GEOSYSTEMS, INC.

ENVIRONMENTAL
ENGINEERING-GEOLOGY
GEOTECHNICAL ENGINEERING

December 28, 2015
GS15-050X

Jennifer Silvers
c/o Gina Dickerson
Douglas Elliman Estate

via email: ginaagent@gmail.com

SUBJECT: Preliminary Visual Geologic Evaluation,
Lot 3, Tract 12000, 1805 Nichols Canyon Road, Los Angeles, California.

REFERENCES:

1) Evaluating Earthquake Hazards in the Los Angeles Region, USGS Professional Paper 1360, J.I. Ziony, 1985.

2) Report of Engineering Geologic Study for Proposed Remedial Slope Restoration - Mitigation of Un-Permitted Retaining Walls and Associated Grading for 1805 N. Nichols Canyon Road and A Portion of the Adjacent Property to the West Hollywood Area, City of Los Angeles, CA; Prepared by Land Phases Inc. (LPI), Project No. LP1045, dated January 20, 2012.

3) Limited Geotechnical Engineering Report, Proposed Remedial Slope Restoration and Mitigation of Un-Permitted Retaining Walls, 1805 N. Nichols Canyon, City of Los Angeles, CA; Prepared by CALWest Geotechnical (CW), Project No. 5325, dated January 27, 2012.

4) Approval for City of Los Angeles Department of Building and Safety, Grading Division (LADBS), Log #76503, dated March 20, 2012 for Tract 13404, Lot 3, 1805 Nichols Canyon Road.

At your request, we have completed a preliminary visual evaluation of the geologic conditions at the subject site. This evaluation was performed on December 16, 2015. The objective of this evaluation was to observe the current geologic conditions at the subject site and existing improvements.

This evaluation is solely related to the geologic conditions at the site and does not address City of Los Angeles permit conditions, building code compliance, structural engineering, soils

engineering, civil engineering, grading, drainage (except related to geology), waterproofing of subterranean structures, mold or any other discipline beyond geology. It is our understanding the residence and garage were built circa 1947. Research of the City of Los Angeles public record system obtained an Engineering Geologic Study for remedial slope restoration prepared by Land Phase Inc. (LPI) dated January 20, 2012. An accompanying Limited Geotechnical Engineering Report prepared by Cal West (CW) dated January 27, 2012 was also reviewed in addition to the City approval letter and past Order to Comply. The available documents are referenced and attached for your review. It is recommended the client obtain a complete copy of all geotechnical documents from the current owner for the subject site. Geologic reports for the original site construction were not available during our research of the City of Los Angeles, public record counter. Other geologic documents may be present for the site which were not provided or reviewed which may change the opinions rendered herein.

Site Conditions

The site is located at the western side of Nichols Canyon Road north of Hollywood Blvd., in the Hollywood Hills district of the city of Los Angeles. The exact property lines are unknown but approximated by fences and structures. The subject lot is topographically situated across a prominent westerly ascending slope(extensively modified by older and recent grading) and the improved Nichols Canyon drainage course in the southern Santa Monica Mountains. Nichols Canyon Road fronts the eastern property line with private properties to the north, west and south.

The westerly ascending slope was extensively modified by older grading for the subject residence, garage, driveway access and perimeter improvements. The one-story residence (with converted garage under) appears to be situated over a stepped level pad consisting of cut bedrock on the west and older fill and alluvium to the east. Recent grading is addressed in the referenced reports by LPI and CW.

The original Nichols Canyon watercourse is now directed in a older concrete channel with retaining walls just east of the east property line per the topographic survey presented in the CW and LPI reports. This drainage improvement appears to be the responsibility of the City of Los Angeles. Department of Public Works and is beyond the scope of this evaluation. We recommend you contact the City regarding any question or further details you desire regarding this drainage system.

The attached garage (converted to a living space) is tucked under the northeast corner of the original residence. A carport is present to the east of the converted garage. A certain degree of floor slope was observed in the converted garage and upper bedroom attributed to foundation settlement in a short wedge of old fill and alluvium which appears to be present in this area. The remaining portion of the residence appears to be supported on or near bedrock and lacks significant settlement patterns. A manometer survey would be recommended if specific settlement patterns are desired by the client.

The natural slope ascends to the west at a 1.3: 1 ratio for heights over 170-feet to upper Binkley Drive. Most of this ascending slope is off-site as the property line appears to be roughly 30-feet beyond the existing rear yard retaining wall. Non-conforming, stepped, near vertical cut slopes ranging from 15 to 30+ feet in height are present to the west of the main residence. The upper bench (between the first and second cut) has a significant amount of accumulated talus from the recent corrective grading and decades of surface failures occurring from the upper cut. The LPI and CW reports address the city of Los Angeles "Order to Comply" and recommended corrective grading and we refer you to their reports for specific details. It is beyond the scope of this geologic evaluation to address grading permit status and compliance to the " Order to Comply".

It is noted that the "Order to Comply" was issued for illegal grading and construction on the rear slope. It appears the recommendations of LPI and CW was to remove all wood walls and backfill and to allow the existing staircase and lower retaining wall to remain. Various additional recommendations including providing 3-feet of freeboard to the existing retaining wall, geo-textile fabric covering the exposed bedrock, drainage improvements including swales, V-drains, etc., have not been provided. Excellent exposures of the underlying granite bedrock are also present on the natural slope to the west of the building pad.

Foundation settlement can occur (especially during strong ground shaking or heavy rainfall) for any portion of the structure not supported in bedrock.

Minor settlement was observed to affect the north east side of the residence and converted garage. It appears a remnant fill or alluvium wedge may be present in this area. The fill/alluvium wedge is expected to be of considerable thickness which would require subsurface exploration to

determine. The distress should be cosmetically repaired as needed. Permanent repair would require a deep pile and gradebeam foundation system extending into competent bedrock.

Due to the age of the structures (which pre-dates all modern building code), the foundation depth is anticipated to be shallow. The existing residence and garage appears to be performing adequately with a minimum embedment depth. Current building standards would require the foundations to be embedded at least 2-feet or more into bedrock depending on setback and slope conditions.

Geologic Conditions

Excellent bedrock exposures are present on the west slopes of the site. Based on this observation and regional geologic maps the site is underlain with granite bedrock commonly referred to as the Santa Monica Mountain Basement Complex. The bedrock is primarily massive and lacks continuous planes of geologic weakness. Intersecting joint and fracture patterns result in spalling and rockfall of the existing non-conforming cut slopes. Evidence of this type of failure over the past decades is present by the irregular face of the existing non-conforming cuts. The existing residence has an inadequate setback (less than 15-feet and within a 1:1 projection from the top of the non-conforming cuts) and is affected by this geologic hazard. The west side of the residence garage may be impacted by this type of hazard as there is insufficient setback in this area. The massive nature of the bedrock is considered favorable with respect to the deep-seated stability of the site. CW and LPI provided deep-seated stability analysis which indicates the ascending bedrock slope is grossly stable at depth. However surface failures will continue to be a geologic hazard at the site and may impact the rear of the residence.

The State of California Seismic Hazard Map indicates the eastern portion of the site is located in an area considered subject to liquefaction. One and two-story structures are exempt from the State Seismic Hazard Act for analysis and mitigation of potential liquefaction. The underlying bedrock is not considered subject to liquefaction. The alluvium on the eastern portion of the site may be subject to liquefaction during strong ground shaking

The western portion of the site is mapped as an area with potential for earthquake-induced landslide. CW and LPI provided seismic stability analysis of this slope based on a 2012 design

event which indicates the slope will be stable during strong groundshaking. Non-conforming cut slopes are considered subject to failure during strong groundshaking. The non-conforming cut slopes at the site are considered subject to rockfall and spalling during strong groundshaking.

No known deep-seated landslides are present in the area which would affect the subject site. It should be noted that numerical stability analysis by a soils engineer of the non-conforming cut slopes at the site will likely exhibit a safety factor less than 1.5 as required by the current grading code for new construction. Support with engineered retaining walls or trimming the non-conforming cut to a 1:1 ratio are common forms of mitigation. The non-conforming cut slopes are subject to continued rockfall, spalling and erosion, which is exacerbated during heavy rains or strong ground shaking. These failures may (already) extend to off-site properties especially on the west property line. Mitigation of these failures may require major retaining walls at significant expense.

Surface soils and fill are subject to settlement, erosion and slumping. Effective drainage control, landscaping and groundcover can reduce the potential for surficial instability.

Faulting

The Hollywood Fault Zone is approximately located (by the State Geologist) approximately 250 feet south of the site. The site is located within an Alquist-Priolo Special Studies Zone Act (AP) as the Hollywood Fault is considered an active fault. The AP Zone is typically dimensioned as roughly 500-feet in each direction from the estimated fault trace. The requirements of the AP Act apply to new construction and do no affect existing structures barring earthquake damage. Evaluation of fault rupture potential as required by the AP Act would require extensive subsurface exploration and analysis and can be provided at your request. Groundshaking resulting from a moderate to major earthquake, (Magnitude 6.0+), can be expected during the lifespan of the structure. Property owners and the general public should be aware that any structure or slope in the southern California region could be subject to significant damage as a result of a moderate or major earthquake. We recommend you retain a structural engineer to evaluate the framing and seismic resistance of the deck and residence superstructure and foundation system. The potential exists throughout southern California for strong ground motion

similar to that which struck the Los Angeles region during the January 17, 1994, Northridge earthquake. Several such destructive earthquakes have struck southern California during the span of recorded history. Present building codes and construction practices are intended to minimize structural damage to buildings and loss of life as a result of a moderate or major earthquake. They are not intended to totally prevent damage to structures, graded slopes, and natural hillsides from a moderate to major earthquake. While it may be possible to design structures, and graded slopes to withstand strong ground motion, the construction costs associated with such designs are usually prohibitive, and the design restrictions may be severely limiting. Structural distress to sidewalks, steps, curbs, decks, and other such appurtenances, may be anticipated as these structures are not normally controlled by the building code. Earthquake insurance is often the only economically feasible form of protection for your property against major earthquake damage.

Drainage

Recommendations provided by LPI and CW should be implemented. All slope, roof and pad drainage should be solid pipe outletted to the street or approved disposal area in non-erosive drainage devices. Water should not be directed down any slope in a concentrated manner, allowed to pond on the pad or adjacent to any retaining wall or foundation. Proper site drainage will help mitigate but may not eliminate potential surface water hazards. Any cracked surfaces should be sealed especially where adjacent to slopes to reduce the potential for saturation, settlement or failure of earth materials. All drainage systems must be maintained to prevent water from eroding the descending slopes or directed under the existing structures. The adequacy of below grade waterproofing is beyond the scope of a geologic evaluation.

Preventive Slope Maintenance

To reduce the risk of problems relating to slope instability, a program of continual slope maintenance is necessary. This maintenance program should include but need not be limited to annual cleanout of existing drainage ways, sealing of any cracks, elimination of gophers and earth burrowing rodents, maintaining low water consumptive, fire retardant, deep rooted ground cover and proper irrigation.

Hillside properties are typically subject to potential geotechnical hazards including settlement, slope failures, slumping, spalling of slopes, erosion and concentrated flows. It must be emphasized that responsible maintenance of these slopes, and the property in general, by the owner, using proper methods, can reduce the risk of these hazards significantly.

Remedial Slope Mitigation of Geologic Hazard

The site is considered feasible for remedial slope mitigation of the rockfall and surface failure hazard from the non-conforming cuts on the rear yard slope from an engineering-geologic standpoint. A detailed soils and engineering-geologic report based on subsurface exploration, testing and analysis will be required to comply with current grading code standards and provide recommendations for mitigation of observed non-conforming cut slope conditions and earth design parameters for construction. The main issues to be evaluated and addressed in the detailed soils and engineering-geologic report are as follows. Other issues not included herein may be determined during the exploration and testing phase of the detailed report. We recommend you consult with an architect and grading engineer experienced in Los Angeles hillside construction for compliance with all applicable planning and zoning laws in addition to all hillside building and retaining wall ordinances.

1) Mitigation recommendations of non-conforming cut slopes.
Modifications requests to the grading code may be justifiable to allow 1:1 ratio slope trims to existing non-conforming cuts where space is available. Remaining non-conforming cuts where trimming is not feasible may require support with engineered retaining walls.
2) Mitigate loose soil wedges on the ascending slope.

Limitations

As requested by the client, this evaluation is based only on visual observation and not based on subsurface exploration, testing, analysis of settlement or calculation of stability. The intent of this report is to provide professional opinions based on observed conditions and general

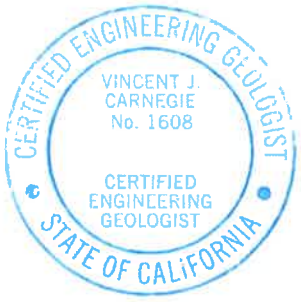
knowledge of the area. Subsurface exploration is recommended to verify the estimated conditions if further risk assessment is desired by the client. A structural engineer is recommended to evaluate the competency of the superstructure as these issues are beyond the scope of a geologic evaluation. We do not evaluate waterproofing of retaining walls. Accuracy or availability of the City of Los Angeles, grading records are not guaranteed from our research. The report reflects conditions at the time of the meeting. No guarantee or warranty with respect to future performance of the property is expressed or implied.

It should be clearly understood that the risk associated with ownership of hillside property **is yours.** This report is prepared for exclusive use of **JENNIFER SILVERS** and her authorized agents and shall not be transferred to a third party for use on adjoining properties without the benefit of review by this office.

The opportunity to provide professional services is greatly appreciated. Please feel free to call if you have any questions.

GEOSYSTEMS, INC.

Vincent J. Carnegie, President
Certified Engineering Geologist
CEG 1608, Exp. 10/31/17



CC: (1) to Client

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CAWEST GEOTECHNICAL GROUP

CONSULTING ENGINEERS

January 27, 2012

Project No. 5325

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

SUBJECT: **LIMITED GEOTECHNICAL ENGINEERING REPORT, PROPOSED REMEDIAL SLOPE RESTORATION AND MITIGATION OF UN-PERMITTED RETAINING WALLS, 1805 N. NICHOLS CANYON, CITY OF LOS ANGELES, CALIFORNIA**

REFERENCES: REPORT OF ENGINEERING GEOLOGIC STUDY, PROPOSED REMEDIAL SLOPE RESTORATION MITIGATION OF UN-PERMITTED RETAINING WALLS AND ASSOCIATED GRADING, 1805 N. NICHOLS CANYON AND A PORTION OF THE ADJACENT PROPERTY TO THE WEST, HOLLWOOD AREA, CITY OF LOS ANGELES, CALIFORNIA, PREPARED BY LAND PHASES, INC., PROJECT NO. LP1045, DATED JANUARY 20, 2012.

CITY OF LOS ANGELES DEPARTMENT OF BUILDING AND SAFETY, ORDER TO COMPLY AND NOTICE OF FEE, 1805 N. NICHOLS CANYON ROAD, CITY OF LOS ANGELES, CALIFORNIA, CASE #: 430721, ORDER # A-2870940, DATED OCTOBER 17, 2011(Included in Appenix E).

INTRODUCTION

This Limited Geotechnical Engineering Report presents the results of our geotechnical engineering investigation for the proposed remedial slope restoration at the subject site located at 1805 N. Nichols Canyon, City of Los Angeles, California. The Location Map in Appendix A shows the approximate location of the subject site and surrounding vicinity.

This Limited Geotechnical Engineering Report has been coordinated with and prepared subsequent to the referenced Report of Engineering Geologic Study prepared by Land Phases, Inc., dated January 20, 2012. The following report describes our scope of work and presents our professional opinions regarding the proposed remedial slope restoration, in the form of findings, conclusions, and geotechnical recommendations.

SCOPE OF WORK

Our geotechnical engineering investigation has been directed at the identification and evaluation of the geotechnical conditions at the subject site that may impact the proposed remedial slope restoration. Our investigation was conducted during January through February 2012, and included, but may not have been limited to, the following tasks:

889 Pierce Court, Suite 101, Thousand Oaks, California 91360 • tel:818-991-7148 • fax:818-991-5942
www.lcegroupinc.com workfiles@lcegroupinc.com

- Consultation with the client and project engineering geologist, Land Phases, Inc., during the site observations and subsequent report preparation.
- Reviewed published geotechnical information, relevant to the site and surrounding areas, available in our files.
- Review of pertinent records on file at the City of Los Angeles Department of Building and Safety.
- Performed a site reconnaissance to assess the surficial conditions at the subject site.
- Field sampling of bedrock exposures on the face of the ascending slope. The approximate location of the field sampling is indicated on the Geotechnical Map included in Appendix C.
- Laboratory testing and analysis of selected samples to measure their pertinent index and engineering properties. Laboratory testing procedures and results of the laboratory tests are included in Appendix B.
- Review and geotechnical engineering analysis of the available geotechnical data and our laboratory test results described above.
- Preparation of a Geotechnical Map and Cross-sections, utilizing as a basis, the Geologic Map and Cross-sections prepared by Land Phases, Inc. The Geotechnical Map and Cross-sections are included in Appendix C. We make no representations regarding the accuracy of the supplied map and sections.
- Preparation of slope stability analyses, utilizing the Geotechnical Map and Cross-sections and laboratory test results described above. The results of the slope stability analyses are included in Appendix D.
- Preparation of this formal report presenting our professional opinions regarding the proposed remedial slope restoration, in the form of findings, conclusions and geotechnical recommendations.

PROPOSED IMPROVEMENTS

Information concerning the proposed improvements was provided by the client and general contractor, Vracko Construction, Inc. It is our understanding; the proposed improvements consist of the remedial slope restoration to mitigate the un-permitted construction activities within the subject site and a portion of the adjacent property to the west. The un-permitted construction activities are the subject of the referenced City of Los Angeles "Order to Comply and Notice of Fee", dated October 17, 2011, included in Appendix E. Specifically, two (2) retaining walls (constructed off-site and partially backfilled to create a relatively level terrace area), a concrete staircase (to access the terrace area), and minor wood retaining walls (near the toe of the descending slope) should be removed to restore the previously existing slope. The Geotechnical Map and Cross-sections, included in Appendix C, delineate the topographic conditions of the subject site and the approximate configuration of the existing conditions and the proposed improvements. Comprehensive plans have not been prepared and await in part, the conclusions and recommendations of this and the referenced report prepared by Land Phase Inc.

The area of the proposed improvements is situated near the toe of an east facing slope. The subsurface conditions at the area of the proposed improvements are interpreted to consist of approximately one (1) foot of colluvium deposits over intrusive igneous bedrock.

Grading associated with the proposed improvements will consist of a minor conventional cut and fill grading operations, and may include temporary excavations to restore the previously existing slope. Specific grading recommendations are provided in later sections of this report.

SITE DESCRIPTION

The subject site is situated on the western margin of the southern terminus of Nichols Canyon. The eastern portion of the subject site may be described as a relatively level building pad near the bottom of Nichols Canyon. However, the western portion of the subject site may be described as a steep, east-facing slope.

Past grading on the eastern 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 mentioned, unpermitted grading activities have recently been performed within the ascending slope to the west. Based on observations performed during our site reconnaissance, 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 wood *post-and-board* planter walls which are all present within the western portion of the subject site.

Total physical relief within the subject site is on the order of 60 feet, with slope gradients that vary from nearly horizontal to as steep as 0.75:1 (H:V). The existing topographic conditions of the subject site are presented on the attached Geotechnical Map, included in Appendix C, which utilizes a current topographic survey as a base.

Slope and pad drainage within the site is by sheet flow runoff 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. Furthermore, the existing residence lacks the currently code required level rear yard setback area of 15 feet, as measured between the westernmost wall of the existing residence and retaining wall At the toe of the slope. 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.

Vegetation on the subject site 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.

Existing Structures

Existing Structures (permitted) - A single family residence with an attached wood deck is present on the central portion of the subject site. 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. Vehicular access to the subject site from Nichols Canyon Road is via a concrete bridge which spans a concrete lined drainage channel that runs along the eastern property limits of the subject site. The locations of the existing structures are illustrated on the Geotechnical Map included in Appendix C. However, it should be noted that a detailed evaluation of the geotechnical/structural performance of the existing structures is beyond the scope of this report.

Recently Constructed Unpermitted Structures and Grading - Based on the findings of our recent site reconnaissance, unpermitted structures have recently been constructed on the western limits of the subject site. These unpermitted 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 E). Specifically, two CMU retaining walls, which range in height from 4 to 5 feet, have been constructed on the adjacent property to the west. Specifically, the uppermost wall has not been provided with a backdrain, adequate waterproofing, certified backfill, or a concrete V-drain. Rather, colluvium has been allowed to slough into the void 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 by means of a conventional footing; while this is likely, subsurface observation and confirmation of the underlying foundation system were not performed by this office, as part of the preparation of this report. On the other hand, the lowermost retaining wall has been backfilled to conform a relatively level terrace area; however, the backfill was not placed under geotechnical control or supervision and is thus considered as "uncertified fill". 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; however, subsurface observation and confirmation of the underlying foundation system were not performed by this office, as part of the preparation of this report. The locations of these retaining walls are illustrated on the Geotechnical Map included in Appendix C.

Closer to the toe of the east facing slope, a series of four (4) wood *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 (as well as other jurisdictions) as wooden walls are subject to wood rot, insect infestation, and weathering which leads to accelerated decay and failure. These walls have been provided with a minor amount of uncertified backfill in order to conform a moderately level planter area on the upslope side of the walls. The locations of the wooden planters are illustrated on the Geotechnical Map included in Appendix C.

Lastly, a concrete staircase and lateral masonry walls have been constructed on the northern portion of the subject site. For the most part, the masonry walls constructed along the margin of the staircase do not appear to support excavated areas 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; while this is likely, subsurface observation and confirmation of the underlying foundation system were not performed by this office, as part of the preparation of this report. The locations of the staircase and adjacent walls are illustrated on the Geotechnical Map included in Appendix C.

PREVIOUS GEOTECHNICAL STUDIES

Previous geotechnical studies of the subject site were not found in the City of Malibu Department of building and Safety, during our records research.

SUBSURFACE CONDITIONS

Subsurface conditions beneath the area of the proposed improvements have been interpreted and characterized by the project engineering geologist, Land Phases Inc., based on observations performed during a recent joint site reconnaissance. Earth materials observed during our site reconnaissance include uncertified artificial fill and colluvium over intrusive igneous bedrock.

The descriptions provided below pertain only to conditions revealed at the time of our site reconnaissance, i.e. January, 2012. Certain subsurface conditions, such as groundwater levels and the consistency of surficial soils, may vary with the seasons.

Uncertified Compacted Fill (*afu*)

A minor to moderate amount of artificial fill has been mapped by the project engineering geologist, Land Phases Inc. within the area of the proposed improvements (i.e. western limits of the subject site and the adjacent property to the west).

The artificial fill underlying the area of the proposed improvements consists of an admixture of colluvium and bedrock which may be 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. As previously mentioned, the artificial fill underlying the project area of the site was not placed under geotechnical control or supervision and is thus considered uncertified.

Colluvium (*Ocol*)

Natural colluvial deposits overlie the bedrock on portions of the east facing slope of the subject site and the adjacent offsite area. The colluvium may be 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.

Bedrock (*qd*)

Bedrock underlying the subject site consists of quartz diorite. The quartz diorite bedrock is exposed at surface grade on portions of the east-facing slope of the subject site. The quartz diorite may be described as 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.

Groundwater

The phreatic groundwater or evidence of historical groundwater were not encountered during our site reconnaissance. It is acknowledged that fluctuations in the level of groundwater may occur due to variations in rainfall, temperature, soil transmissivity and distribution, and other indeterminate factors; however, it is not anticipated that groundwater will be encountered during the construction of the proposed improvements.

LABORATORY TESTING AND ANALYSIS

Laboratory tests were performed on bulk and relatively undisturbed ring samples considered representative of the earth materials encountered during our site reconnaissance. These tests were performed to measure the pertinent index and engineering properties of the underlying earth materials. After a visual classification in the field, samples were returned to the laboratory where a testing program was established.

Insitu moisture content and dry weight for samples were developed in accordance with ASTM D-2937. Shear strength characteristics were assessed from results of direct shear tests on relative, undisturbed samples. Classification tests consist of maximum density-optimum moisture content, per ASTM D-1557, grain size analysis for ASTM D-422, and expansion index per ASTM Standard 4829. A concise explanation of the laboratory testing procedures along with the laboratory test results, are included in Appendix B.

SEISMIC CONSIDERATIONS

The subject site is not located within any California Special Studies Zone. The site, however, as all the Southern California area, is located in a seismically active region and will be subject to moderate to strong ground shaking should any of the many active Southern California faults produce an earthquake. Potential hazards from earthquakes in the vicinity of the site, aside from strong ground shaking, may include fault rupture, liquefaction, and landslides.

Fault Rupture

An earthquake is caused when strain energy in rocks is suddenly released by movement along a plane. Occasionally, fault movement propagates upward through the subsurface materials and causes displacement of the ground surface. Surface rupture usually occurs along the traces of known active or potentially active faults, although many historic events have occurred on faults not previously known to be active. For additional general information regarding faults, please refer the referenced report by the project engineering geologist Land Phases Inc., dated January 20, 2012.

Liquefaction Potential

According to the State of California Division of Mines and Geology (CDMG), the subject site is not in an area subject to liquefaction. Many factors influence a soils potential for liquefaction during an earthquake. These factors include magnitude and proximity of the earthquake, duration of shaking, soil types, grain size distribution, clay fraction content, density, angularity, effective overburden, location of groundwater table, and soils transmissivity among others.

Accordingly, under the influence of severe ground shaking, the materials underlying the subject site in the areas of the proposed improvements, based upon their known consistency and depth to groundwater, are not considered prone to liquefaction.

Slope Stability

Static and pseudo-static slope stability analyses have been completed for the proposed slopes in the vicinity of the area of the proposed improvements. The slope stability calculations are based upon shear tests of samples believed to represent the weakest material encountered during our site reconnaissance. The cross sections analyzed is considered the most critical and relevant amongst the available slopes.

The stability analyses indicate factors of safety in excess of 1.5 and 1.1 for the static and pseudo-static conditions, respectively, as required by the City of Los Angeles, Department of Building and safety. The slope stability input and output summaries are included in Appendix D. The critical failures and the corresponding factors of safety are depicted in the Geotechnical Map and Cross-sections included in Appendix C.

Slope Stability Calculations Static and pseudo-static slope stability analyses were performed using the computer program SLIDE 5.0. SLIDE was developed by Rocscience Inc. Analyses are performed using the simplified Bishop method for rotational failure surfaces.

For a given slope geometry, soil and bedrock mechanical properties, groundwater conditions, and miscellaneous loads including pseudo-static loads and horizontal stabilizing loads, SLIDE is able to generate and analyze potential failure surfaces and calculate the corresponding factors of safety utilizing different search criteria, thus enabling the user to focus on specific features or locations of the analyzed slope.

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

CalWest Geotechnical has performed a geotechnical engineering investigation for the proposed remedial slope restoration at the subject site located at 1805 N. Nichols Canyon, City of Los Angeles, California. Based upon our geotechnical engineering investigation, as described in the preceding sections of this report, corresponding geotechnical analyses, and experience with similar projects, the proposed improvements are considered feasible from a geotechnical engineering standpoint, provided our recommendations are made part of the building plans and implemented during construction.

As previously stated, the improvements consist of the remedial slope restoration to mitigate the un-permitted construction activities within the subject site and a portion of the adjacent property to the west. The un-permitted construction activities are the subject of the referenced City of Los Angeles "Order to Comply and Notice of Fee", dated October 17, 2011, included in Appendix E. Specifically, two (2) retaining walls (constructed off-site and partially backfilled to create a relatively level terrace area), a concrete staircase (to access the terrace area), and minor wood retaining walls (near the toe of the descending slope) should be removed to restore the previously existing slope. The Geotechnical Map and Cross-sections, included in Appendix C, delineate the topographic conditions of the subject site and the approximate configuration of the existing conditions and the proposed improvements

The area of the proposed improvements is situated near the toe of an east facing slope. The subsurface conditions at the area of the proposed improvements are interpreted to consist of approximately one (1) foot of colluvium deposits over intrusive igneous bedrock.

Grading associated with the proposed improvements will consist of a minor conventional cut and fill grading operations, and may include temporary excavations to restore the previously existing slope. Specific grading recommendations are provided in later sections of this report.

The recommendations which follow are presented as guidelines to be utilized during the design and construction of the proposed project, and have been prepared with the understanding that CalWest Geotechnical will be given the opportunity to review the building plans prior to construction, and will observe, test and advise during site grading to allow this office to provide certification of the finished project. Prior to construction, it is recommended that a meeting be held with the project engineering consultants, owner and general contractor to review the plans and specifications, and to discuss scheduling of the project.

GRADING

All grading operations should be performed in compliance with all applicable grading codes and the minimum specifications outlined below. Observation and testing will be necessary during these phases of the project to allow CalWest Geotechnical to provide certification of the finished project.

Site Preparation and Excavation

A. The existing retaining walls should be cut down and wasted from the site.

B. The existing artificial fill and soil in areas to receive certified compacted fill should be excavated to expose competent igneous bedrock.

C. The approximate horizontal and vertical extent of these excavations should be verified by the project geotechnical consultant in the field.

D. The exposed surface should be scarified to a minimum depth of six (6) inches, moisture conditioned to produce a soil-water content of about two (2) percent above optimum moisture content and compacted to a minimum **95 percent relative compaction**, based on ASTM Test D1557.

Fill Placement

A. At the completion of scarification, certified compacted fill may be placed to design grades using onsite inorganic soils or approved import. All fill placed on sloping ground (greater than 5:1 H:V) should be keyed and benched as described below under "Benching, and Subdrains".

B. Soil proposed for use as structural fill should be inorganic, free from deleterious materials, and contain no more than 15 percent by weight of rocks larger than three (3) inches (largest dimension).

C. We do not anticipate significant quantities of oversized materials; however, if excavations within well-cemented bedrock units produce irreducible rock that exceeds a maximum dimension of 12 inches, it should not be placed in certified compacted fill without specific geotechnical approval of the material, the disposal location and the disposal method. All disposal areas for oversized materials should be mapped by the project geotechnical consultant and indicated on the final as-built geotechnical map.

D. We expect that materials excavated onsite will be suitable for use as certified compacted fill provided they do not contain appreciable quantities of organic debris.

E. Where in-place moisture content exceeds optimum values, the materials may need to be spread and dried, or mixed with dryer material. Final determination will be provided in the field by the project geotechnical consultants at the time the excavations take place.

F. Excavated material containing excessive organic debris will not be suitable for use in the certified compacted fill. Materials deemed unsuitable should be wasted offsite or as designated by the project architect or geotechnical consultant.

G. The approved material should be placed in layers, each not exceeding six (6) inches in thickness (before compaction), water conditions to about two percent above optimum moisture content and compacted to a minimum 90 percent relative compaction based on ASTM Test D1557.

H. Fill compaction tests should be performed during placement of the future fills to verify acceptable compaction and moisture content. At a minimum, one test should be performed within each 12 to 24 inches (vertical depth) or 500 cubic yards of fill (whichever is less). More frequent testing may be required by the geotechnical consultant.

I. Graded slopes should be constructed to match the previously existing slope Fill slopes should be constructed by overfilling and cutting back to the compacted core.

J. If construction takes place during the winter months or unseasonable rainy periods, additional winterizing and erosion-control recommendations may be necessary.

Benching, and Subdrains

A. All fill should be placed above horizontal benches excavated into site bedrock. Benches should be a minimum width of four (4) feet. A minimum 12" of site bedrock material must be visible above the fill level at all times.

B. Subdrains should be placed at the lowest exposed bottom. Subdrains should consist of perforated SDR-35 PVC pipe placed with the perforations downward in a blanket of ¾-inch durable aggregate such that the subdrain pipe is surrounded by a minimum 12 inches of gravel on all sides. The gravel blanket should be wrapped with a geosynthetic filter such as Mirafi 140 or suitable equivalent. Fabric joints should be overlapped a minimum of three (3) feet. Minimum specifications for pipe diameter, aggregate volume and fabric width are provided as follows:

Run Length (ft)	Pipe Diameter (in)	Aggregate Volume (ft)	Fabric Width (ft)
0 – 200	4"	4.5	10.5'
200 – 400	6"	5.0	11.0'
400 – 600	8"	5.6	11.5'

The project geotechnical consultants should observe and approve all subdrain installations prior to placing compacted fill.

TEMPORARY EXCAVATIONS AND SHORING

For preliminary planning purposes, all excavations that exceed seven (7) feet of vertical height into igneous bedrock should have the upper portion trimmed to a 1:1 (H:V) gradient. Otherwise, these excavations should be supported by slot-cutting or by a temporary soldier pile shoring system.

The geotechnical consultants should be present during grading to observe the temporary excavation. All excavations should be stabilized within 30 days of initial excavation. Water should not be allowed to pond on top of the excavations, nor to flow towards it. No vehicular surcharge should be allowed within five (5) feet of the top of the cut.

EXPANSIVE SOILS

Expansion tests performed in accordance with ASTM Standard 4829 "Expansion Index Test" indicate the future compacted fill has a very low expansion index.

Expansive soils are a problem in arid climates, as the variation in moisture content will cause a volume change in the soil. Expansive soil tends to be active near the ground surface. The actual depth varies with the specific soil type, as well as environmental differences. During inclement weather and/or excessive landscaping, moisture will infiltrate the soil and cause the soil to expand. When drying occurs, the loss of moisture content will cause soil to shrink, and extreme dryness may cause shrinkage (desiccation) cracks to develop.

Expansion and contraction of soils can cause pavement, concrete slabs-on-grade, and other structures to crack. To reduce the effect of expansive soil on surface structures, foundation systems are typically deepened and/or additional reinforcement is utilized. Slabs-on-grade and foundations are reinforced to increase their resistance to differential movement when planning for site improvements, the landscape theme should take into consideration maintaining uniform moisture conditions around isolated structures and concrete slabs-on-grade. Optimally, the soil should be kept on the moist side, minimizing variation in moisture contents.

DRAINAGE AND MOISTURE PROTECTION

The site should be fine graded to direct drainage away from any structures. Drainage should not be allowed to pond anywhere, and should be directed toward suitable collection discharge facilities.

To promote the rapid drainage of surface water from pavements and to minimize the risk of water ponding on pavements, we recommend that pavements be designed with surface gradients of at least one percent along principal directions of drainage. Water seepage or the spread of extensive root systems into the soil subgrades of foundations, slabs or pavements could cause differential movements and consequent distress in these structural elements. This potential risk should be given consideration in the landscape design.

Walls located below grade have a history of moisture intrusion and leakage. Conventional water proofing materials, such as asphalt emulsion have often proved ineffective. Certain precautions can be taken to reduce the possibility of future water proofing problems. Super plasticized and water retardant concrete may be utilized to make pouring easier and reduce cracking and shrinkage. Waterproofing paints, such as "Thoroseal" may be used, as they have been proven more effective than conventional asphalt emulsion. It is recommended that the project architect provide waterproofing specifications for all below grade walls and structures.

ADDITIONAL SERVICES

It is recommended that this office be provided an opportunity for a general review of the final design plans and supporting documents for overall compliance with recommendations presented in this report. Additionally, this office should be retained to provide services during grading and overall construction phases of the project. Observation of excavations should be performed prior to the placement of any certified compacted fill.

PLAN REVIEW

CalWest Geotechnical should review all final design plans and supporting documents. This will allow us to perform a general review for compliance with the recommendations presented in this report.

SITE OBSERVATIONS

Prior to the start of construction, we recommend that a meeting be held with the contractor to discuss the project and that a representative of CalWest Geotechnical be present at that meeting. We further recommend that CalWest Geotechnical perform the following tasks prior to, and during, the construction of the project:

1. Review all final design plans and supporting documents;
2. Observe the construction of all temporary excavations;
3. Observe and advise during the installation of subdrainage systems;
4. Observe, test and advise during all grading and placement of certified compacted fill.

ACKNOWLEDGEMENTS

California, historically, has experienced major destruction due to storms, flooding, firestorms, and earthquakes. The design of drainage control devices is based on rainfall records and the requirements of the authoritative building department agencies. Even so, the capacity of drainage devices often is exceeded, which results in considerable damage. Slopes associated with hillside developments, which have performed satisfactorily over a long period of time, in a majority of cases, could fail as a result, even though such slopes have been designed to the minimum standards set forth by the Uniform Building Code or other authoritative codes.

As for the design of earthquake forces, the records on which engineering design is based, have been accumulated over a relatively short time frame. Every earthquake provides new information and data as to the cause and effect of large earthquakes. As an example, the January 17, 1994 Northridge earthquake recorded ground accelerations that exceeded all previous earthquake records. In addition, the engineering industry has learned that there are many blind-thrust faults present in Southern California. The presence of these faults were known by petroleum geologists, but without much significance attached to the information by seismologists.

It should be understood that residential and commercial structures are constructed to the minimum standards as set forth by the California Building Code and other authoritative codes. Higher standards are utilized for hospitals, schools, and other critical structures, that must remain serviceable in the event of a disaster. Generally, Building Code requirements provide minimum standards to prevent catastrophic failure. Accordingly, it is believed that site structures are not likely to collapse, although considerable damage may occur.

PROPERTY OWNER'S RESPONSIBILITY

The property owner should care for drainage around the site structures and all graded slopes. To maintain the continued effectiveness of onsite drainage devices, there are important procedures that must be undertaken by the property owner on a regular basis. These procedures are specifically for drainage and debris protection, and therefore, the procedures should be performed prior to each rainy season, with sufficient time to allow for thorough maintenance.

In addition to maintenance of drainage devices, an inspection should be made for rodent activity. Small, burrowing rodents, such as ground squirrels and gophers, create avenues for infiltration of surface water, which could create surficial slope failures. Evidence of rodent infestation should result in the employment of a licensed exterminator. It should be emphasized that these procedures may require periodic performance if reinfestation occurs.

LIMITATIONS AND UNIFORMITY OF CONDITIONS

This Limited Geotechnical Engineering Report is prepared for use by Mr. Robert Dirksen and his authorized agents and should not be considered transferable. Prior to use by others, the subject site and this report should be reviewed by CalWest Geotechnical to determine if any additional work is required to update this report.

The findings presented in this report are valid as of this date and may be invalidated wholly or partially by changes outside our control. Therefore, this report should be subject to review and should not be relied upon after a period of one year or if any significant changes are made.

It is the intent of this report to aid in the design and construction 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 construction projects. The professional opinions and geotechnical advice contained in this report are not intended to imply total performance of the project or guarantee that unusual conditions will not be discovered during or after construction.

The conclusions and recommendations contained within this report are based on field observations of the site conditions. Recommendations are based on the assumption that the subsurface conditions do not deviate appreciably from those indicated by the individual test pits placed on the subject site. If

conditions encountered during construction appear to differ from those described in this report, this office should be notified so we may determine if any modifications are necessary. In this way, any required supplemental recommendations can be made with a minimum delay to the project.

The recommendations are based on preliminary information provided to us at the start of the investigation. Any changes of this information may require additional work. This report has been prepared in accordance with generally accepted engineering practices and makes no warranties, either expressed or implied, as to the professional advice provided under the terms of the agreement and included in this report.

Respectfully submitted,

Leonard Ligton
President
RCE 31902

Eli Katibah
Staff Engineer

Enc: Appendix A - Site Location Map
Appendix B - Soils Laboratory Test Procedures and Results
Appendix C - Geotechnical Map and Cross-sections
Appendix D - Slope Stability Analyses
Appendix E - City of Los Angeles "Order to Comply and Notice of Fee", dated October 17, 2011

cc: Land Phases, Inc.

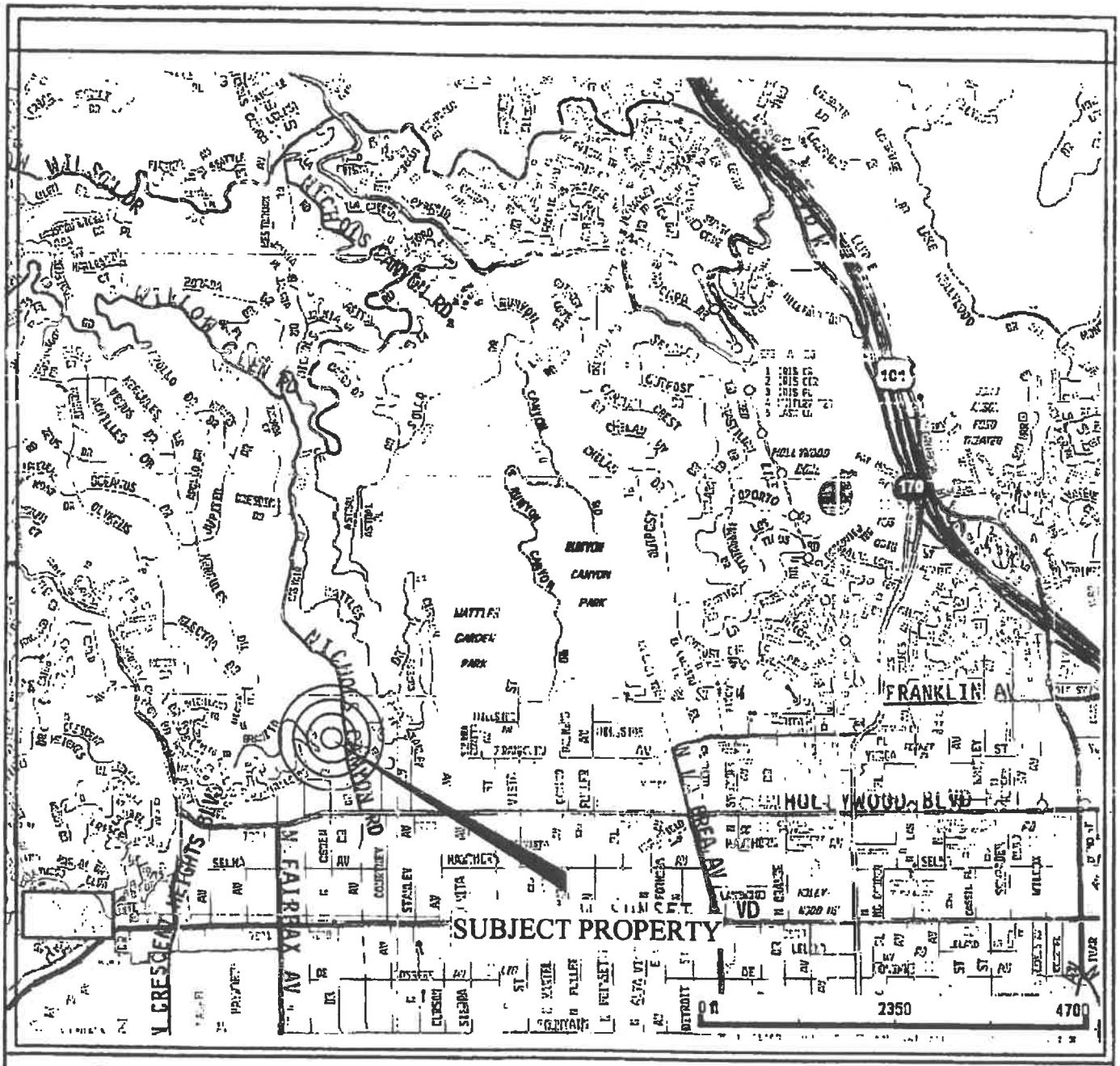
CALWEST GEOTECHNICAL
CONSULTING ENGINEERS
A DIVISION OF LC ENGINEERING, INC.

650 PIERCE COURT, SUITE 101
THOUSAND OAKS, CA 91360
(818)991-7146
(805)497-1244

PROJECT: DIRKSEN
ADDRESS: 1805 N. Nichols Canyon Rd. L.A
DRAWN: LT REF.: 593B4
DATE: January, 2012 JOB #: 5325

VICINITY MAP

SHEET TITLE



N
NORTH

REFERENCE: THOMAS BROTHERS MAP GUIDE, PAGE: 593

EXPLORATION AND LABORATORY TESTING PROCEDURES

Exploration

Field exploration is performed utilizing a variety of equipment, such as; a truck-mounted rotary drill rig, a truck-mounted bucket auger drill rig, a track-mounted backhoe, a rubber-tire backhoe and hand labor. The earth materials encountered are continuously logged by our field engineer and/or geologist and classified by visual examination in accordance with the Unified Soil Classification System.

The locations of test pits are determined by field measurements utilizing the plans furnished by the client. The location of the test pits should be considered accurate only to the degree implied by the method used.

Undisturbed samples of soils encountered are obtained at frequent intervals. Samples are obtained from hand samplers. The soil is retained in brass rings of 2.50 inches inside diameter and 1.00 inches in height. The central portion of the sample is retained in close-fitting, waterproof containers.

Classification

The field classification is verified in the laboratory, also in accordance with the Unified Soil Classification System. Laboratory classification may include visual examination, Atterberg Limit Tests and grain size distribution. The final classification is shown on the enclosed Log of Test Pits and Laboratory Plates.

Moisture-Density

The field moisture content and dry unit weight are determined for each of the undisturbed soil samples. The information is useful in providing a gross picture of the soil consistency between test pits and any local variations. The dry unit weight is determined in pounds per cubic foot and shown on the enclosed Laboratory Plates. The field density and moisture content are determined as a percentage of the dry unit weight and are shown on the Log of Test Pits.

Shear Tests

Shear tests are performed in the Soil Test Direct Shear Machine per ASTM standard D3080, which is of the strain control type. Each sample is sheared under axial loads varying from 900 to 4000 lbs/sq. ft. in order to determine the Coulomb shear strength parameters, cohesion and angle of internal friction. Samples are generally tested in an artificially saturated condition. Depending upon the sample location and future site conditions, samples may be tested at field moisture content. The results are attached as graphic summaries on the enclosed Laboratory Plates.

Expansion Tests

In order to test the expansiveness of soil, a soil sample is compacted into a mold at near 50 percent saturation. A vertical confining pressure of 1-lbf/in is applied to the specimen and the sample is inundated with water. The deformation of the sample is measured over a 24-hour period or the rate of deformation becomes less than .0002 in./hr. whichever comes first. Results are shown on the enclosed Laboratory Plates.

COMPACTION / EXPANSION DATA

PROJECT: Dirksen

JOB NO.: G5325 **DATE:** Jan., 2013

TEST PIT NUMBER	SAMPLE DEPTH	SOIL TYPE	MAXIMUM DENSITY (PCF)	OPTIMUM MOISTURE (%)	EXPANSION INDEX
N/A	Bulk	SOIL	122.0	8.0	0

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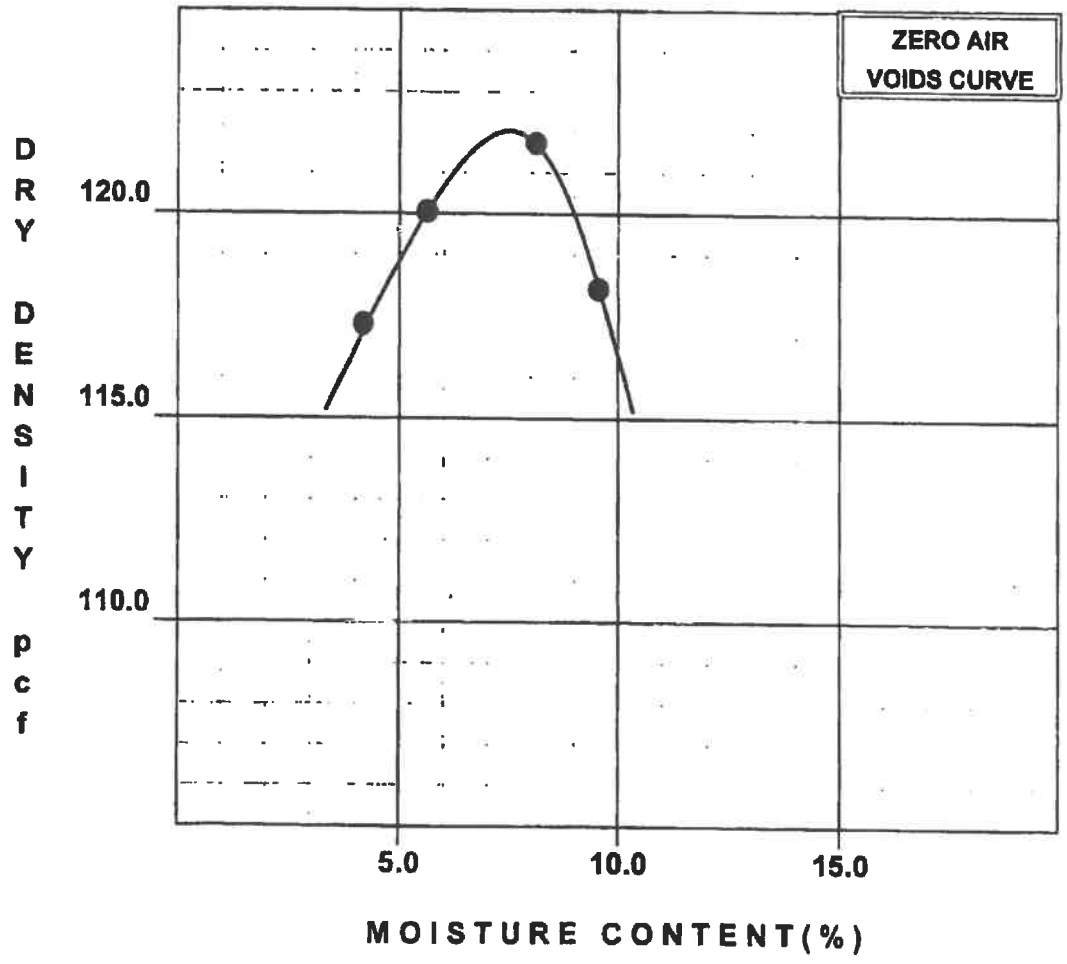
(805) 497-1244

MAXIMUM DENSITY TEST

PROJECT NAME: Dirksen **NUMBER:** G5325

SAMPLE (NO. & DEPTH)	TEST DESIGNATION	MAXIMUM DRY DENSITY	OPTIMUM MOISTURE CONTENT
TP-2 (0-4')	ASTM D1557	122.0 (PCF)	8.0 %



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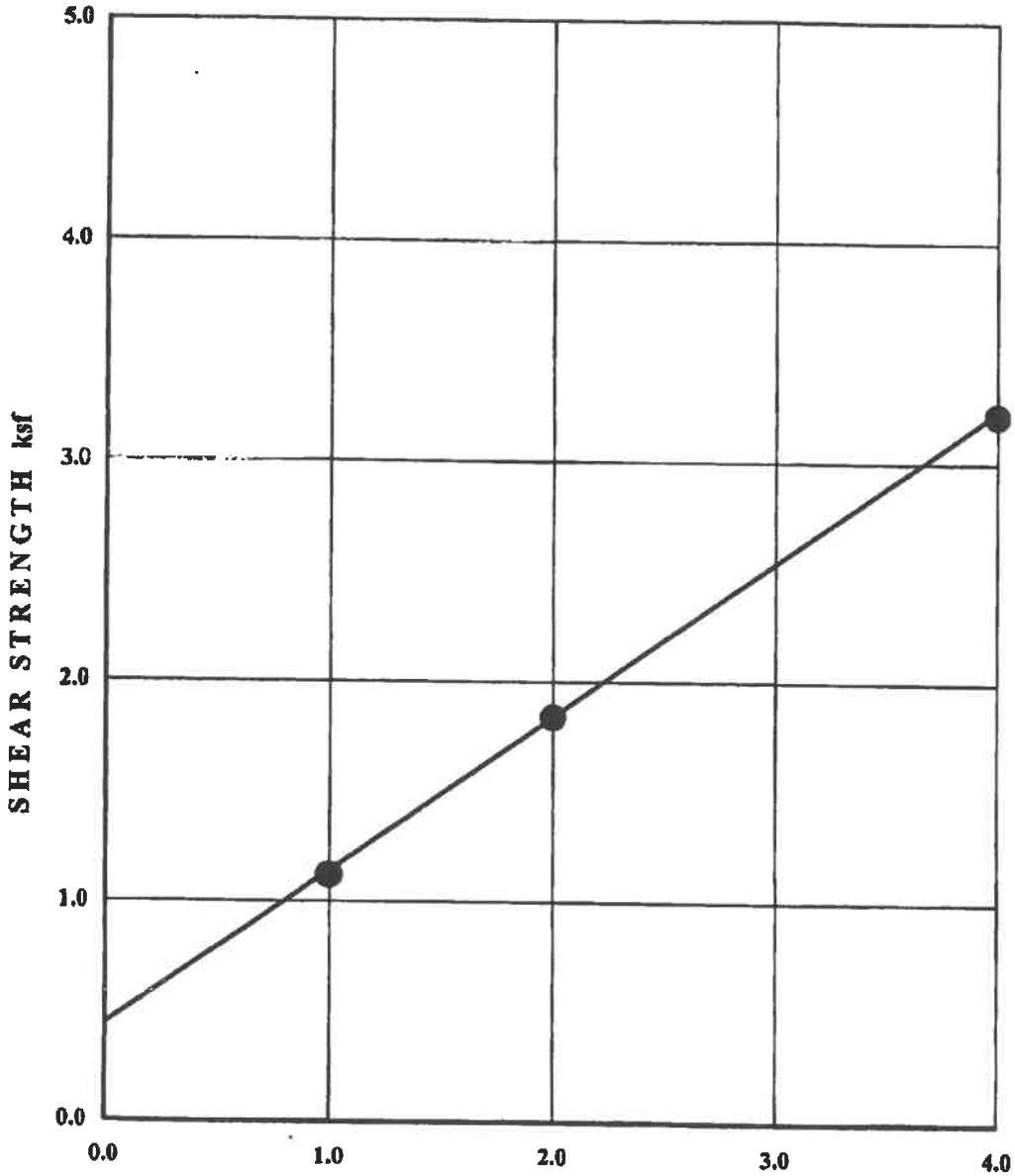
10110102012552242

THOUSAND OAKS
(818) 991-7148
(805) 497-1244

SHEAR TEST DIAGRAM

PROJECT: Dirksen **NUMBER:** G5325

SAMPLE: Remolded Soil to (92%) **DATE:** Jan., 2012



STRAIN RATE -0.005 in/min
SAMPLE SATURATION - 24 hrs
DRY DENSITY & WATER CONTENT -

Initial moisture content = 8.0 %
Final moisture content = 17.7 %
112 pcf @ 18 %

Ultimate Shear Resistance
COHESION = 440 psf
PHI = 35 °

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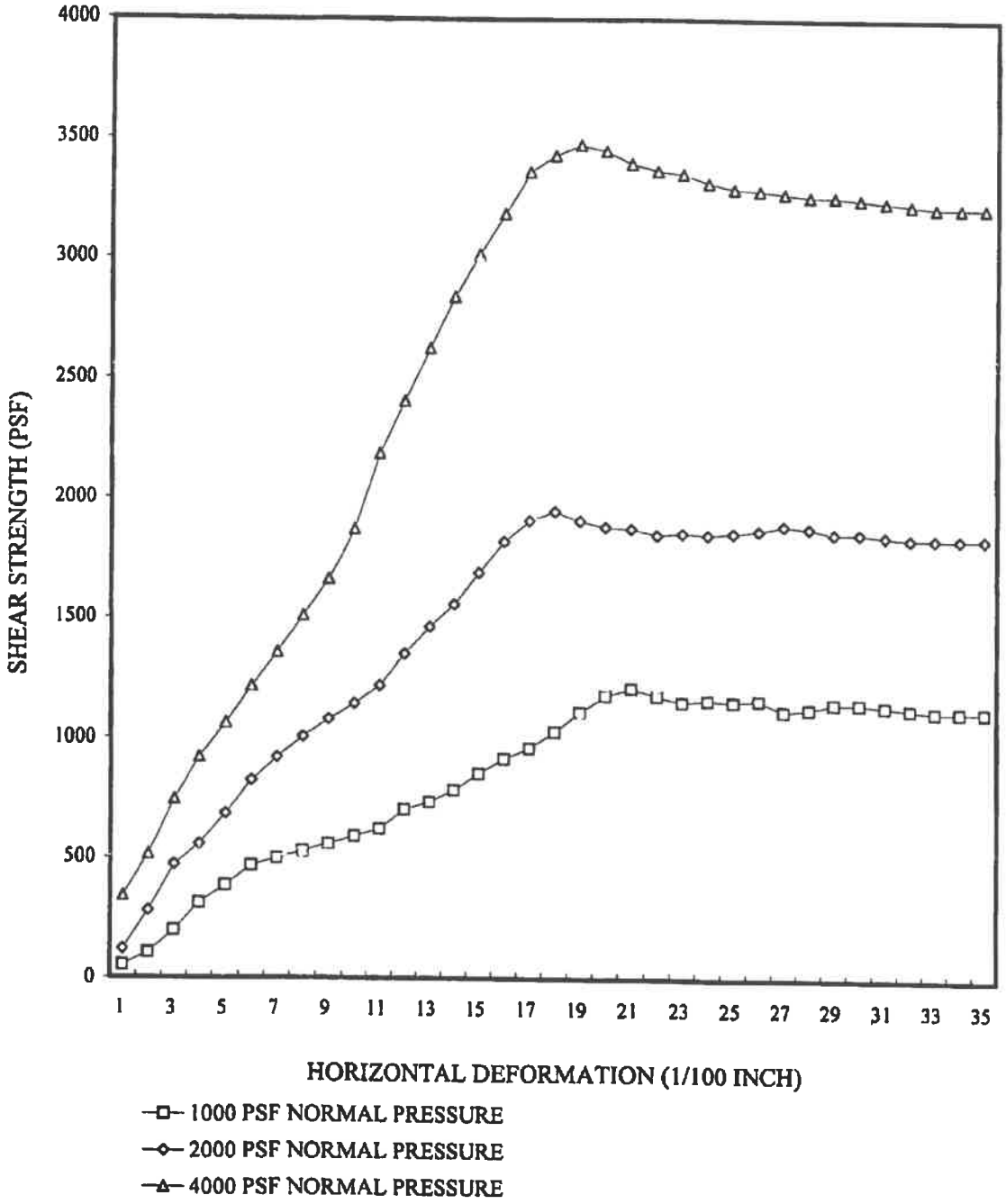
DIRECT SHEAR TEST

SAMPLE: Remolded Soil to (92%) — first run



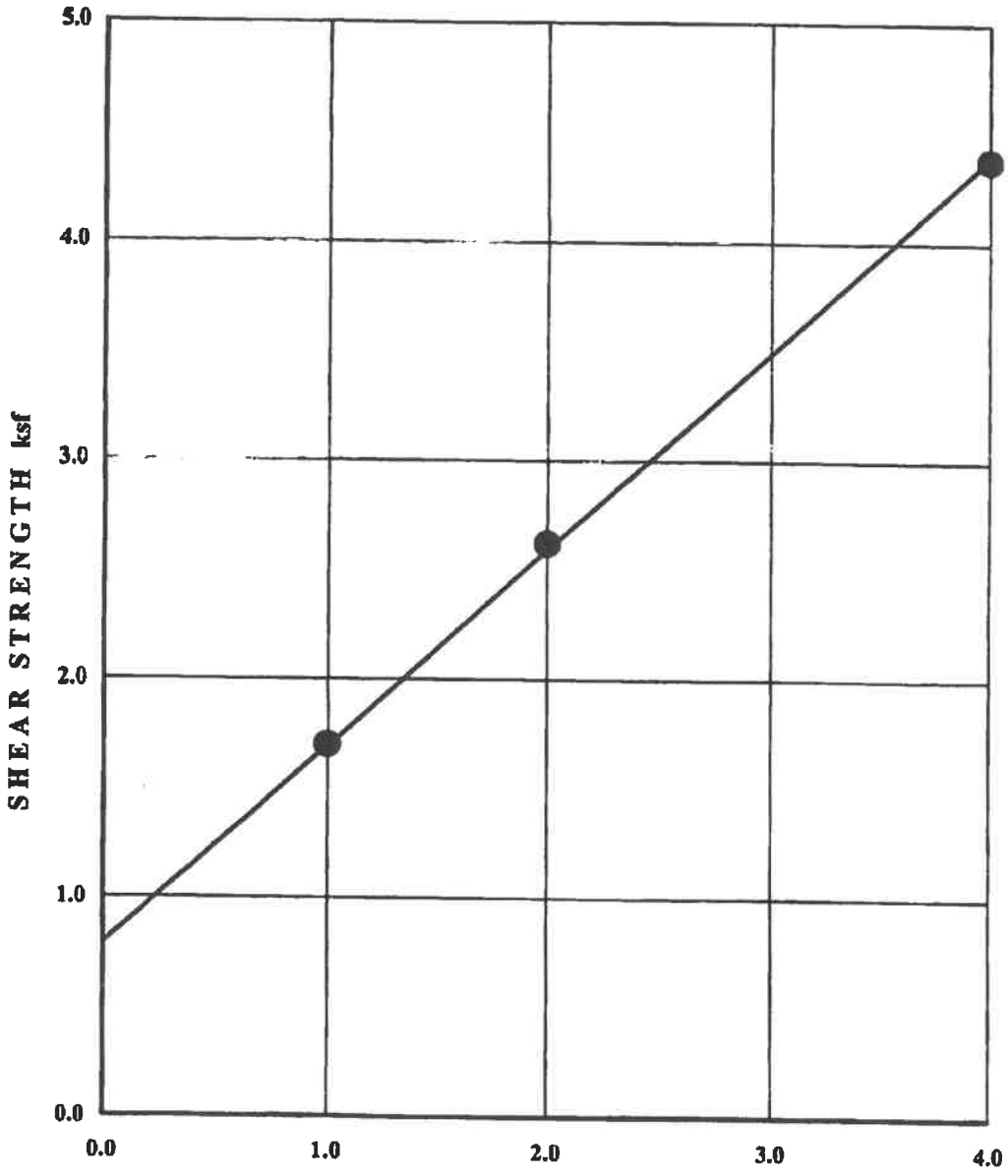
CALWEST GEOTECHNICAL

818-991-7148
805-497-1244

SHEAR TEST DIAGRAM

PROJECT: Dirksen **NUMBER:** G5325

SAMPLE: Exposed Bedrock (qd) -Sample 1 **DATE:** Jan., 2012



STRAIN RATE -0.005 in/min
SAMPLE SATURATION - 24 hrs
DRY DENSITY & WATER CONTENT -

Initial moisture content = 6.4 %
Final moisture content = 15.7 %
116.2 pcf @ 16 %

Ultimate Shear Resistance
COHESION = 790 psf
PHI = 42 °

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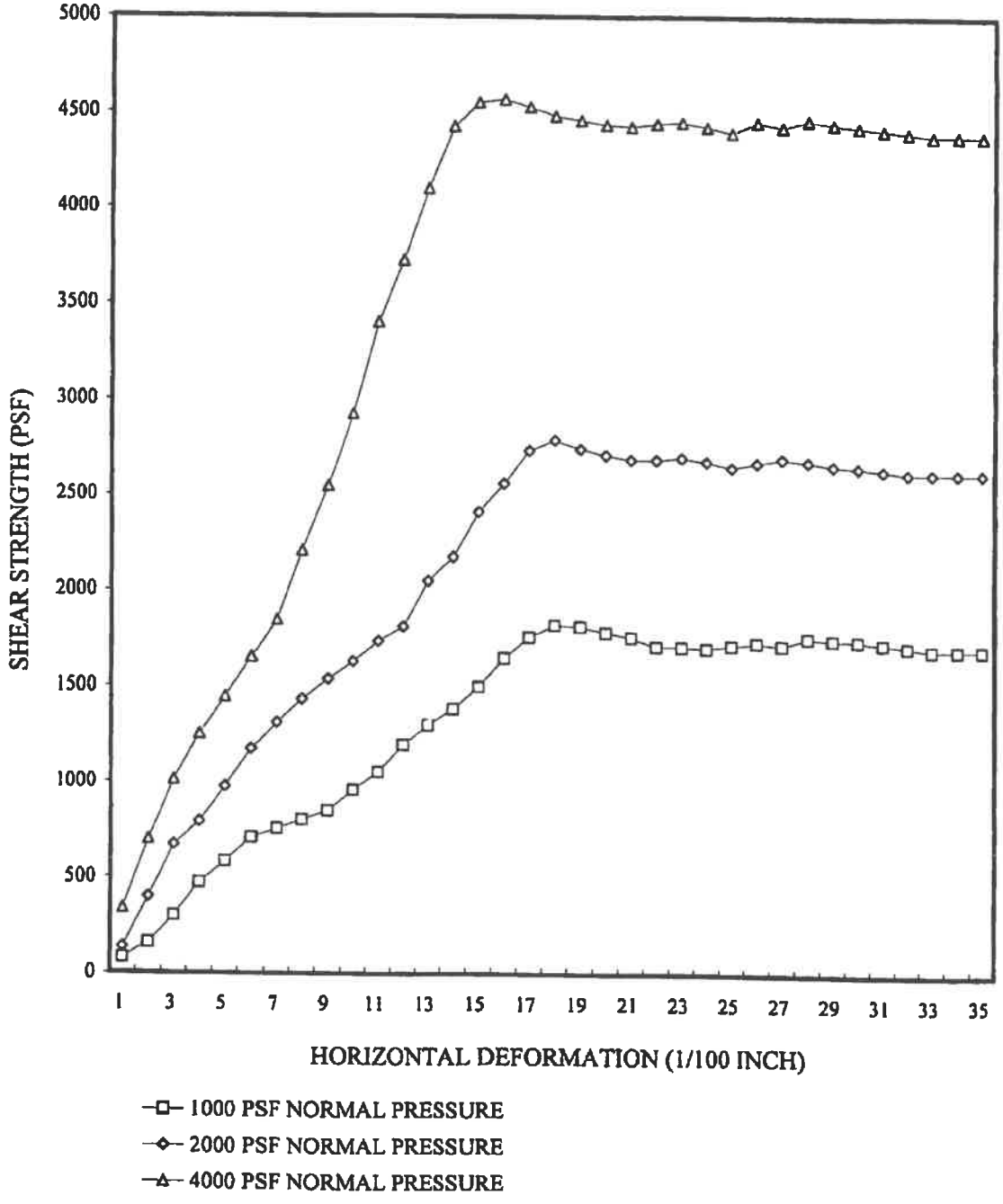
818-991-7148
805-497-1244

DIRECT SHEAR TEST

SAMPLE: Exposed Bedrock (qd) -Sample 1 — first run



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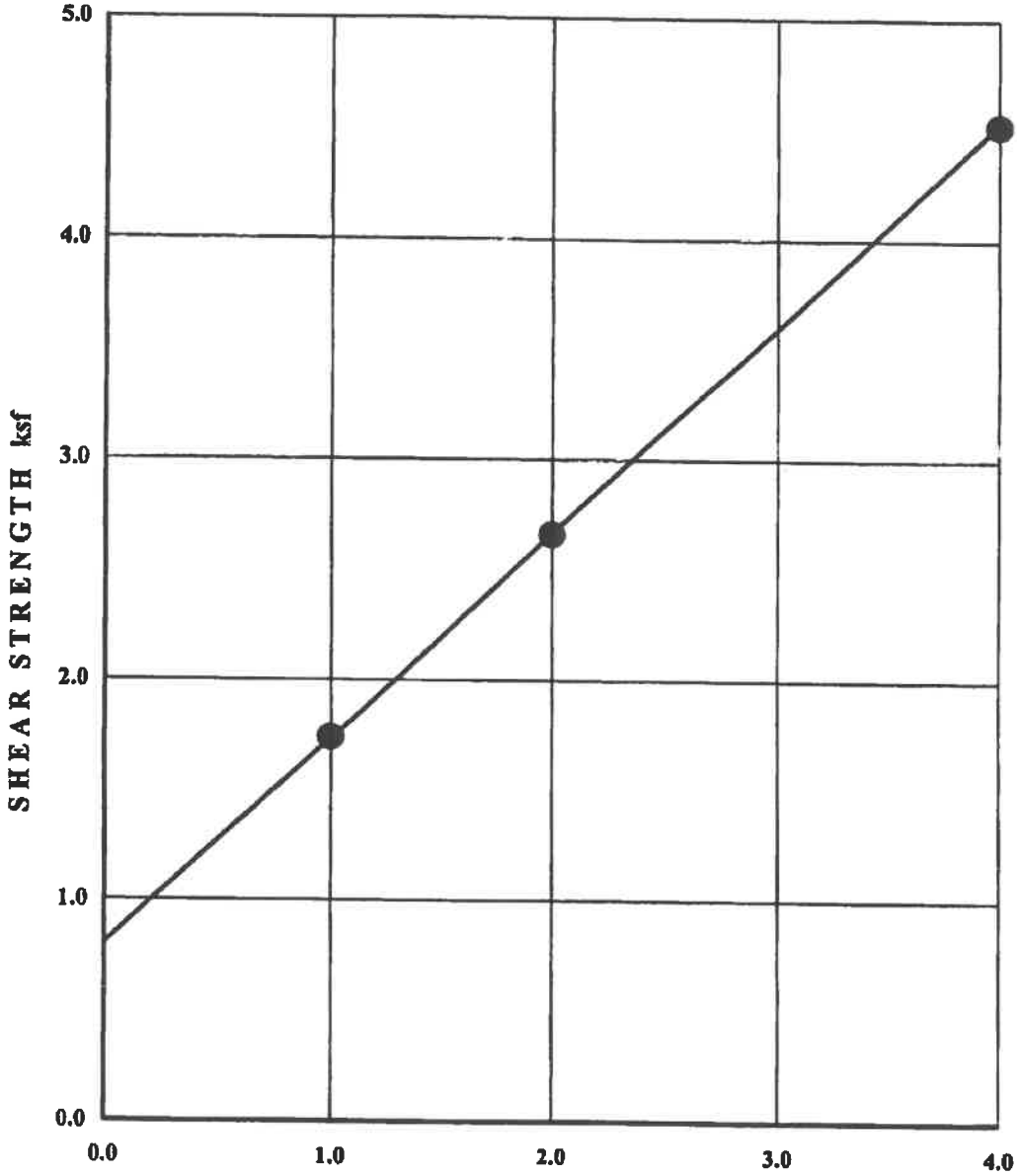
818-991-7148
805-497-1244

SHEAR TEST DIAGRAM

PROJECT: Dirksen **NUMBER:** G5325

SAMPLE: Exposed Bedrock (qd)- Sample 2 **DATE:** Jan., 2012



STRAIN RATE -0.005 in/min
SAMPLE SATURATION - 24 hrs
DRY DENSITY & WATER CONTENT -

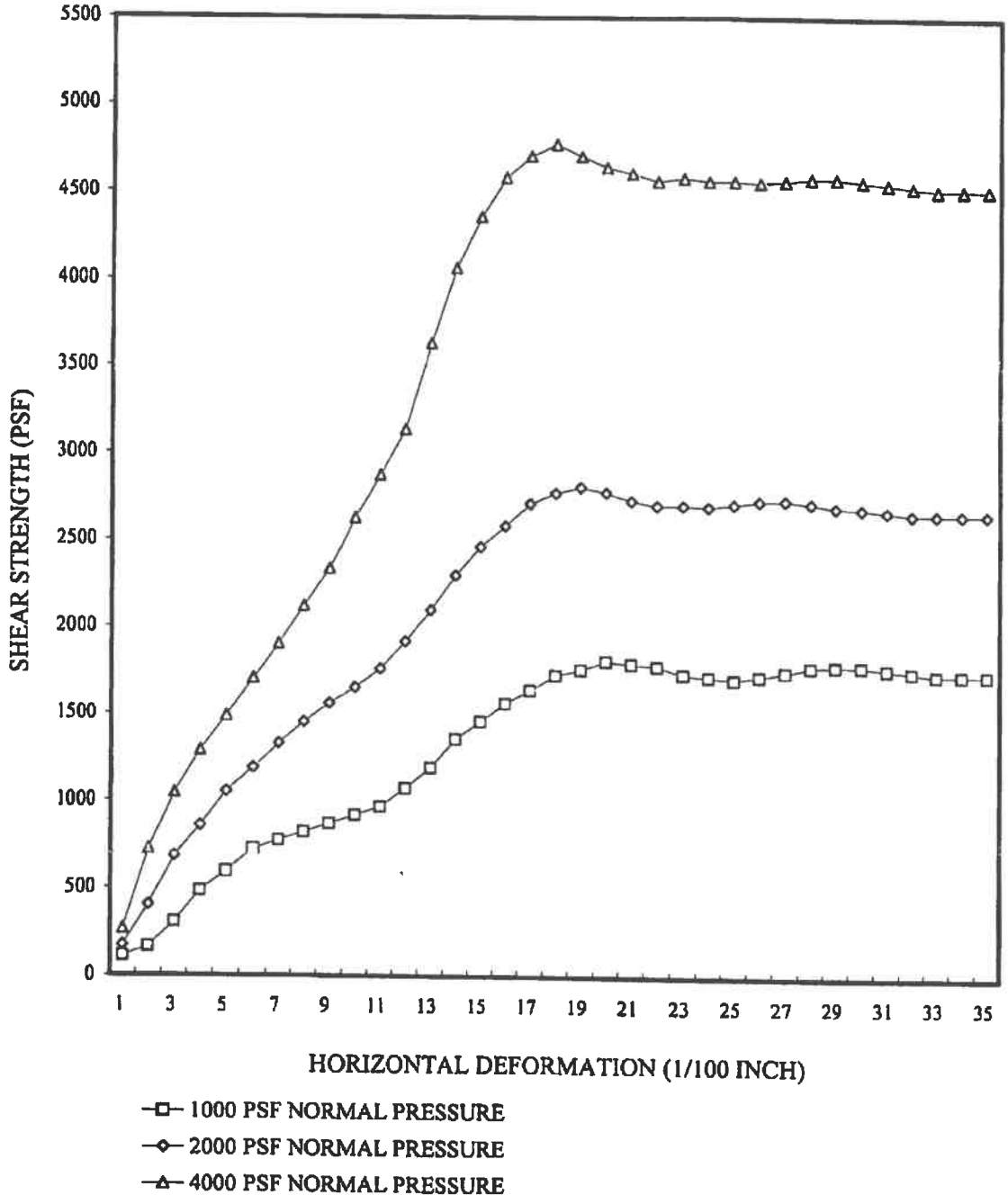
Initial moisture content = 6.1 %
Final moisture content = 15.5 %
117.2 pcf @ 16 %

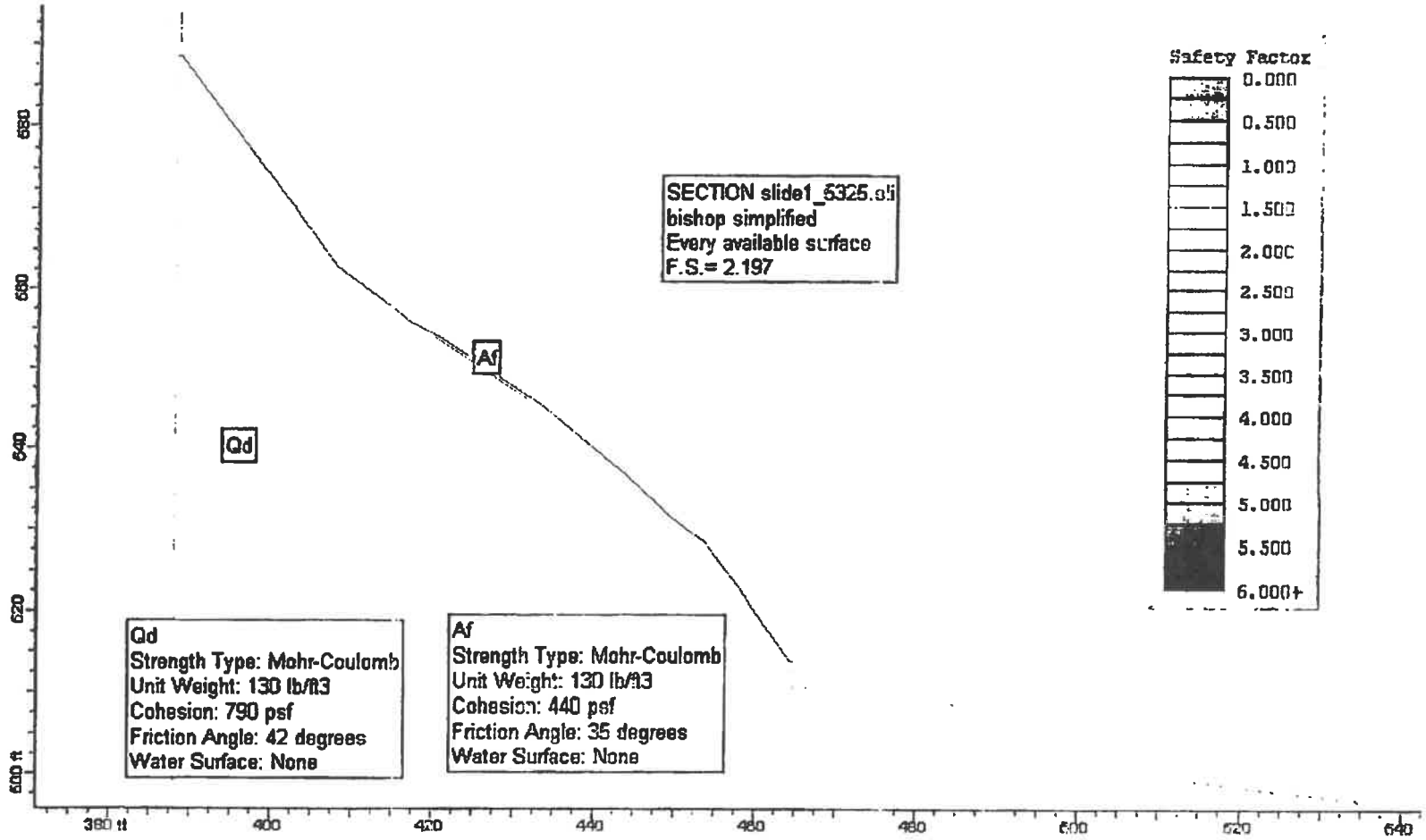
Ultimate Shear Resistance
COHESION = 800 psf
PHI = 43 °

CALWEST GEOTECHNICAL
818-991-7148
805-497-1244

DIRECT SHEAR TEST

SAMPLE: **Exposed Bedrock (qd)- Sample 2** **first run**

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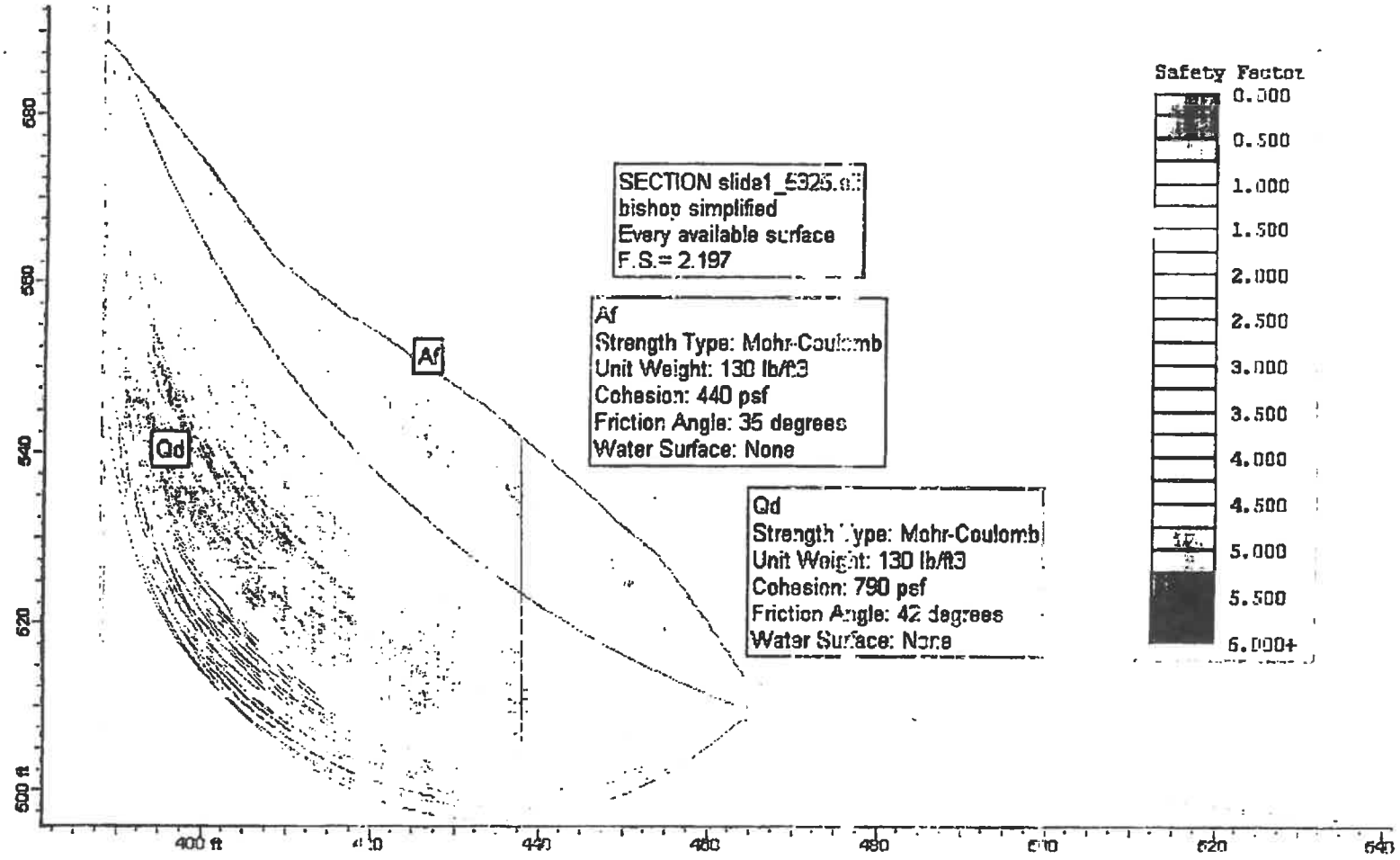
bishop simplified
Every available surface
F.S.= 2.197
Safety Factor
0.000
0.500
1.000
1.500
2.000
2.500
3.000
3.500
4.000
4.500
5.000
5.500
6.000+
Af
Qd
Qd
Strength Type: Mohr-Coulomb
Unit Weight: 130 lb/ft3
Cohesion: 790 psf
Friction Angle: 42 degrees
Water Surface: None
Af
Strength Type: Mohr-Coulomb
Unit Weight: 130 lb/ft3
Cohesion: 440 psf
Friction Angle: 35 degrees
Water Surface: None
380 ft
400
420
440
460
480
500
520
540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Every available surface
F.S.= 2.197
Af
Strength Type: Mohr-Coulomb
Unit Weight: 130 lb/ft3
Cohesion: 440 psf
Friction Angle: 35 degrees
Water Surface: None
Qd
Strength Type: Mohr-Coulomb
Unit Weight: 130 lb/ft3
Cohesion: 790 psf
Friction Angle: 42 degrees
Water Surface: None
Safety Factor
0.000
0.500
1.000
1.500
2.000
2.500
3.000
3.500
4.000
4.500
5.000
5.500
6.000+
Af
Qd
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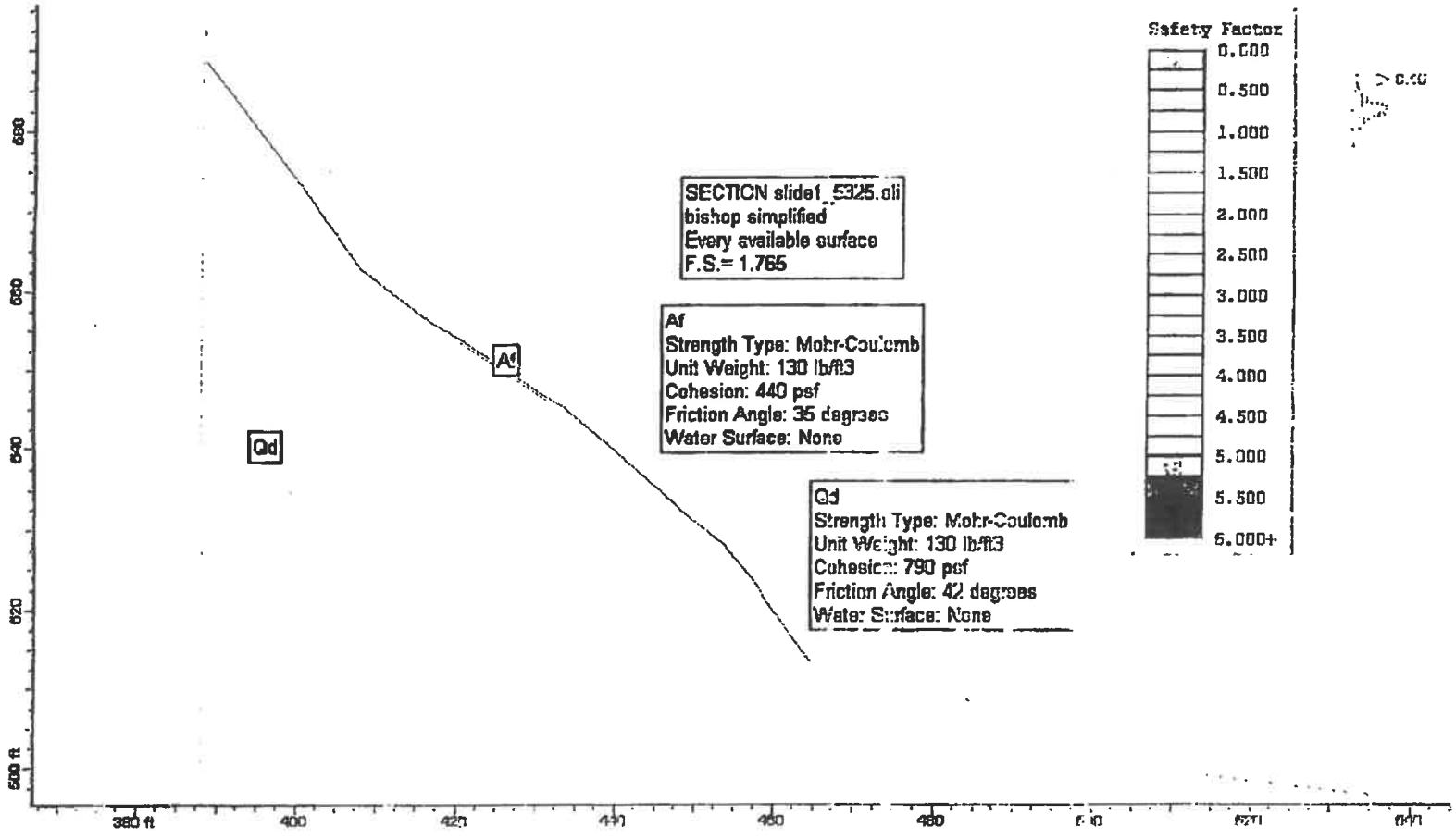
660
620
580
540
500 ft
400 ft
440
480
520
560
600
640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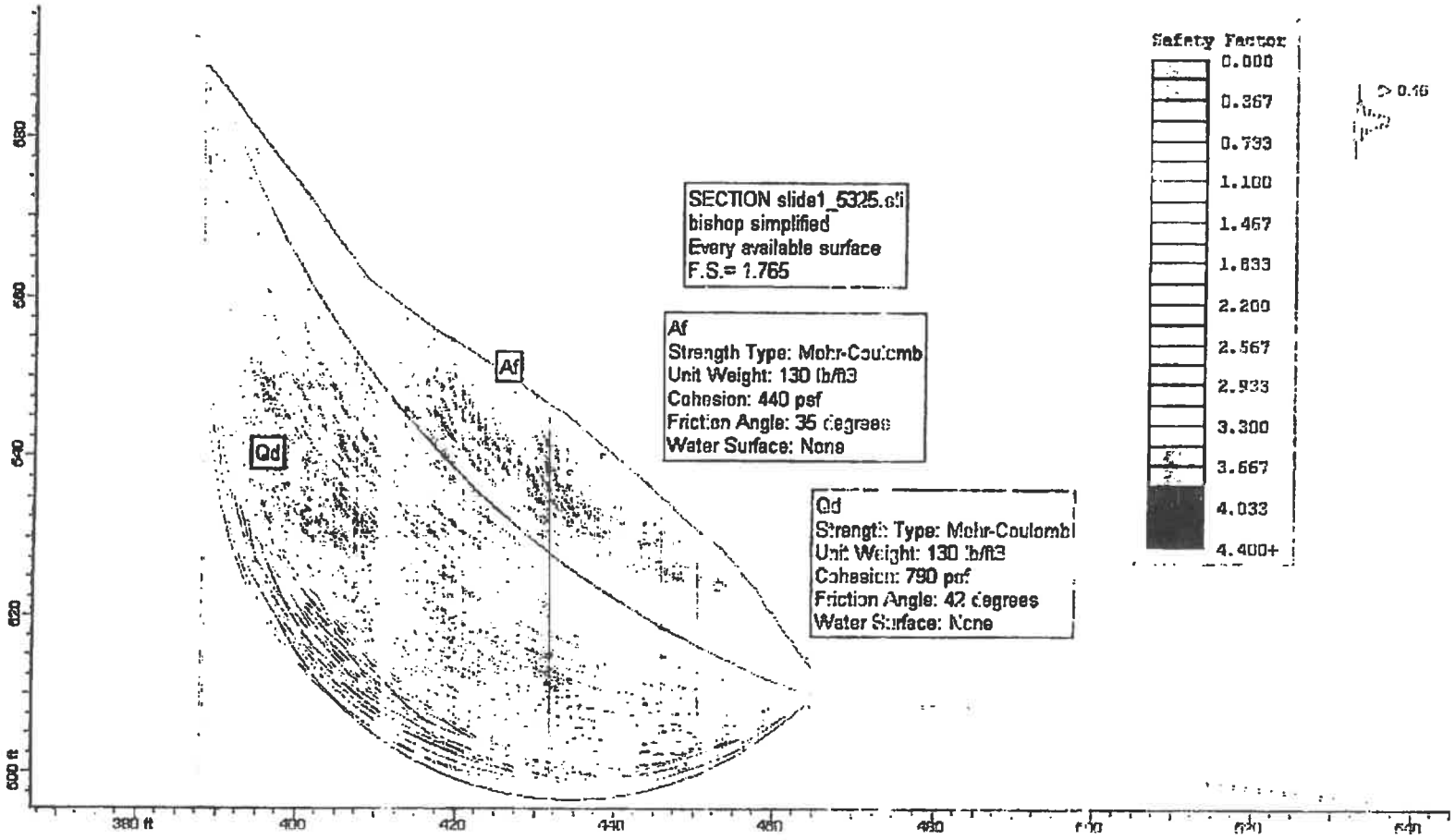
bishop simplified
Every available surface
F.S.= 1.765
Af
Strength Type: Mohr-Coulomb
Unit Weight: 130 lb/ft3
Cohesion: 440 psf
Friction Angle: 35 degrees
Water Surface: None
Qd
Strength Type: Mohr-Coulomb
Unit Weight: 130 lb/ft3
Cohesion: 790 psf
Friction Angle: 42 degrees
Water Surface: None
Af
Qd
Safety Factor
0.000
0.500
1.000
1.500
2.000
2.500
3.000
3.500
4.000
4.500
5.000
5.500
6.000+
380 ft
400
420
440
460
480
500 ft
620
640
660
680


SECTION slide1_5325.gi
bishop simplified
Every available surface
F.S.= 1.765
Af
Strength Type: Mohr-Coulomb
Unit Weight: 130 lb/ft3
Cohesion: 440 psf
Friction Angle: 35 degrees
Water Surface: None
Qd
Strength Type: Mohr-Coulomb
Unit Weight: 130 lb/ft3
Cohesion: 790 psf
Friction Angle: 42 degrees
Water Surface: None
Safety Factor
0.000
0.367
0.733
1.100
1.467
1.833
2.200
2.567
2.933
3.300
3.667
4.033
4.400+
> 0.16
Af
Qd
380 ft
400
420
440
460
480
500
520
540
600 ft
620
640
660
680

Slide Analysis Information

Document Name

File Name: Slide1_5325.sli

Project Settings

Project Title: SLIDE - An Interactive Slope Stability Program
Failure Direction: Left to Right
Units of Measurement: Imperial Units
Pore Fluid Unit Weight: 62.4 lb/ft3
Groundwater Method: Water Surfaces
Data Output: Maximum
Calculate Excess Pore Pressure: Off
Allow Ru with Water Surfaces or Grids: Off
Random Numbers: Pseudo-random Seed
Random Number Seed: 10116
Random Number Generation Method: Park and Miller v.3

Analysis Methods

Analysis Methods used:
Bishop simplified

Number of slices: 25
Tolerance: 0.005
Maximum number of iterations: 50

Surface Options

Surface Type: Circular
Search Method: Slope Search
Number of Surfaces: 5000
Upper Angle: Not Defined
Lower Angle: Not Defined
Composite Surfaces: Disabled
Reverse Curvature: Create Tension Crack
Minimum Elevation: Not Defined
Minimum Depth: Not Defined

Material Properties

Material: Af
Strength Type: Mohr-Coulomb
Unit Weight: 130 lb/ft3
Cohesion: 440 psf
Friction Angle: 35 degrees
Water Surface: None

Material: Qd
Strength Type: Mohr-Coulomb
Unit Weight: 130 lb/ft3
Cohesion: 790 psf
Friction Angle: 42 degrees
Water Surface: None

Material: Qal
Strength Type: Mohr-Coulomb
Unit Weight: 120 lb/ft3
Cohesion: 1 psf
Friction Angle: 35 degrees
Water Surface: None

Global Minimums

Method: bishop simplified
FS: 2.196990
Center: 507.142, 625.688
Radius: 123.611
Left Slip Surface Endpoint: 390.006, 586.204
Right Slip Surface Endpoint: 464.493, 509.670
Left Slope Intercept: 390.006 586.204
Right Slope Intercept: 464.493 510.829
Resisting Moment=2.13454e+007 lb-ft
Driving Moment=9.71574e+006 lb-ft

List of All Coordinates

Material Boundary

466.790	508.404
471.198	502.001
474.107	498.368
477.999	494.636
481.195	492.239
485.553	489.584
488.992	487.849
491.944	486.554
500.167	483.623
510.895	480.592
519.398	478.573

Material Boundary

420.041	554.010
420.041	554.010
420.700	549.612
422.499	546.612
427.499	543.612
432.499	543.612
432.528	545.559

External Boundary

563.461	478.573
563.461	497.340
548.116	496.790
545.476	496.443
545.488	490.868
534.718	490.875
534.732	496.526
533.679	496.554
514.777	498.763
484.484	498.751
484.484	508.396
466.790	508.404
464.500	508.580
464.487	513.079
459.620	520.050
458.738	521.181
457.719	522.868
453.495	528.124
449.372	531.271
447.579	532.934
443.930	536.282
432.736	545.593
432.528	545.559
420.416	553.814
420.041	554.010
417.079	555.557
407.966	562.561
401.454	571.627
388.265	588.421
388.265	478.573
519.398	478.573

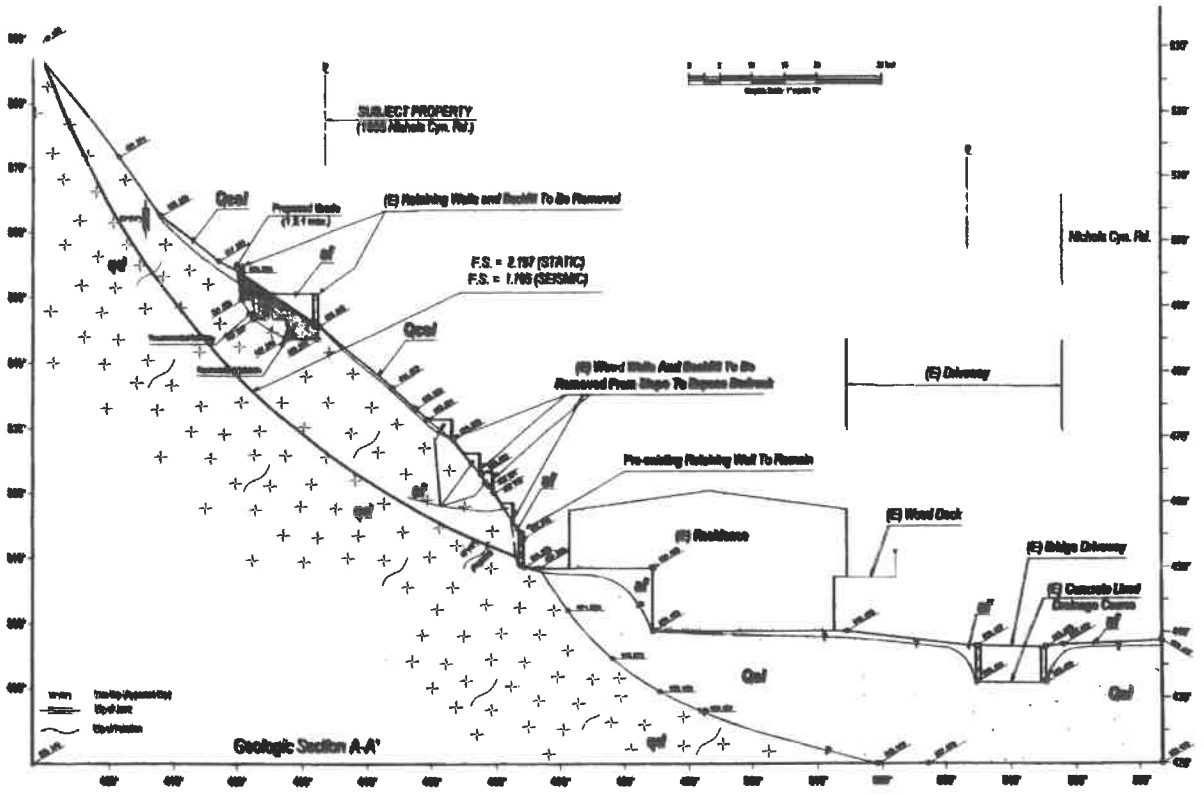
GRADING
OVERSIZE DOCUMENT

To view the Grading
oversize document for:

Tract:	13404
Block:	— Lot: 3
Job Address:	1805 Nichols Canyon Rd
X-Ref:	2x Date: 1/27/12

Look for the document type called "Grading Oversize Document" dated 1/27/12 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.

GEOLOGIC SECTION A



GEOLOGIC UNITS

Surficial Sediments: Qal, Qcol *Bedrock:* Tsm

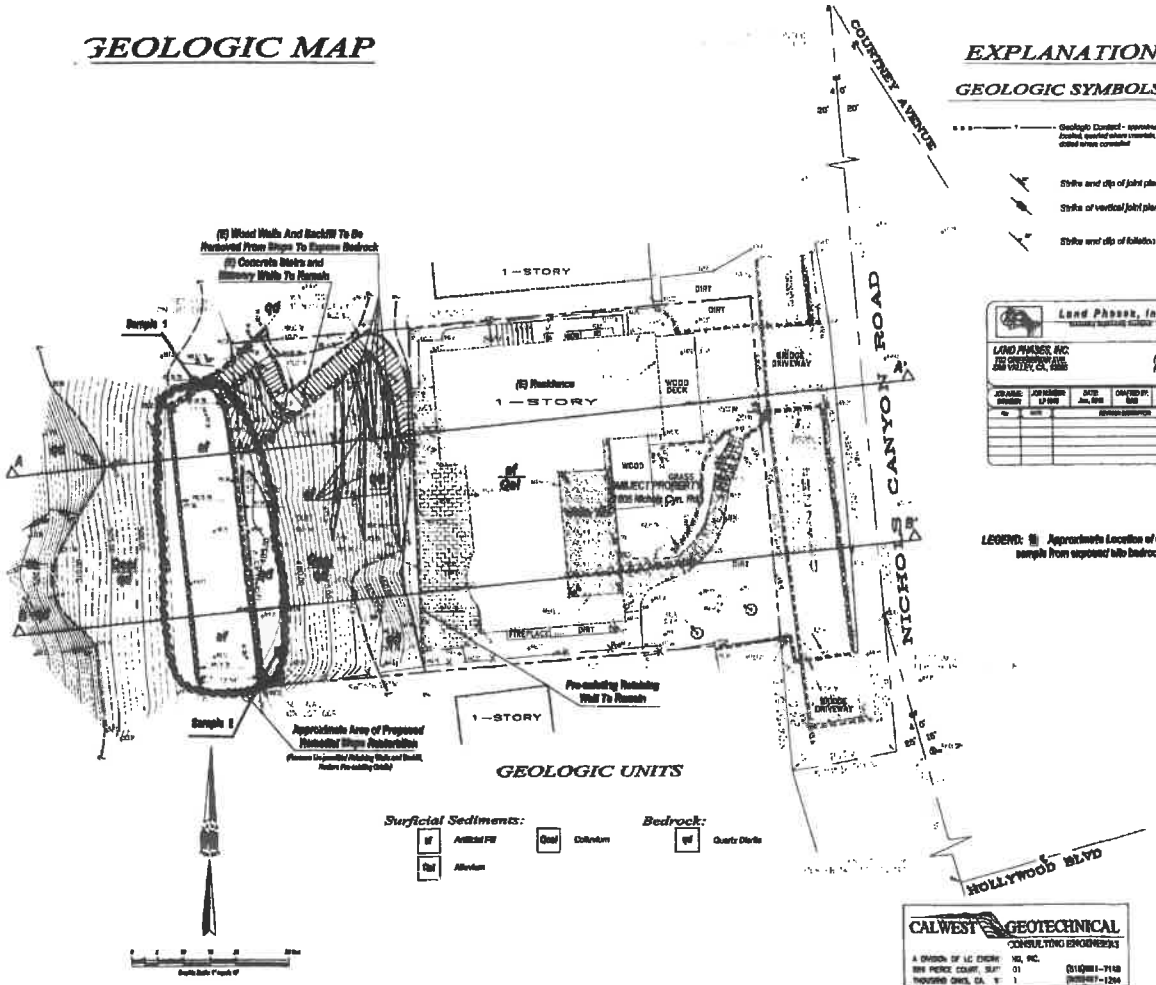
Lead Places, Inc.

CALWEST GEOTECHNICAL
CONSULTING ENGINEERS

2x 1/27/12
Tract: 13104
Lot: 3
Address: 1805 Nichols Canyon Rd

GEOTECHNICAL MAP

GEOLOGIC MAP



EXPLANATION

GEOLOGIC SYMBOLS

Geologic Contact - approximately located, queried where uncertain, dotted where concealed

Strike and dip of joint plane

Strike of vertical joint plane

Strike and dip of foliation

Land Phases, Inc.

LAND PHASES, INC.
[illegible]
SAN VALLEY, CA. 91605
(818) 837-0162
(818) 882-7270 FAX

JOB NAME	JOB NUMBER	DATE	CHECKED BY	PLATE 1
	LP 606	Jan. 606	MB	

No.	DATE	REVISION DESCRIPTION

LEGEND: 1 Approximate Location of collected sample from exposed site bedrock

GEOLOGIC UNITS

Surficial Sediments:

af Artificial Fill

Qal Alluvium

Qcol Colluvium

Bedrock:

gd Quartz Diorite

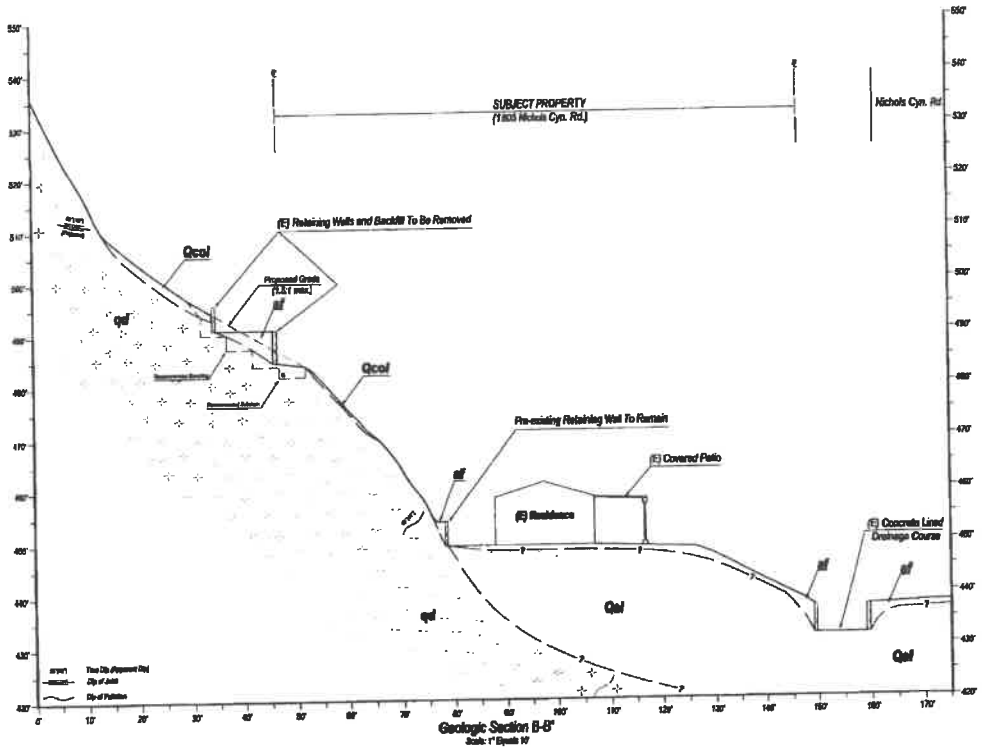
CALWEST GEOTECHNICAL
CONSULTING ENGINEERS

A DIVISION OF LC ENGINEERING, INC.
999 PEDRO COURT, SUITE 01
THOUSAND OAKS, CA. 91360 1
(818)991-7149
(805)497-1294

GEOLOGIC SECTION B

Ybb/rz

2x
Tract: 13404
Lot: 3
Address: 1805 Nichols Canyon Rd

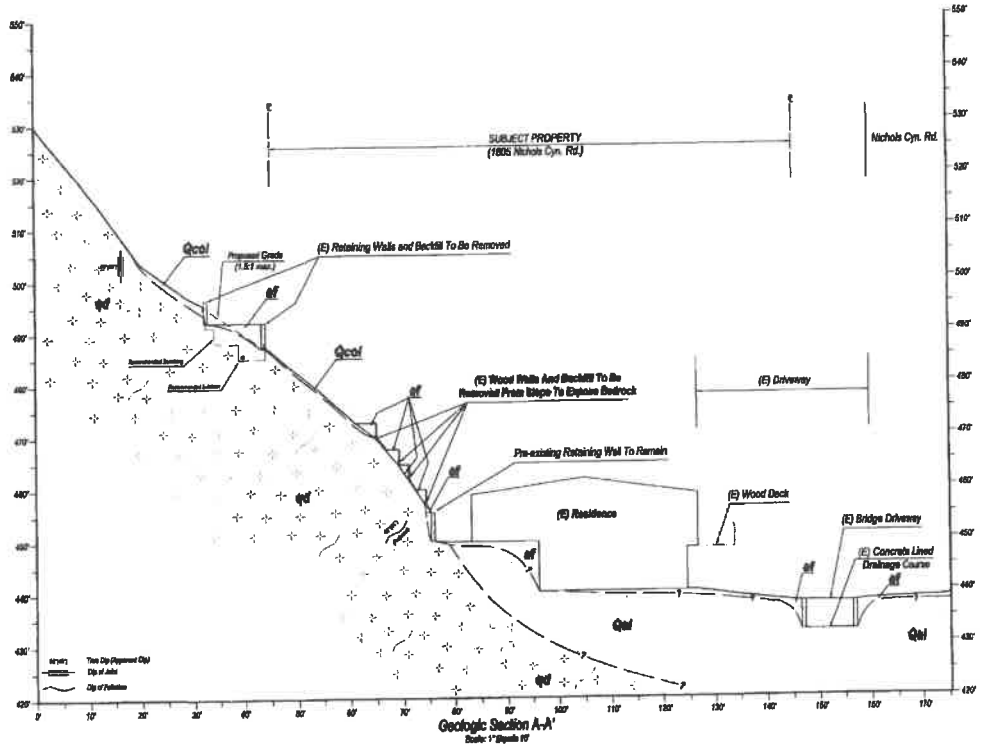


Land Phases, Inc.

LAND PHASES, INC.
[illegible]
[illegible]

PLATE 3

GEOLOGIC SECTION A

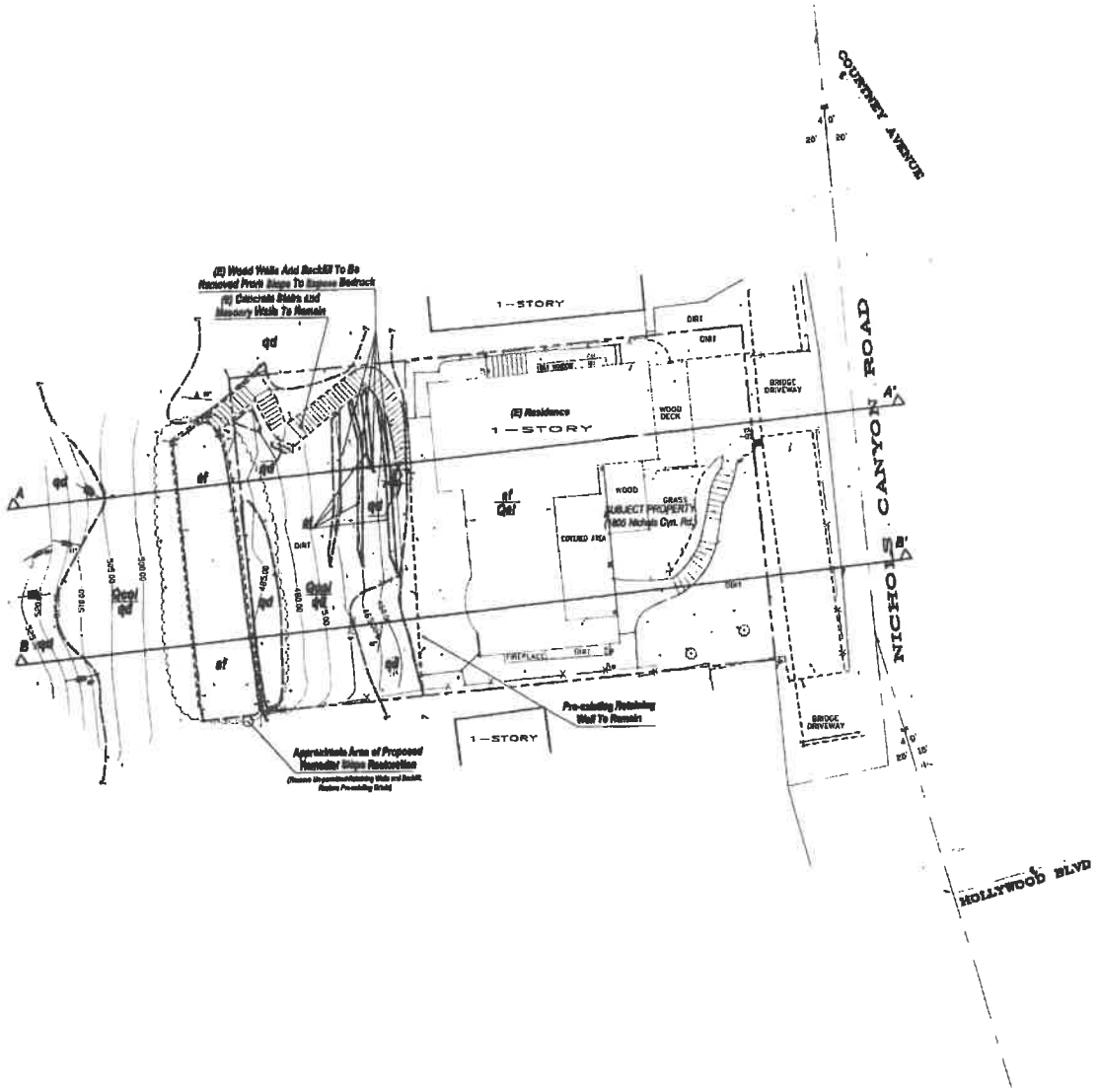


Land Phases, Inc.

LAND PHASES, INC.

PLATE 2

GEOLOGIC MAP



EXPLANATION

GEOLOGIC SYMBOLS

- Geologic Contact - approximately located, queried where uncertain, dashed where concealed
- Strike and dip of joint plane
- Strike of vertical joint plane
- Strike and dip of foliation

GEOLOGIC UNITS

Surficial Sediments:

- af — Artificial Fill
- Qal — Alluvium
- Qcol — Colluvium

Bedrock:

- qd — Quartz Diorite

GEOLOGIC SHEET INDEX

Land Phases, Inc.
LAND PHASES, INC.
(805) 657-0142
(805) 657-1729

PLATE 1