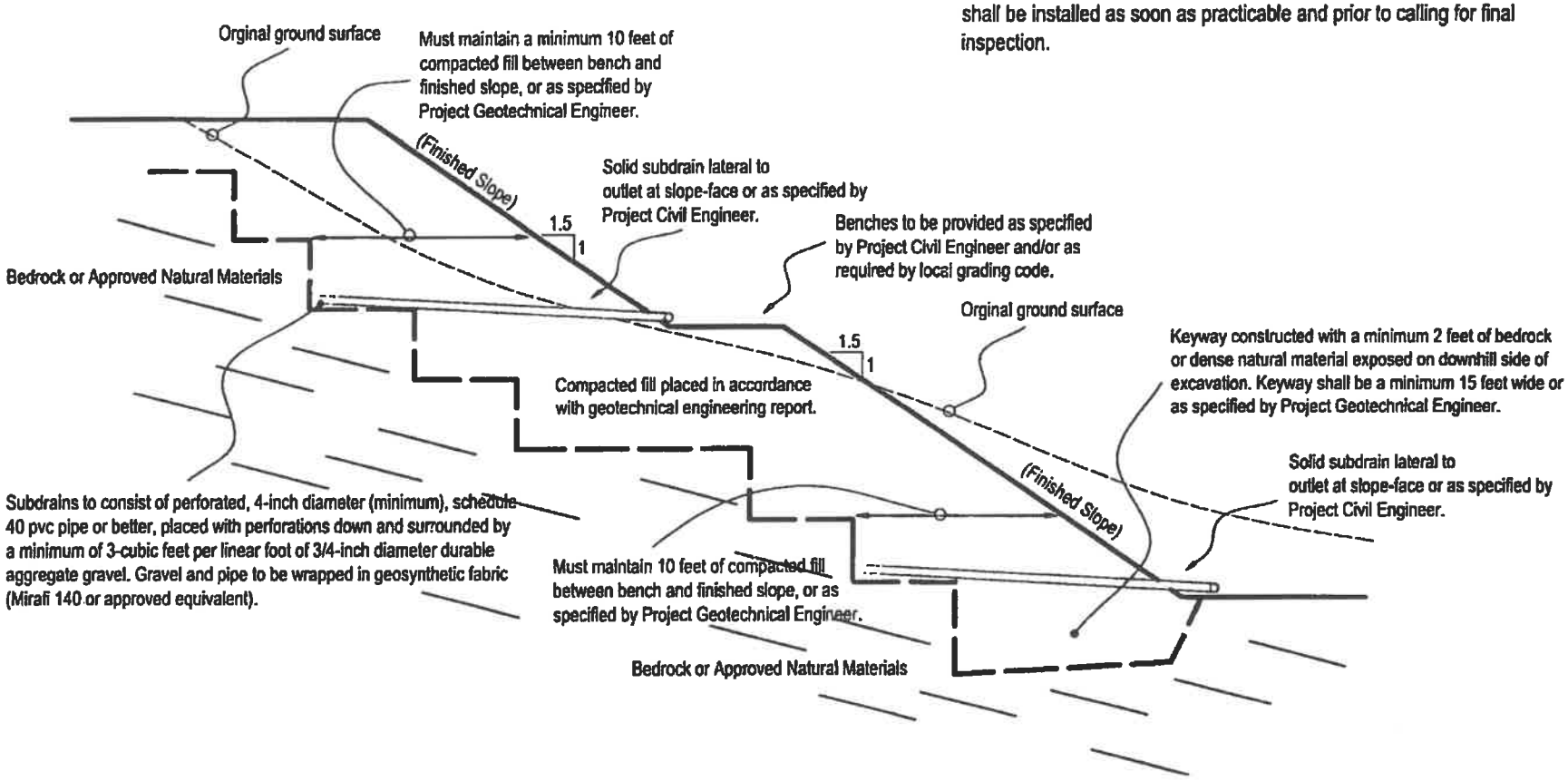
There is an appeal procedure established in this city whereby the Department of Building and Safety and the Board of Building and Safety Commissioners have the authority to hear and determine err or abuse of discretion, or requests for slight modification of the requirements contained in this order when appropriate fees have been paid. Section 98.0403.1 and 98.0403.2 L.A.M.C.


7
60'
TRACT NO. 5494
M.B. 60-33
TRACT NO. 7842
M.B. 92-21-23
TRACT NO. 13404
M.B. 273-16
T.1S., R.14W
CODE 67
FOR PREV. ASSM'T. SEE: 292-47,50,53&54
ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CALIF.
GRANITO DR.
BINKLEY DR.
FAREHOLM DR.
ORANGE GROVE AVE.
HILLSIDE AVE.
OGDEN DR.
COURTNEY AVE.
NICHOLS CANYON RD.
Subject
1805 Nichols Canyon Rd
POR. NW. 1/4 SEC. 9
REVISED

APPENDIX B

TYPICAL DETAILS and DIAGRAMS

(Section J110, 2010 CBC) The faces of cut- and fill-slopes shall be prepared and maintained to control against erosion. This control shall be permitted to consist of effective planting. Erosion control for the slopes shall be installed as soon as practicable and prior to calling for final inspection.



SUBDRAIN RUN LENGTH	MINIMUM PIPE DIAMETER
0 - 200 ft	4 inches
200 - 400 ft	6 inches
400 - 800 ft	8 inches

Typical 1.5(H): 1(V) Buttress Fill-Slope, Keyway, Benching, and Subdrain Detail

Land Phases, Inc.
Consulting Engineering Geologists

GRADING
OVERSIZE DOCUMENT

To view the Grading
oversize document for:

Tract: 13404
Block: — Lot: 3
Job Address: 1805 Nichols Canyon Rd
X-Ref: 2x Date: 1/20/12

Look for the document type called "Grading Oversize Document" dated 1/20/12 from the Document Type list in DAFS Retrieval; copy the corresponding Reel/Batch/Doc numbers (document location on microfilm); and request assistance from the Automated Records Counter staff to view the film and/or print a copy of the images. Prints require special permission which will be explained to you by Department staff.