APPENDIX D- GEOTECHNICAL REPORT

Geotechnical Report- Irvine Geotechnical, Inc.- July 8, 2016
Soils Report- Geotechnologies, Inc. - October 19, 2018

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GEOTECHNICAL ENGINEERING EXPLORATION
PROPOSED REMODEL & TWO NEW BUILDINGS
PORTION OF BLOCK F, SUBDIVISION OF BRADBURY'S ADDITION TO MONROVIA TRACT
(APN'S 8507-002-901-904 & 8507-002-24-25)
123-137 WEST POMONA AVENUE
MONROVIA, CALIFORNIA 91016

FOR WINE OF THE MONTH CLUB

IRVINE GEOTECHNICAL, INC. PROJECT NUMBER IC 14180-I

JULY 8, 2016

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INTRODUCTION

This report has been prepared per our agreement and summarizes findings of Irvine Geotechnical's geotechnical engineering exploration performed on the site. The purpose of this study is to evaluate the nature, distribution, and engineering properties of the earth materials underlying the site with respect to the design and construction of the proposed project.

INTENT

It is the intent of this report to assist in the design and completion of the proposed project. The recommendations are intended to reduce geotechnical risks affecting the project. The professional opinions and advice presented in this report are based upon commonly accepted standards and are subject to the general conditions described in the NOTICE section of this report.

EXPLORATION

The scope of the field exploration was determined from our initial site visit and consultation with the client. The preliminary plans prepared by McKently Malak were considered prior to beginning work on this project. Exploration was conducted using techniques normally applied to this type of project in this setting. This report is limited to the area of the exploration and the proposed project as shown on the enclosed Site Plan. Conditions

affecting portions of the property outside the area explored, are beyond the scope of this report.

Exploration was conducted on May 31, 2016 with the aid of hand labor and a hollow-stem auger drill rig. It included excavating 3 test pits to a maximum of 4 feet for infiltration testing and drilling 5 borings to a maximum depth of 30 feet. Samples of the earth materials were obtained and delivered to the soils engineering laboratory of Soil Labworks, LLC for testing and analysis. The borings and test pits were logged by the staff geologist.

Office tasks included laboratory testing of selected soil samples, reviewing historical topographic maps and aerial photographs, preparing the Site Plan and performing engineering analysis. Earth materials exposed in the test pits and borings are described on the enclosed Log of Test Pits and the Log of Borings. Appendix I contains a discussion of the laboratory testing procedures and results.

The proposed project, and the location of borings and test pits are shown on the Site Plan.

PROPOSED PROJECT

Information concerning the proposed project was provided by the client and the architect. The conceptual plans prepared by McKently Malak Architects were a guide for exploring the site and preparing this report. It is proposed to construct two new buildings - Building 4 in the southwestern portion of the property and Building 3 in the north-central portion of the property. Building 1 will be remodeled and a loading dock is proposed for Building 2. Additional parking areas, planters, and hardscaping are also planned.

Formal plans have not been prepared and await the conclusions and recommendations of this report.

SITE DESCRIPTION

The subject property consists of several, mostly level and partially developed parcels, in the city of Monrovia California. It is located on the north side of W Pomona Avenue, just southwest of the intersection of Myrtle Avenue with the Foothill (I-210) Freeway, and just northeast of the Monrovia Gold Line Station. The property is bounded by Pomona Avenue on the south, Primrose Avenue on the west, Evergreen Avenue on the north, and commercial properties toward the east. The site is developed with a two commercial buildings, and a large paved parking lot. The easterly building is used as a warehouse. The surrounding area is developed with retail and commercial properties.

The study area is essentially level with a slight slope from north to south. Physical relief across the property is less than 4 feet. Surface drainage generally is by sheet flow runoff to north south flowing concrete swales that drain south toward Pomona Avenue.

Vegetation on the site is mostly sparse and limited to planters around the margins of the property and near portions of the existing buildings.

GROUNDWATER

Groundwater was not encountered during exploration in borings drilled to 30 feet. Seasonal fluctuations in groundwater levels may occur due to variations in climate, irrigation, and other factors not evident at the time of the exploration. Historically high groundwater in this area of Monrovia is estimated to be approximately 125 feet below the ground surface (*Plate 1.2 Historically Highest Ground Water Contours and Borehole Log Data Locations, Mt. Wilson 7 ½ Minute Quadrangle in Seismic Hazard Zone Report for the Mt. Wilson Quadrangle SHR. 030).*

Groundwater will not be a factor in site development and/or infiltration.

EARTH MATERIALS

Fill

Fill and/or disturbed alluvium, associated with previous site grading, underlies portions of the site to a maximum observed thickness of two feet in the vicinity of Test Pits 1 and 2 and Boring 4. The fill consists of silty sand that is grey-brown, slightly moist, and medium dense. Considerable amounts of construction debris were encountered in Test Pit 1, to a depth of two feet.

Alluvium

Natural alluvial deposits underlie the subject property and were encountered to total depth of all borings. The upper 10 to 15 feet of alluvium consists of silty sand with some gravelly sand that is grey-brown to yellow-brown, slightly moist to moist and medium dense to dense. Below 10 to 15 feet of alluvium consist primarily of gravelly sand with some silt that is yellow-brown to orange-brown, slightly moist to moist and dense.

GENERAL SEISMIC CONSIDERATIONS

Southern California is located in an active seismic region and numerous known and undiscovered earthquake faults are present in the region. Hazards associated with fault rupture and earthquakes include direct affects such as strong ground shaking and ground rupture, as well as secondary effects such as liquefaction, landsliding and lurching. The United States Geological Survey (USGS), California Geologic Survey (CGS), Southern California Earthquake Center (SCEC), private consultants and universities have been studying earthquakes in southern California for several decades. Early studies were directed toward earthquake prediction and early warning of strong ground shaking.

Research and practice have shown that earthquake prediction is not practical or sufficiently accurate to benefit the general public. Also, several recent and damaging earthquakes have occurred on faults that were unknown prior to rupture. Current standards and the California Building Code call for earthquake resistant design of structures as opposed to prediction.

Alquist-Priolo Fault Rupture Hazard Study Zone

California faults are classified as active, potentially active or inactive. Faults from past geologic periods of mountain building, but do not display any evidence of recent offset are considered "inactive" or "potentially active." Faults that have historically produced earthquakes or show evidence of movement within the Holocene (past 11,000 years) are considered "active faults." Active faults that are capable of causing large earthquakes may also cause ground rupture. The Alquist-Priolo Act of 1971 was enacted to protect structures from hazards associated with fault ground rupture. No known active faults cross the subject property and the site is not located within an Alquist-Priolo Fault Rupture Hazard Study Zone.

The nearest mapped surface traces (intersection of the fault with the ground surface) of known potentially active faults are the Raymond and the East Montebello, located approximately 1.7 miles to the north and 7.2 to the south, respectively. The ground rupture hazard at the site is considered nil.

Building Code Seismic Coefficients

Seismic design parameters within the Building Code include amplification of the seismic forces on the structure depending on the soil type, distance to seismic source and intensity of shaking. The purpose of the code seismic design parameters is to prevent collapse of structures and loss of life during strong ground shaking. Cosmetic damage should be expected.

SEISMIC COEFFICIENTS (2013 California Building Code)		
Latitude = 34.1346°N Longitude = 118.00184°W	Short Period (0.2s)	One-Second Period
Earth Materials and Site Class from Table 1613.5.2 and Section 1613.5.2	D	
Seismic Design Category from Table 1613.5.6(1) and 1613.5.6(2)	E	
Spectral Accelerations from Figures 1613.5 (1) through 1613.5(14)	S_s = 2.124 (g)	S_1 = 0.855 (g)
Site Coefficients from Tables 1613.5.3 (1) and 1613.5.3 (2)	F_A = 1.0	F_V = 1.500
Spectral Response Accelerations from Equations 16-36 and 16-37	S_{MS} = 2.124 (g)	S_{M1} = 1.283 (g)
Design Accelerations from Equations 16-38 and 16-39	S_{DS} = 1.416 (g)	S_{D1} = 0.855 (g)

Seismic Hazards

The principal seismic hazard to the subject property and proposed project is strong ground shaking from earthquakes produced by local faults. Modern, well-constructed buildings are designed to resist ground shaking through the use of shear panels, moment-resisting frames and reinforcement. Additional precautions may be taken to protect personal property and reduce the chance of injury, including strapping water heaters and securing furniture and appliances. It is likely that the subject property will be shaken by future earthquakes produced in southern California. However, secondary effects such as surface rupture, lurching, liquefaction, consolidation, ridge shattering, and landsliding should not occur at the subject property.

Seismic Hazard Zones

The California State Legislature enacted the Seismic Hazards Mapping Act of 1990, which was prompted by damaging earthquakes in California, and was intended to protect public

safety from the effects of strong ground shaking, liquefaction, landslides, and other earthquake-related hazards. The Seismic Hazards Mapping Act requires that the State Geologist delineate various "seismic hazards zones." The maps depicting the zones are released by the California Geological Survey.

The Seismic Hazards Mapping Act requires a site investigation by a certified engineering geologist and/or civil engineer with expertise in geotechnical engineering, for projects sited within a hazard zone. The investigation is to include recommendations for a "minimum level of mitigation" that should reduce the risk of ground failure during an earthquake to a level that does not cause the collapse of buildings for human occupancy. The Seismic Hazards Mapping Act does not require mitigation to a level of no ground failure and/or no structural damage.

Seismic Hazard Zone delineations are based on correlation of a combination of factors, including: surface distribution of soil deposits; physical relief; depth to historic high groundwater; shear strength of the soils; and occurrence of past seismic deformation. The subject property is located within the United States Geologic Survey, Mt. Wilson Quadrangle. Seismic hazards within the Mt. Wilson Quadrangle were evaluated by the CGS in their report, *"Seismic Hazard Zone Report for the Mt. Wilson 7.5-minute Quadrangle, Los Angeles County, California, Seismic Hazard Zone Report* 030." According to the Seismic Hazard Zones Map, the subject property is **not** within an area that has been subject to, or may be subject to liquefaction or earthquake induced ground deformation.

Based upon the well consolidated nature of the alluvial soils and the depth to groundwater, it is the opinion of the undersigned that the liquefaction and earthquake induced ground deformation potentials at the site are nil.

Ground Motion

Spectral accelerations at the site were determined for the Maximum Considered Earthquake (MCE) following the procedures in ASCE 7-10 and the 2014 Building Code. The computed PGA_M for this site is 0.808g. According to the USGS deaggregation website (https://geohazards.usgs.gov/deaggint/2008/), and using a ground motion with a 10 percent probability of exceedance in 50 years, the modal de-aggregated earthquake PGA and moment magnitude are 0.558g and 6.6, respectively. For a ground motion with a 2 percent probability of exceedance in 50 years, the modal de-aggregated earthquake PGA and moment magnitude are 0.945g and 6.6, respectively. The modal distance to the ground motion source is 3.4 km.

CONCLUSIONS AND RECOMMENDATIONS

General Findings

The conclusions and recommendations of this exploration are based upon five borings, three test pits, research of available records, consultation, years of experience observing similar properties in similar settings and review of the development plans. It is the finding of Irvine Geotechnical that construction of the proposed project is feasible from a geotechnical engineering standpoint provided the advice and recommendations contained in this report are included in the plans and are implemented during construction.

The recommended bearing material for the proposed structures is the native alluvial deposits, which are generally present within 1 to 2 feet of the surface. The existing fill is not recommended for foundation, slab, or paving support. Conventional foundations deepened through the fill to derive support may be utilized. Alternatively, the existing fill and upper alluvium may be removed and recompacted for foundation and slab support.

Code Section 111

Relative to Code Section 111, provided that the recommendations contained in this and the references reports are included in the design and implemented in the field, the proposed improvements will not be subject to geologic and geotechnical hazards associated with settlement, slippage, landsliding, expansive soils, liquefaction or chemical attack. Also, construction and grading of the project will not have an adverse effect on the offsite properties.

SITE PREPARATION

Surficial materials consisting of fill and disturbed alluvium are present on the site. Remedial grading is recommended to improve site conditions for support of slabs and paving, and as alternative for support of foundations.

General Grading Specifications

The following guidelines may be used in preparation of the grading plan and job specifications. Irvine Geotechnical would appreciate the opportunity of reviewing the plans to insure that these recommendations are included. The grading contractor should be provided with a copy of this report.

The site should be prepared to receive compacted fill by removing all vegetation, debris, existing fill, and disturbed soils. The exposed excavated area should be observed by the soils engineer prior to placing compacted fill. The exposed grade should be scarified to a depth of six inches, moistened to optimum moisture content, and recompacted to 90 percent of the maximum density.

A. If the fill is intended for structural support, the proposed building site shall be excavated to a minimum depth of 3 feet below the bottom of all footings. The excavation shall extend a minimum of five feet beyond the building footprint. Otherwise, the depths of removals may be limited to the thickness of fill and

disturbed soils. The excavated areas shall be observed by the soils engineer prior to placing compacted fill.

B. Fill, consisting of soil approved by the soils engineer, shall be placed in horizontal lifts and compacted in six inch layers with suitable compaction equipment. The excavated onsite materials are considered satisfactory for reuse in the controlled fills. Any imported fill shall be observed by the soils engineer prior to use in fill areas. Rocks larger than six inches in diameter shall not be used in the fill.

C. The fill shall be compacted to at least 95 percent of the maximum laboratory density for the material used. The fill should be placed at a moisture content that is at or within 3 percent over optimum. The maximum density and optimum moisture content shall be determined by ASTM D 1557-12 or equivalent.

D. Field observation and testing shall be performed by the soils engineer during grading to assist the contractor in obtaining the required degree of compaction and the proper moisture content. Where compaction is less than required, additional compactive effort shall be made with adjustment of the moisture content, as necessary, until 95 percent compaction is obtained. One compaction test is required for each 500 cubic yards or two vertical feet of fill placed.

E. At one time, the site and the former residence may have been serviced by a private sewerage. Private sewage disposal systems generally consist of a septic tank and one or more cesspool or seepage pits. Any seepage pits or cesspools found during grading should be properly abandoned in conformance with the city's guidelines. As a minimum, the liner and debris should be removed to expose the bearing material. The void may then be filled with compacted fill or another approved material.

FOUNDATION DESIGN

General Conditions

The following foundation recommendations are minimum requirements. The structural engineer may require footings that are deeper, wider, or larger in diameter, depending on the final loads.

Spread Footings

Continuous and/or pad footings may be used to support the proposed structures provided they are founded in alluvium or compacted fill. Continuous footings should be a minimum of 12 inches in width. Pad footings should be a minimum of 24 inches square. The following chart contains the recommended allowable design parameters.

Bearing Material	Minimum Embedment Depth of Footing (Inches)	Vertical Bearing (psf)	Coefficient of Friction	Passive Earth Pressure (pcf)	Maximum Earth Pressure (psf)
Approved Compacted Fill	18	2,000	0.35	250	4,000
Alluvium	12	2,000	0.35	250	4,000

Increases in the bearing values are allowable at a rate of 400 pounds per square foot for each additional foot of footing width or depth to a maximum of 4,000 pounds per square foot. For bearing calculations, the weight of the concrete in the footing may be neglected.

The bearing value shown above is for the total of dead and frequently applied live loads and may be increased by one third for short duration loading, which includes the effects of wind or seismic forces.

The on-site soils are non-expansive. Footings should be reinforced following the recommendations of the structural engineer. It is recommended that continuous footings be reinforced with a minimum of four #4 steel bars; two placed near the top and two near the bottom of the footings. Footings should be cleaned of all loose soil, moistened, free

of shrinkage cracks and approved by the geotechnical engineer prior to placing forms, steel or concrete.

Foundation Settlement

Settlement of the foundation system is expected to occur on initial application of loading. A settlement of ¼ to ½ inch may be anticipated. Differential settlement should not exceed ½ inch in 20 feet.

RETAINING WALLS

General Design

Low retaining walls may be employed to create the loading dock, planters and ramps. The walls are expected to be less than 6 feet high and have a level surcharge condition.

Cantilevered retaining walls up to 6 feet high that support alluvium and approved retaining wall backfill, may be designed for an equivalent fluid pressure of 35 pounds per cubic foot. Restrained basement walls that are pinned at the top by a non-yielding floor or slab should be designed for an at-rest earth pressure. The recommended design at-rest earth pressure on restrained basement walls is an equivalent fluid pressure of 60 pcf.

Retaining walls up to 6 feet high need not include a seismic surcharge.

Surcharge Loading

Retaining walls that are surcharged by traffic and/or structural loads should be designed to withstand the surcharge. For traffic within 6 feet of retaining walls, the recommended traffic surcharge is 100 psf, distributed evenly over the wall. Irvine Geotechnical would be

happy to assist the structural engineer in evaluating the surcharge pressure and the point of application from concentrated structural loads.

Subdrain

The recommended design earth pressures assume a free-draining backfill and no buildup of hydrostatic pressures. Retaining walls should be provided with a subdrain or weepholes covered with a minimum of 12 inches of ¾ inch crushed gravel. Not all subdrain systems and pipes are approved by all Building Departments. It is recommended that the Building Department be consulted when using non-conventional systems. The subdrain system should discharge to the atmosphere or to an engineered sump via gravity. Surface drains should not be connected to the subdrain system.

Backfill

Retaining wall backfill should be compacted to a minimum of 95 percent of the maximum density as determined by ASTM D 1557-12. Where access between the retaining wall and the temporary excavation prevents the use of compaction equipment, retaining walls should be backfilled with ¾ inch crushed gravel to within 2 feet of the ground surface. Where the area between the wall and the excavation exceeds 18 inches, the gravel must be vibrated or wheel-rolled, and tested for compaction. The upper 2 feet of backfill above the gravel should consist of a compacted fill blanket to the surface. Retaining wall backfill should be capped with a paved surface drain or a concrete slab.

TEMPORARY EXCAVATIONS

Temporary excavations for this project are expected to be minor and generally less than 5 feet. The fill should be trimmed to 1:1 for wall excavations. Where not surcharged by existing footings or structures, the alluvial soils are capable of maintaining vertical

excavations up to 4 feet. Where vertical excavations in the alluvial soils exceed 4 feet in height, the upper portion should be trimmed to 1:1 (45 degrees).

A representative of the geotechnical engineer should be present during grading to see temporary slopes. 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 toward them. No vehicular surcharge should be allowed within three feet of the top of the cut.

CORROSION

The pH of the soils is near neutral and not a factor in corrosion. The chloride content is low and not a factor in design. The sulfate content is negligible and not a factor in concrete design. The resistivity indicates that the soils are corrosive to ferrous metals.

FLOOR SLABS, CONCRETE DECKING AND PAVING

Floor slabs and concrete decking should be cast over undisturbed alluvium or approved compacted fill. In areas of existing fill, the ground should be prepared and the fill placed in conformance with the SITE PREPARATION section of this report.

Slabs should be at least 4 inches thick and reinforced with a minimum of #4 bars on 16 inch centers, each way. Care should be taken to cast the reinforcement near the center of the slab. For interior slabs and slabs with a floor covering, a moisture barrier is recommended. For performance and concrete curing, it recommended that the vapor barrier be 10-mil thick and placed over at least two inches of clean sand and then covered by at least two inches of clean sand. The topping sand is intended to prevent punctures during placement of the reinforcing steel and to and aid in the concrete cure.

Slabs which will be provided with a moisture-sensitive floor covering should be designed to resist moisture in conformance with ACI 302.2R-06 (*Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Material*). Specifications for under-slab vapor retarder/barrier are typically the responsibility of the architect or flooring specialist. We would be happy to assist the architect and/or flooring specialist on their specifications for moisture protection of slabs that are to receive moisture sensitive coverings.

Many agencies require floor slabs be constructed in conformance with the Green Building Code that requires slabs be poured directly on top of the vapor barrier, which is to be underlain by four inches of gravel. Since the vapor barrier is to be placed on the gravel, it is important to exercise care to prevent damaging the moisture barrier during construction. From a geotechnical engineering standpoint, a vapor barrier may be placed over 4 inches of gravel, provided that the vapor barrier is of sufficient strength to resist punctures and tearing. If plastic sheeting is used, this may require a greater than 10 mil thickness. Bentonitic barriers such as Miraclay or Volclay may also be used as long as they conform to the minimum requirements of durability, strength and waterproofing. Vapor barriers should conform to ASTM E 1745 and ACI 302.2R-06 (Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials).

Decking that caps a retaining wall should be provided with a flexible joint to allow for the normal one to two percent deflection of the retaining wall. Decking that does not cap a retaining wall should not be tied to the wall. The space between the wall and the deck will require periodic caulking to prevent moisture intrusion into the retaining wall backfill.

It should be noted that cracking of concrete floor slabs is very common during curing. The cracking occurs because concrete shrinks as it dries. Crack control joints which are commonly used in exterior decking to control such cracking are normally not used in interior slabs. The reinforcement recommended above is intended to reduce cracking and its proper placement is critical to the slab's performance. The minor shrinkage cracks which often

form in interior slabs generally do not present a problem when carpeting, linoleum, or wood floor coverings are used. The slab cracks can, however, lead to surface cracks in brittle floor coverings such as ceramic tile. A mortar bed or slip sheet is recommended between the slab and tile to limit, the potential for cracking.

Slabs should be protected with a polyethylene plastic vapor barrier placed beneath the slab. This barrier is intended to prevent the upward migration of moisture from the subgrade soils through the porous concrete slab. It should be noted that vapor barriers are penetrated by any number of elements including water lines, drain lines, and footings. These barriers are therefore not completely watertight. It is recommended that a surface seal be placed on slabs which will receive a wood floor. The floor installer should be consulted regarding an adequate product.

The paving section should be placed over a 24-inch compacted fill cap. The ground should be prepared and the fill placed in conformance with the SITE PREPARATION section of this report. Trench backfill below paving, should be compacted to 95 percent of the maximum dry density. Irrigation water should be prevented from migrating under paving. The following table shows the recommended pavement sections:

Service	Pavement Thickness (Inches)	Base Course (Inches)
Light Passenger Cars	3	3
Moderate Trucks/Traffic Lanes	3	4
Heavy Trucks/Fire Trucks	4	6

Base course should be compacted to at least 95 percent of the maximum dry density.

DRAINAGE

Control of site drainage is important for the performance of the proposed project. Pad and roof drainage should be collected and transferred to the street or approved location in non-erosive drainage devices. Drainage should not be allowed to pond on the pad or against any foundation or retaining wall. The Building Code specifies that the grade within 10 feet of the foundation be sloped to drain at a 5 percent gradient away from the building. Planters located within retaining wall backfill should be sealed to prevent moisture intrusion into the backfill. Drainage control devices require periodic cleaning, testing and maintenance to remain effective.

Infiltration

Infiltration testing was performed in Test Pit 1, 2, and 3 using a double-ring infiltrometer. The alluvium was pre-soaked prior to performing the tests. The tests were repeated until the infiltration rate was constant and repeatable.

RESULTS OF INFILTRATION TESTING			
	Measured Infiltration		Factored Infiltration
Test Pit	Range (in/hr)	Steady State (in/hr)	Design (in/hr)
Test Pit 1	5.5 - 7.0	6.0	3.0
Test Pit 2	13.8 - 18.0	13.8	3.0
Test Pit 3	6.0 - 6.0	6.0	3.0

Planters, lawn areas, or permeable paving may be feasible for onsite infiltration.

It is the opinion of Irvine Geotechnical that the site is suitable for storm water infiltration. The infiltration of storm water will not result in ground settlement that could affect structures, either on or adjacent to the site. The bearing soils consist of well consolidated alluvium, which is not subject to hydro-collapse and consolidation. The infiltration of storm water will not result in soil saturation that could affect offsite retaining/basement structures. The infiltration systems should be located at least 10 feet from property lines and at least 15 feet from foundations.

WATERPROOFING

Interior and exterior retaining walls are subject to moisture intrusion, seepage, and leakage and should be waterproofed. Waterproofing paints, compounds, or sheeting can be effective if properly installed. Equally important is the use of a subdrain that daylights to the atmosphere. The subdrain should be covered with ¾ inch crushed gravel to help the collection of water. Yard areas above the wall should be sealed or properly drained to prevent moisture contact with the wall or saturation of wall backfill.

PLAN REVIEW

Formal plans ready for submittal to the Building Department should be reviewed by Irvine Geotechnical. Any change in scope of the project may require additional work.

SITE OBSERVATIONS DURING CONSTRUCTION

Please advise Irvine Geotechnical at least 24 hours prior to any required site visit. The agency approved plans and permits should be at the jobsite and available to our representative. The project consultant will perform the observation and post a notice at the jobsite of his visit and findings. This notice should be given to the agency inspector.

During construction, a number of reviews by this office are recommended to verify site geotechnical conditions and conformance with the intent of the recommendations for construction. Although not all possible geotechnical observation and testing services are required by the reviewing agency, the more site reviews requested, the lower the risk of future problems. It is recommended that all grading, foundation, and drainage excavations be seen by a representative of the geotechnical engineer PRIOR to placing fill, forms, pipe, concrete, or steel. Any fill which is placed should be approved, tested, and verified if used for engineering purposes. Temporary excavations should be observed by a representative of the Geotechnical Engineer.

The following site reviews are advised or required. Should the observations reveal any unforeseen hazards, the engineer will recommend treatment.

Pre-construction meeting	Advised
Temporary excavations	Required
Bottom excavation for removals	Required
Subdrains	Required
Compaction of fill	Required
Foundation excavations	Required
Slab subgrade moisture barrier membrane	Advised
Slab subgrade rock placement	Advised
Slab steel placement	Advised
Compaction of utility trench backfill	Advised

Irvine Geotechnical requires at least a 24 hour notice prior to any required site visits. The approved plans and building/grading permits should be on the job and available to the project consultant.

FINAL INSPECTION

Many projects are required by the agency to have final geologic and soils engineering reports upon completion of the grading.

CONSTRUCTION SITE MAINTENANCE

It is the responsibility of the contractor to maintain a safe construction site. When excavations exist on a site, the area should be fenced and warning signs posted. All pile excavations must be properly covered and secured. Soil generated by foundation and

subgrade excavations should be either removed from the site or properly placed as a certified compacted fill. Soil must not be spilled over any descending slope. Workers should not be allowed to enter any unshored trench excavations over five feet deep.

GENERAL CONDITIONS

This report and the exploration are subject to the following NOTICE. Please read the NOTICE carefully, it limits our liability.

NOTICE

In the event of any changes in the design or location of any structure, as outlined in this report, the conclusions and recommendations contained herein may not be considered valid unless the changes are reviewed by us and the conclusions and recommendations are modified or reaffirmed after such review.

The subsurface conditions, excavation characteristics, and geologic structure described herein and shown on the enclosed cross sections have been projected from excavations on the site as indicated and should in no way be construed to reflect any variations that may occur between these excavations or that may result from changes in subsurface conditions.

Fluctuations in the level of groundwater may occur due to variations in rainfall, temperature, irrigation, and other factors not evident at the time of the measurements reported herein. Fluctuations also may occur across the site. High groundwater levels can be extremely hazardous. Saturation of earth materials can cause subsidence or slippage of the site.

If conditions encountered during construction appear to differ from those disclosed herein, notify us immediately so we may consider the need for modifications. Compliance with the design concepts, specifications or recommendations during construction requires the review of the geotechnical engineer during the course of construction.

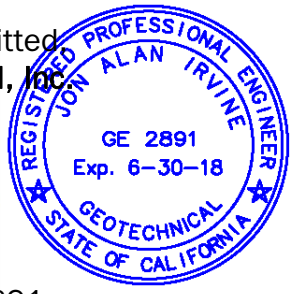
THE EXPLORATION WAS PERFORMED ONLY ON A PORTION OF THE SITE, AND CANNOT BE CONSIDERED AS INDICATIVE OF THE PORTIONS OF THE SITE NOT EXPLORED.

This report is issued and made for the sole use and benefit of the client, is not transferable and is as of the exploration date. Any liability in connection herewith shall not exceed the fee for the exploration. No warranty, expressed or implied, is made or intended in connection with the above exploration or by the furnishing of this report or by any other oral or written statement.

THIS REPORT WAS PREPARED ON THE BASIS OF THE PRELIMINARY DEVELOPMENT PLAN OR CONCEPT FURNISHED. FINAL PLANS SHOULD BE REVIEWED BY THIS OFFICE AS ADDITIONAL GEOTECHNICAL WORK MAY BE REQUIRED.

Irvine Geotechnical appreciates the opportunity to provide our service on this project. Any questions concerning the data or interpretation of this report should be directed to the undersigned.

Respectfully submitted,
Irvine Geotechnical, Inc.



Jon A. Irvine
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Enc: Appendix I - Laboratory Testing by Soil Labworks
Moisture-Density Relationship (Plate A)
Shear Test Diagrams (Plates B-1 & B-2)
Consolidation Diagram (Plate C-1)
Vicinity Map
Regional Geologic Map
Log of Test Pits (2 Pages)
Log of Borings (10 Pages)
Site Plan

xc: (7) Addressee

STATEMENT OF RESPONSIBILITY - SOIL TESTING BY SOIL LABWORKS, LLC

Laboratory testing by Soil Labworks, LLC was performed under the supervision of the undersigned engineer. Irvine Geotechnical and Jon A. Irvine has reviewed referenced laboratory testing report dated June 13, 2016 and the results appear to be reasonable for this area of Monrovia. Irvine Geotechnical and the undersigned engineer concurs with the findings of Soil Labworks, LLC and accepts professional responsibility for utilizing the data.

SOIL LABWORKS LLC

SL16.2204
June 13, 2016

Irvine Geotechnical
145 N. Sierra Madre Boulevard
Suite 1
Pasadena, California 91107

Subject: Laboratory Testing

Site: 123-137 Pomona Ave
Monrovia, California

Job: IRVINE/WINE OF MONTH

Laboratory testing for the subject property was performed by Soil Labworks, LLC., under the supervision of the undersigned Engineer. Samples of the earth materials were obtained from the subject property by personnel of Irvine Geotechnical and transported to the laboratory of Soil Labworks for testing and analysis. The laboratory tests performed are described and results are attached.

Services performed by this facility for the subject property were conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions.

Respectfully Submitted:

SOIL LABWORKS, LLC

JON A. IRVINE
G.E. 2891

REGISTERED PROFESSIONAL ENGINEER
JON ALAN IRVINE
GE 2891
Exp. 6-30-16
GEOTECHNICAL
STATE OF CALIFORNIA

Enc: Appendix

2500 Townsgate Road, Suite E, Westlake Village, California 91361
(805) 370-1338 FAX (805) 371-4693

SOIL LABWORKS LLC

SL16.2204
June 13, 2016

APPENDIX

Laboratory Testing

Sample Retrieval - Drill Rig

Samples of earth materials were obtained at frequent intervals by driving a thick-walled steel sampler conforming to the most recent version of ASTM D 3550-01 (2007) with successive drops of a 140 pound hammer falling 30". The earth material was retained in brass rings of 2.416 inches inside diameter and 1.00 inch height. The central portion of the sample was stored in close-fitting, water-tight containers for transportation to the laboratory.
the laboratory to assist in classification include Atterberg Limits and grain size distribution.

Moisture Density

The field moisture content and dry density were determined for each of the soil samples. The dry density was determined in pounds per cubic foot following ASTM 2937-10. The moisture content was determined as a percentage of the dry soil weight conforming to ASTM 2216-10. The results are presented below in the following table. The percent saturation was calculated on the basis of an estimated specific gravity. Description of earth materials used in this report and shown on the attached Plates were provided by the client.

Test Pit/Boring No.	Sample Depth (Feet)	Soil Type	Dry Density (pcf)	Moisture Content (percent)	Percent Saturation (G_s=2.65)
B1	5	Alluvium	120.3	2.3	17
B1	10	Alluvium	125.6	3.6	30
B1	15	Alluvium	125.6	1.8	15
B1	20	Alluvium	123.4	2.1	17
B1	25	Alluvium	128.6	4.8	45
B1	30	Alluvium	122.9	2.4	18
B2	5	Alluvium	127.8	2.3	21
B2	10	Alluvium	120.4	5.3	38
B2	15	Alluvium	117.8	5.1	33
B2	20	Alluvium	126.0	1.8	15
B2	25	Alluvium	125.3	1.8	15
B2	30	Alluvium	123.6	2.2	17
B3	5	Alluvium	122.6	5.6	42
B3	10	Alluvium	125.0	8.8	73

Moisture Density (continued)

Test Pit/Boring No.	Sample Depth (Feet)	Soil Type	Dry Density (pcf)	Moisture Content (percent)	Percent Saturation (G_s=2.65)
B3	15	Alluvium	116.4	4.7	30
B3	25	Alluvium	116.8	2.7	17
B3	30	Alluvium	114.3	2.6	16
B4	5	Alluvium	117.2	6.0	39
B4	10	Alluvium	108.7	1.7	9
B4	15	Alluvium	111.8	2.0	11
B4	20	Alluvium	117.4	3.3	22
B4	25	Alluvium	117.2	7.1	46
B4	30	Alluvium	118.8	3.3	22
B5	5	Alluvium	120.0	7.0	50
B5	10	Alluvium	127.1	11.5	100
B5	15	Alluvium	115.9	6.6	41
B5	20	Alluvium	116.2	6.8	43
B5	25	Alluvium	113.1	2.3	13
B5	30	Alluvium	108.8	7.1	36

Compaction Character

Compaction tests were performed on bulk samples of the earth materials in accordance with ASTM D1557-12. The results of the tests are provided on the table below and on the "Moisture-Density Relationship", A-Plates. The specific gravity of the alluvium was estimated from the compaction curves.

Test Pit/Boring No.	Sample Depth (Feet)	Soil Type	Maximum Dry Density (pcf)	Optimum Moisture Content (Percent)
B1	0-5	Alluvium	133.3	7.2

Shear Strength

The peak and ultimate shear strengths of the alluvium were determined by performing consolidated and drained direct shear tests in conformance with ASTM D3080/D3080M-11. The tests were performed in a strain-controlled machine manufactured by GeoMatic. The rate of deformation was 0.01 inches per minute. Samples were sheared under varying confining pressures, as shown on the "Shear Test Diagrams," B-Plates. Remolded samples were prepared at 90 percent of the maximum density for shear tests. The remolding

procedure consists of selecting a representative sample from a bulk bag and sieving it through a No. 4 sieve. The moisture content of the material is then determined. A formula is then used to calculate the weight of the material that must fit in a ring when compacted to 90 percent of the maximum density. This calculated amount of material is then weighed out and pounded into a ring until all the material is used and the ring is full. The moisture conditions during testing are shown on the following table and on the B-Plates. The samples indicated as saturated were artificially saturated in the laboratory. All saturated samples were sheared under submerged conditions.

Test Pit/ Boring No.	Sample Depth (Feet)	Dry Density (pcf)	As-Tested Moisture Content (percent)
B4	5	117.2	19.9
B2	10	120.4	17.9
B1*	0-5	120.0	14.7

* Sample remolded to 90 % of the laboratory maximum density.

Consolidation

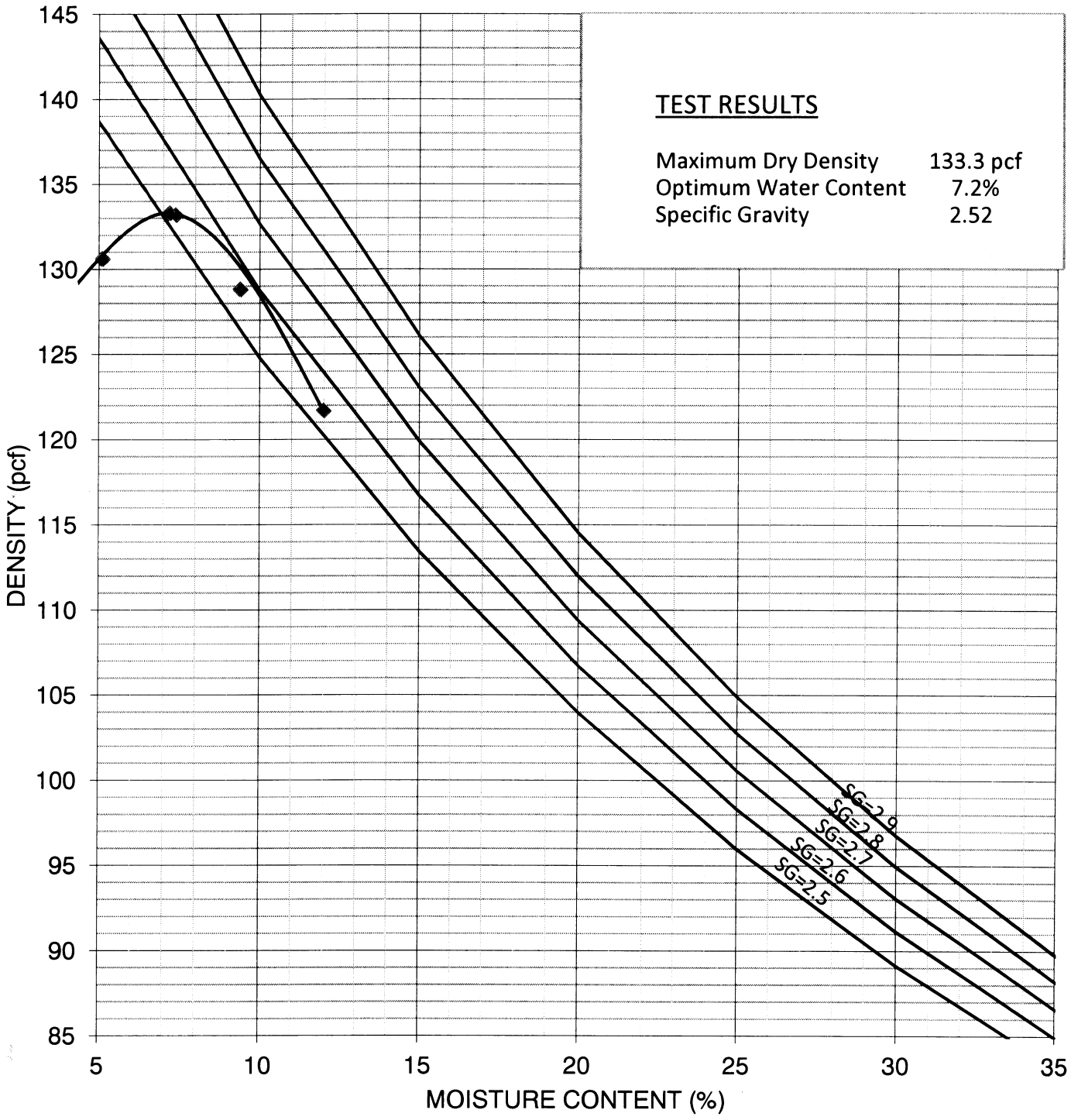
One-dimensional consolidation tests were performed on samples of the alluvium in a consolidometer manufactured by GeoMatic in conformance with ASTM D2435/D2435M-11. The tests were performed on 1-inch high samples retained in brass rings. The samples were initially loaded to approximately ½ of the field over-burden pressure and then unloaded to compensate for the effects of possible disturbance during sampling. Loads were then applied in a geometric progression and resulting deformation recorded. Water was added at a specific load to determine the effect of saturation. The results are plotted on the "Consolidation Test," C-Plates.

SOIL LABWORKS LLC

MOISTURE-DENSITY RELATIONSHIP A-1

JN: **SL16.2204** CONSULTANT: **JAI**
CLIENT: **IRVINE/Wine of Month-123-137 Pomona Ave B1 @ 0-5'**
EARTH MATERIAL: **ALLUVIUM**

NOTE: ASTM Test Method D-1557-12



SOIL LABWORKS LLC

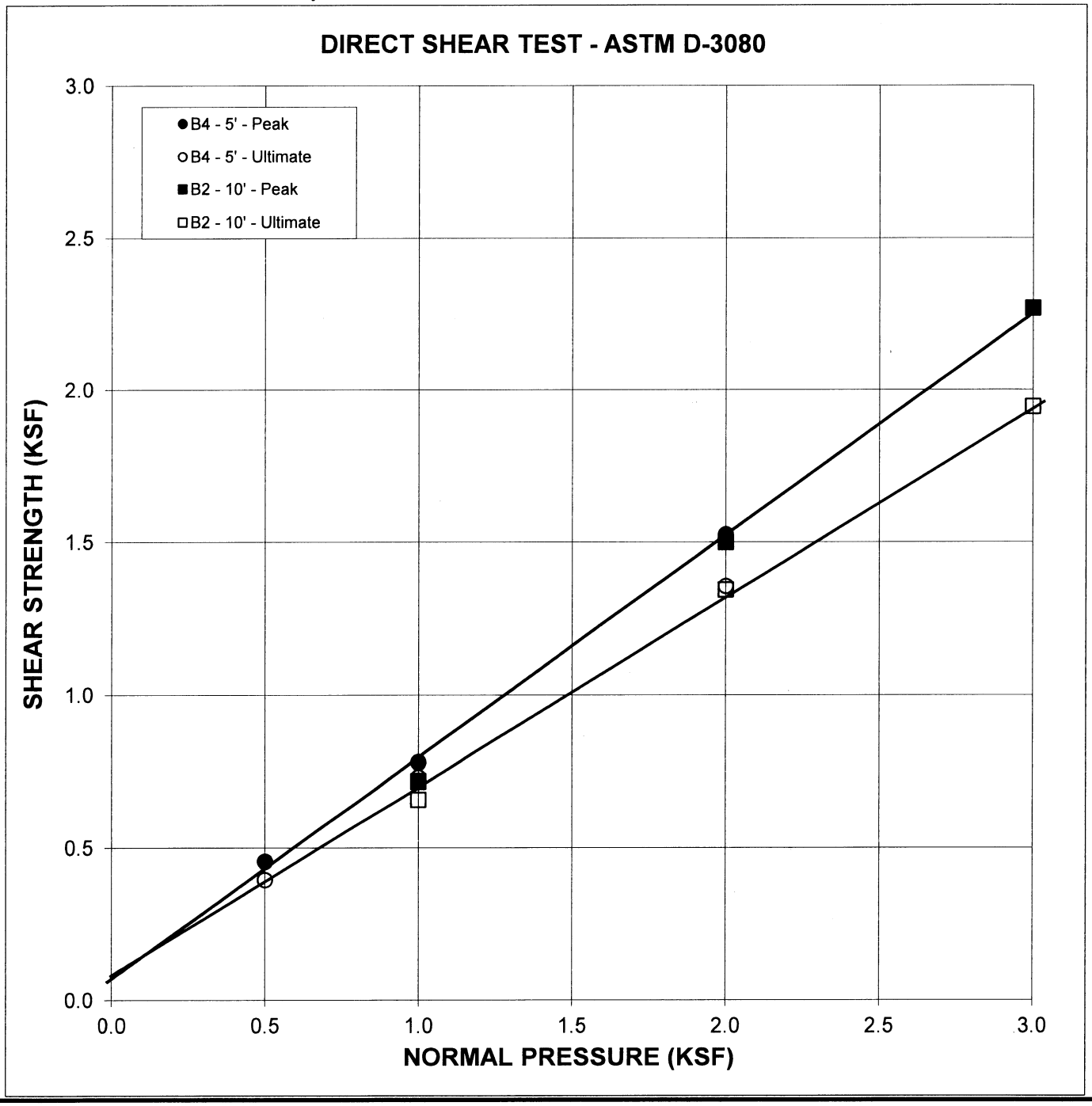
SHEAR DIAGRAM B-1

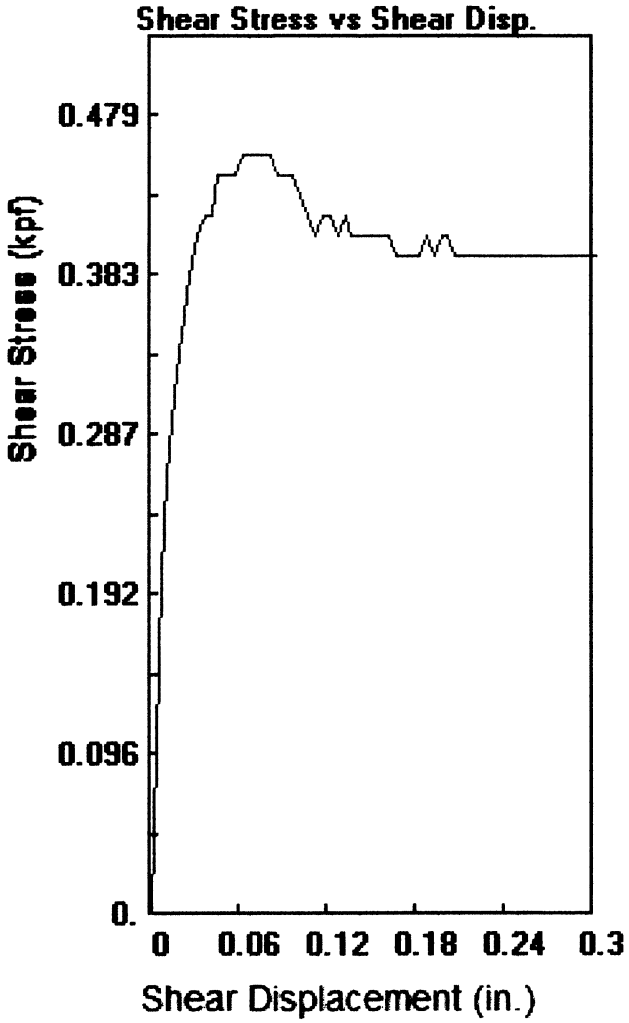
JN: SL16.2204 CONSULTANT JAI
CLIENT: Irvine/Wine of Month-123-137 Pomona Ave

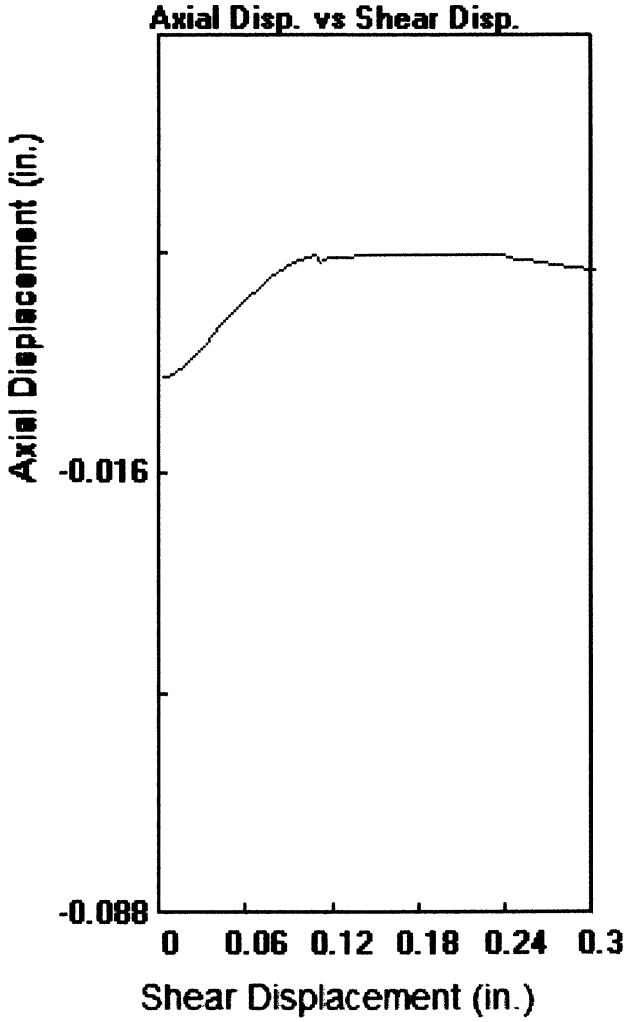
EARTH MATERIAL: ALLUVIUM

	PEAK	ULTIMATE	
Phi Angle	35.5	31	degrees
Cohesion	70	90	psf

Average Moisture Content	18.9%
Average Dry Density (pcf)	118.8
Percent Saturation	100.0%







Parameters

Client: IRVINE/WINE OF MONTH

Location: 123-137 POMONA AVE

Job # 2204

Soil Type:ALLUVIUM

Sample: 1

Technician: BF

Boring: B4

Axial Load: 500 psf

Depth: 5 ft.

Shear Rate: 0.010 in./sec.

File: 2204B455.dat

Distance: 0.30 in.

Stress at Max Def		Stress at Max Disp	
456	0.061	0.296	396

Maximum Load

456 psf

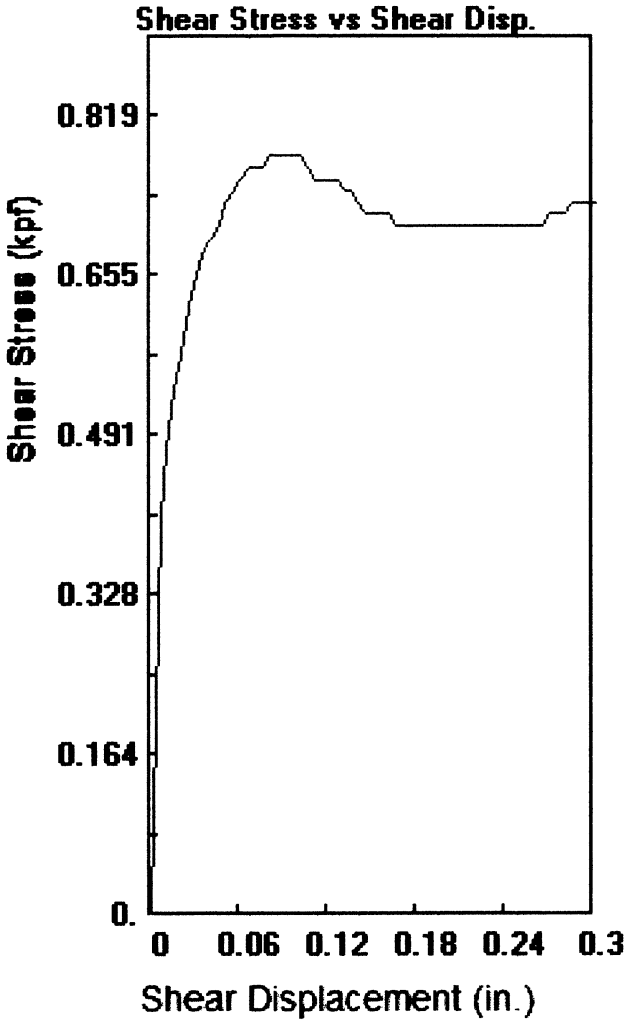
Shear Displacement at maximum Load

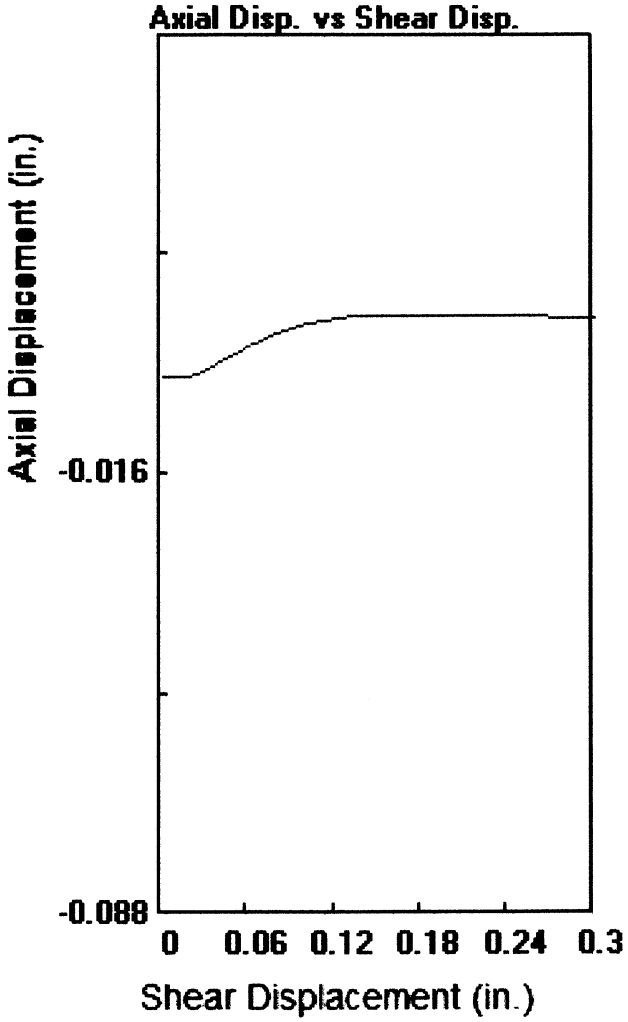
0.0606 in.

Date

6/13/2016

Robertson Geotechnical





Parameters

Client: IRVINE/WINE OF MONTH

Location: 123-137 POMONA AVE

Job # 2204

Soil Type:ALLUVIUM

Sample: 2

Technician: BF

Boring: B4

Axial Load: 1000 psf

Depth: 5 ft.

Shear Rate: 0.010 in./sec.

File: 2204B451.dat

Distance: 0.30 in.

Stress at Max Def
780 0.081

Stress at Max Disp
0.296 732

Maximum Load

780 psf

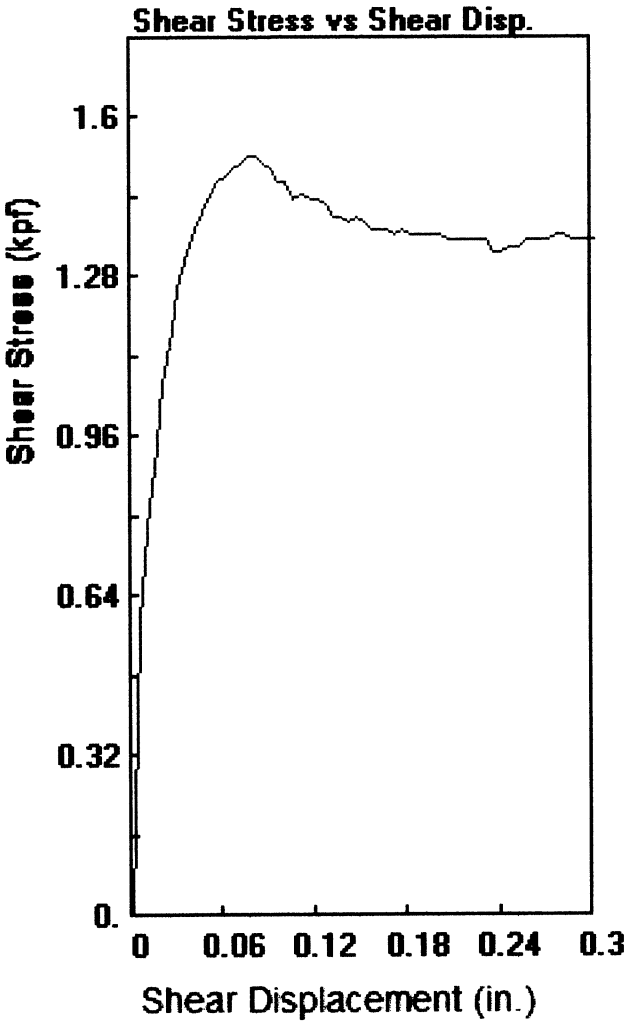
Shear Displacement at maximum Load

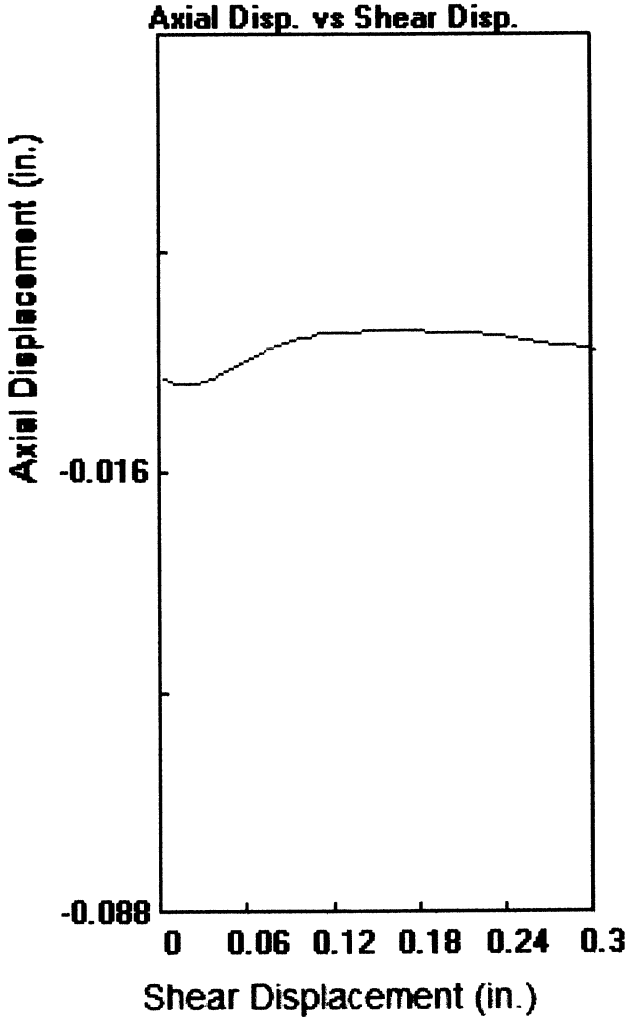
0.0807 in.

Date

6/13/2016

Robertson Geotechnical





Parameters

Client: IRVINE/WINE OF MONTH

Location: 123-137 POMONA AVE

Job # 2204

Soil Type:ALLUVIUM

Sample: 3

Technician: BF

Boring: B4

Axial Load: 2000 psf

Depth: 5 ft.

Shear Rate: 0.010 in./sec.

File: 2204B452.dat

Distance: 0.30 in.

Stress at Max Def
1524 0.076

Stress at Max Disp
0.296 1356

Maximum Load

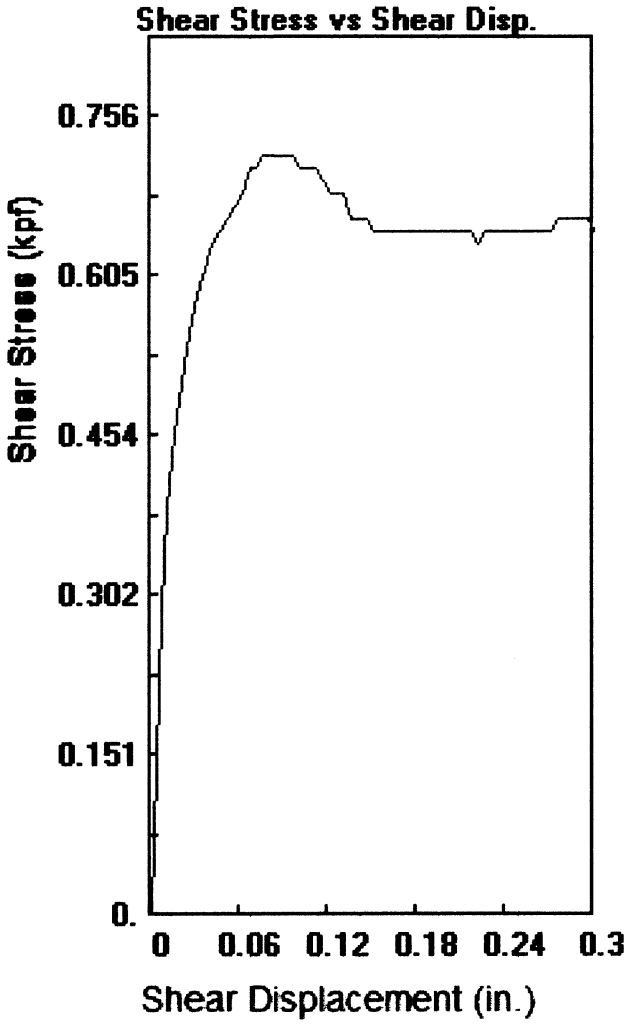
1524 psf

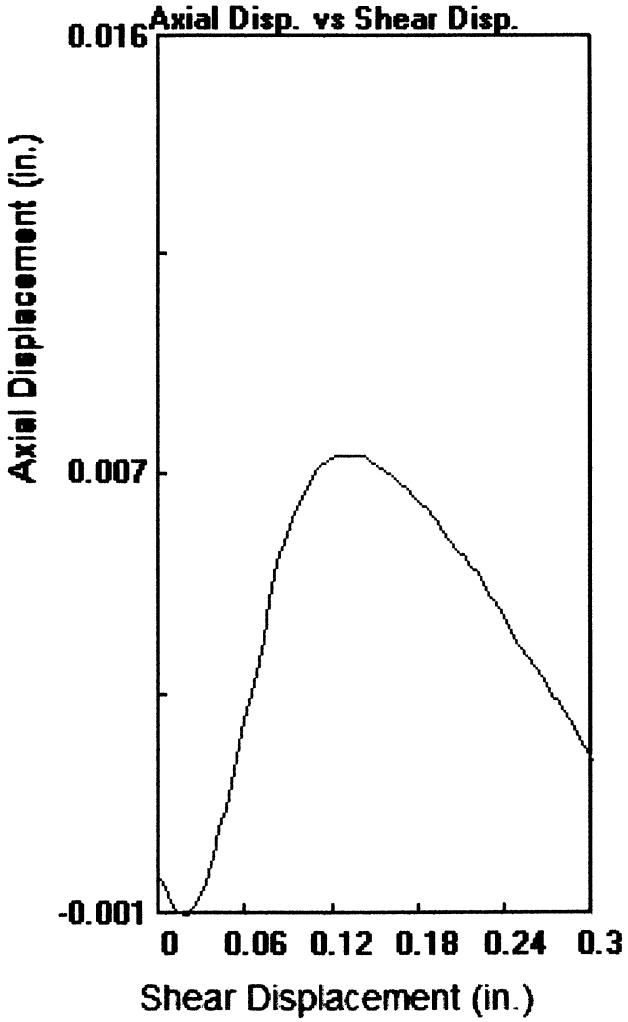
Shear Displacement at maximum Load

0.0757 in.

Date
6/13/2016

Robertson Geotechnical





Parameters

Client: IRVINE/WINE OF MONTH

Location: 123-137 POMONA AVE

Job # 2204

Soil Type:ALLUVIUM

Sample: 1

Technician: BF

Boring: B2

Axial Load: 1000 psf

Depth: 10 ft.

Shear Rate: 0.010 in./sec.

File: 2204B2101.dat

Distance: 0.30 in.

Stress at Max Def
720 0.076

Stress at Max Disp
0.296 660

Maximum Load

720 psf

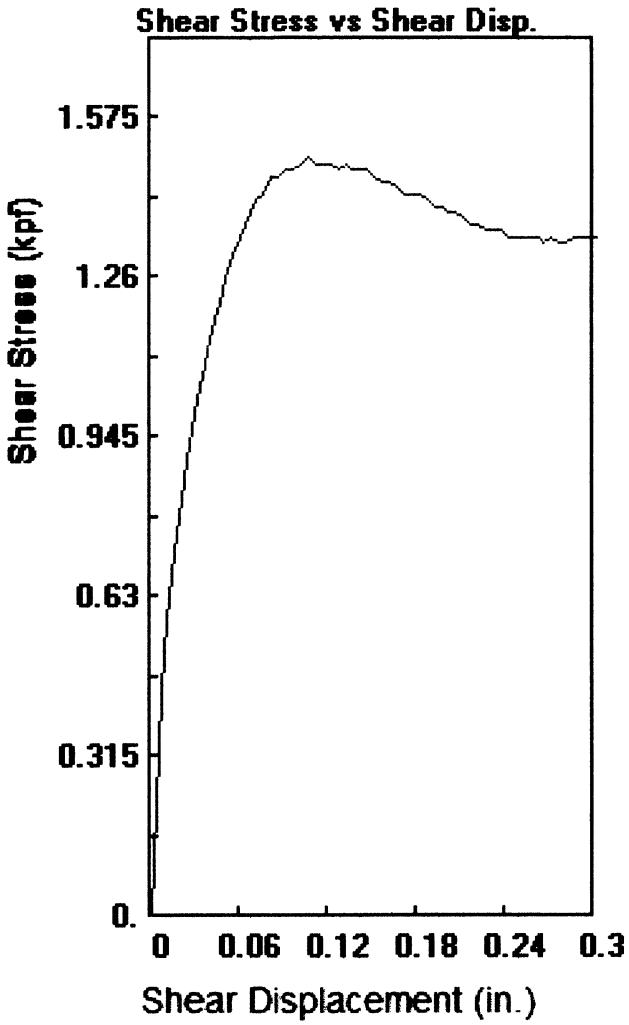
Shear Displacement at maximum Load

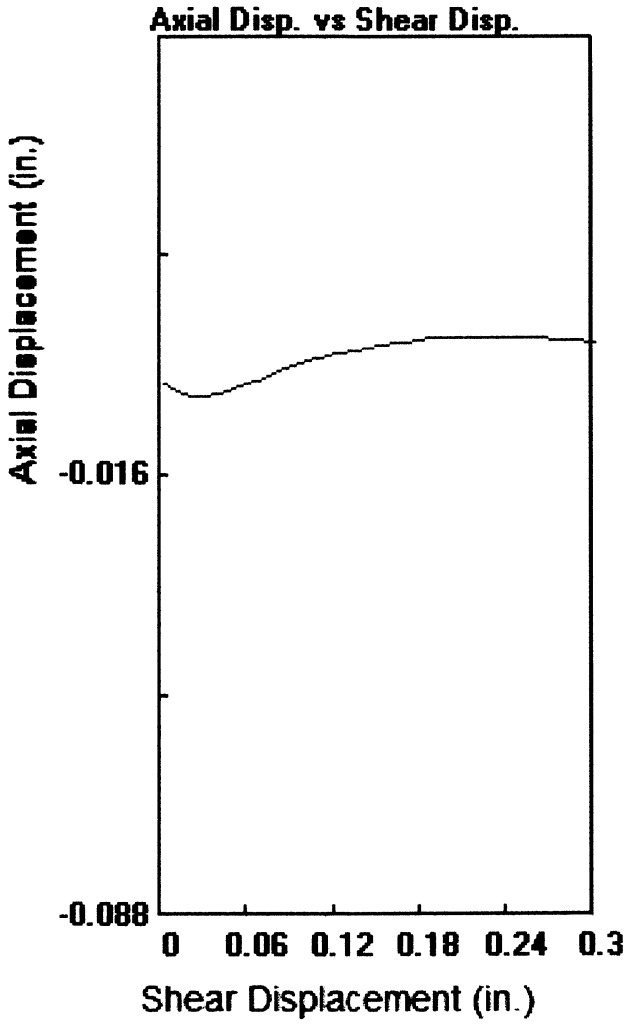
0.0756 in.

Date

6/13/2016

Soil Labworks





Parameters

Client: IRVINE/WINE OF MONTH

Location: 123-137 POMONA AVE

Job # 2204

Soil Type:ALLUVIUM

Sample: 2

Technician: BF

Boring: B2

Axial Load: 2000 psf

Depth: 10 ft.

Shear Rate: 0.010 in./sec.

File: 2204B2102.dat

Distance: 0.30 in.

Stress at Max Def
1500 0.106

Stress at Max Disp
0.296 1344

Maximum Load

1500 psf

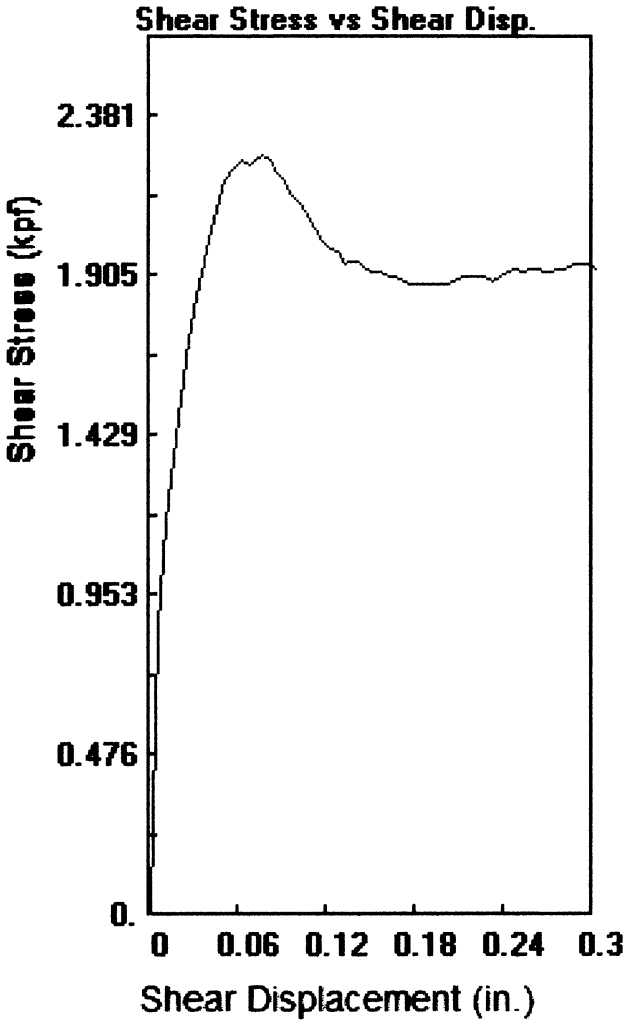
Shear Displacement at maximum Load

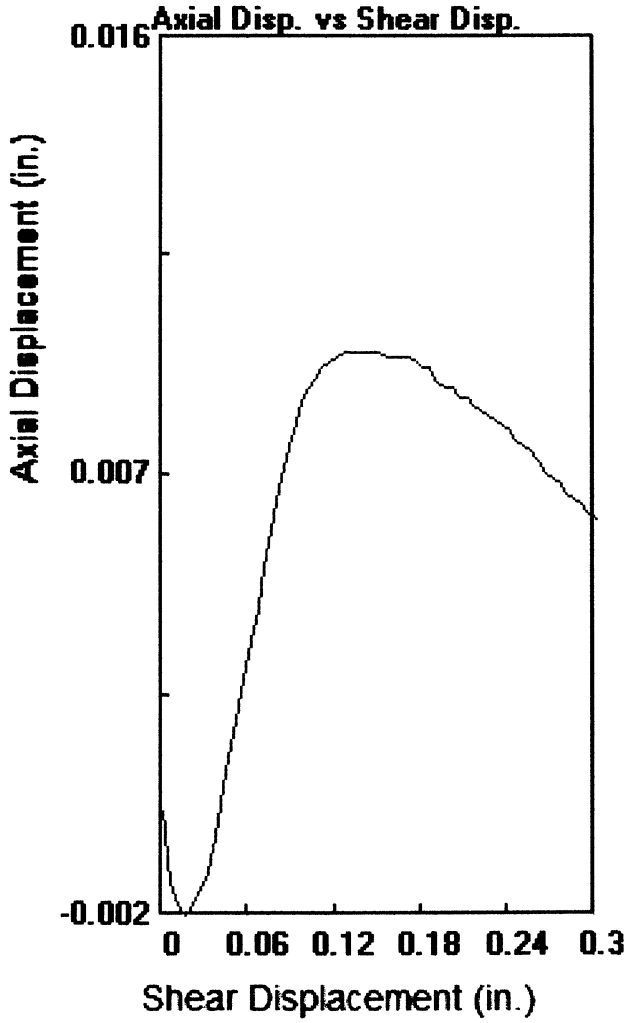
0.1055 in.

Date

6/13/2016

Robertson Geotechnical





Parameters

Client: IRVINE/WINE OF MONTH

Location: 123-137 POMONA AVE

Job # 2204

Soil Type:ALLUVIUM

Sample: 3

Technician: BF

Boring: B2

Axial Load: 3000 psf

Depth: 10 ft.

Shear Rate: 0.010 in./sec.

File: 2204B2103.dat

Distance: 0.30 in.

Stress at Max Def
2268 0.076

Stress at Max Disp
0.296 1944

Maximum Load

2268 psf

Shear Displacement at maximum Load

0.0756 in.

Date

6/13/2016

Soil Labworks

SOIL LABWORKS LLC

SHEAR DIAGRAM B-2

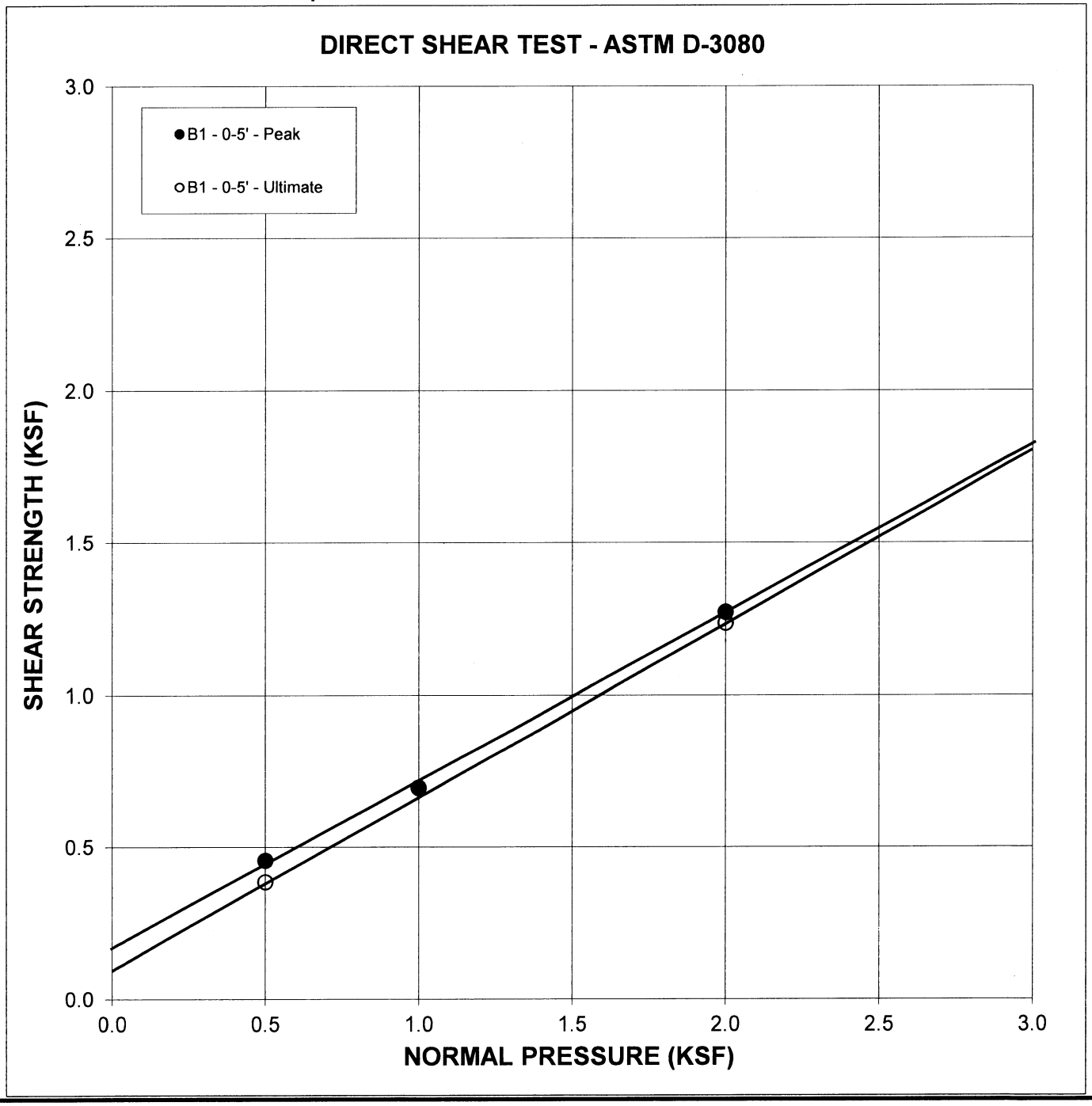
JN: SL16.2204 CONSULTANT JAI
CLIENT: Irvine/Wine of Month-123-137 Pomona Ave

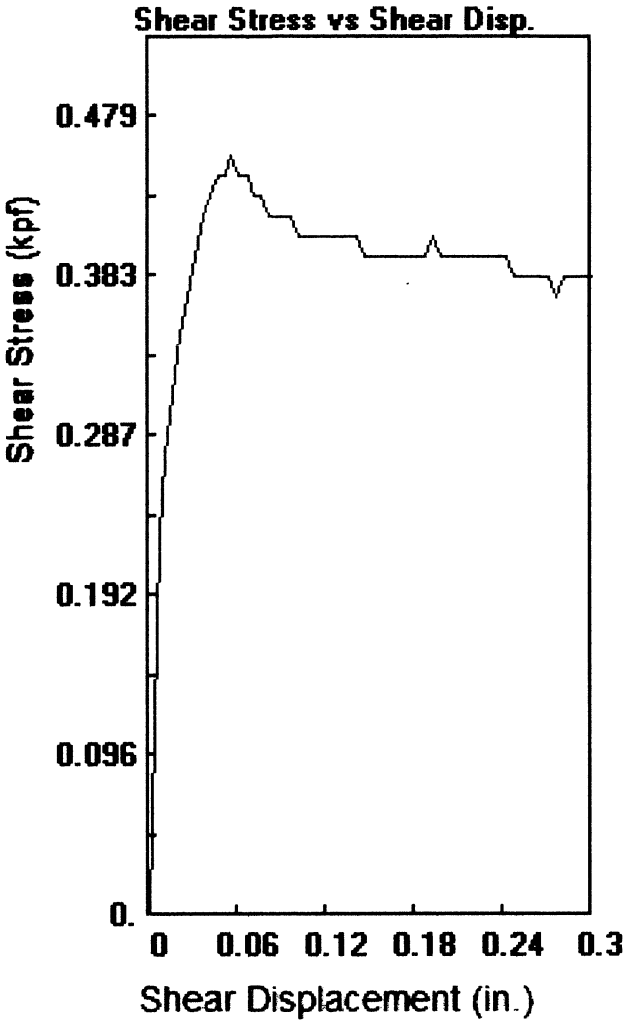
EARTH MATERIAL: ALLUVIUM

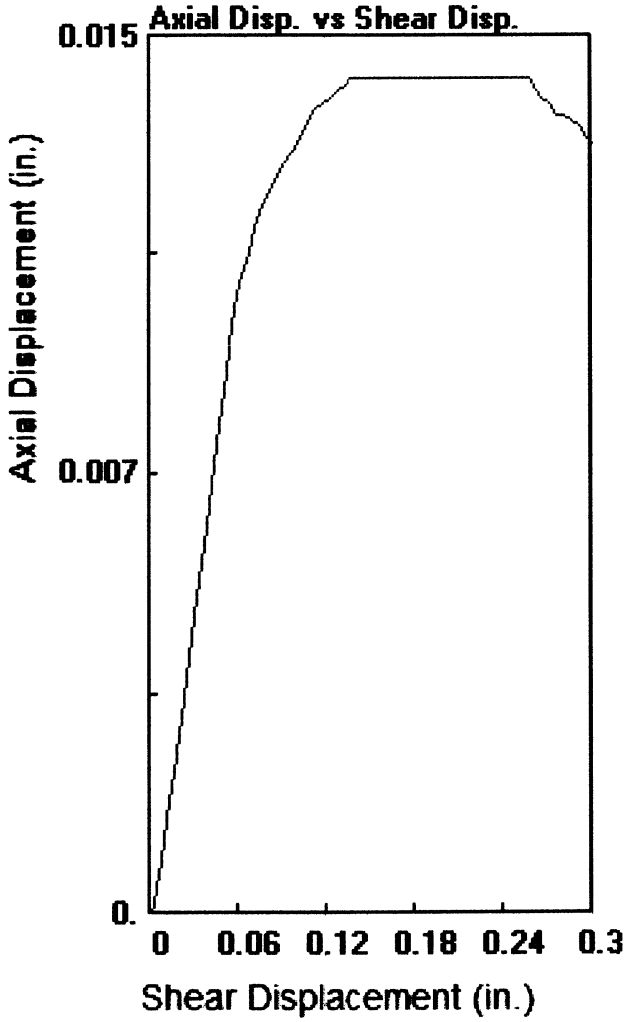
Sample remolded to 90 % of the laboratory maximum density

	PEAK	ULTIMATE	
Phi Angle	28.5	29	degrees
Cohesion	175	100	psf

Average Moisture Content	14.7%
Average Dry Density (pcf)	120.0
Percent Saturation	100.0%







Parameters

Client: IRVINE/WINE OF MONTH

Location: 123-137 POMONA AVE

Job # 2204

Soil Type:ALLUVIUM

Sample: 1

Technician: BF

Boring: B1

Axial Load: 500 psf

Depth: 0-5 ft.

Shear Rate: 0.010 in./sec.

File: 2204B10-55RMLD.dat

Distance: 0.30 in.

Stress at Max Def
456 0.055

Stress at Max Disp
0.296 384

Maximum Load

456 psf

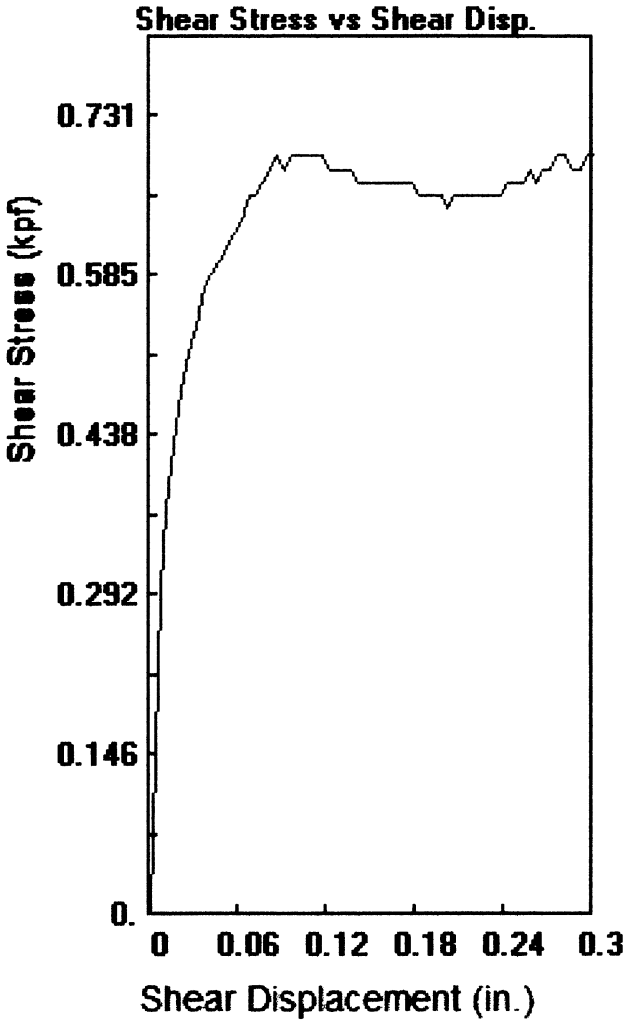
Shear Displacement at maximum Load

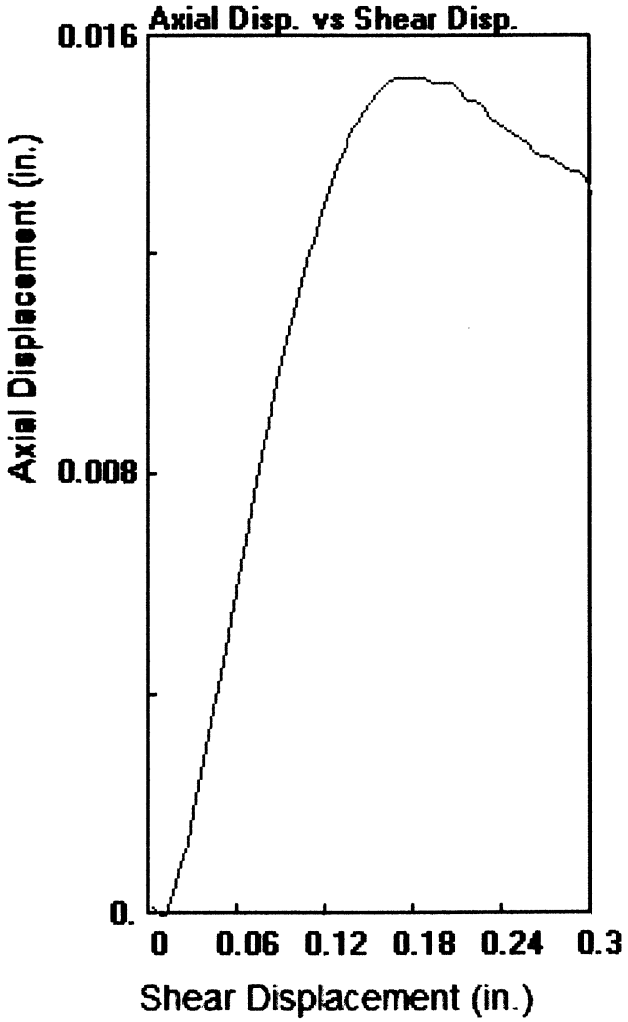
0.0554 in.

Date

6/13/2016

Soil Labworks





Parameters

Client: IRVINE/WINE OF MONTH

Location: 123-137 POMONA AVE

Job # 2204

Soil Type:ALLUVIUM

Sample: 2

Technician: BF

Boring: B1

Axial Load: 1000 psf

Depth: 0-5 ft.

Shear Rate: 0.010 in./sec.

File: 2204B10-51RMLD.dat

Distance: 0.30 in.

Stress at Max Def
696 0.086

Stress at Max Disp
0.296 696

Maximum Load

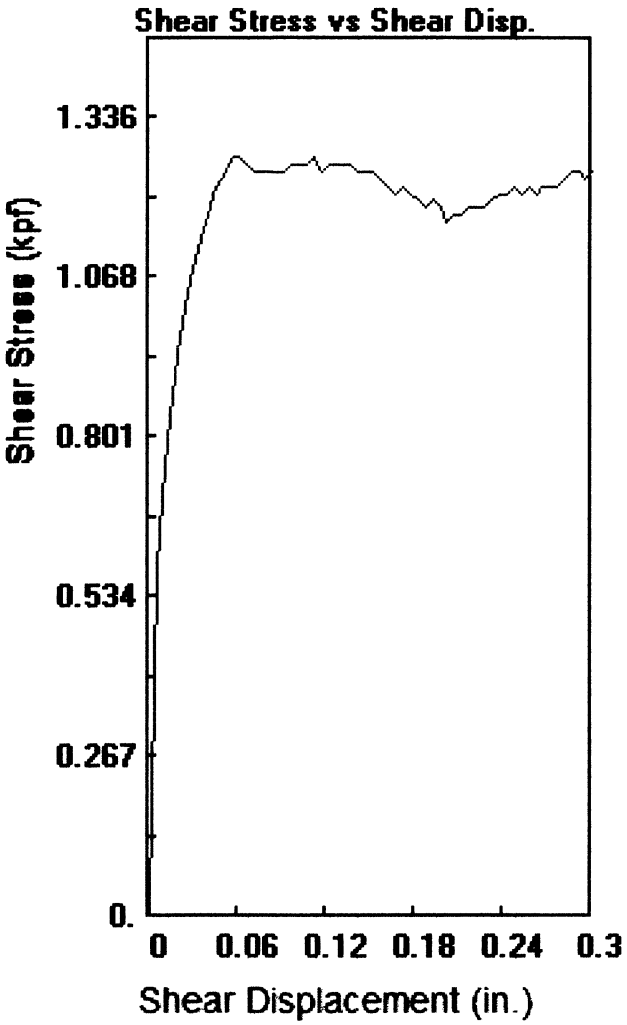
696 psf

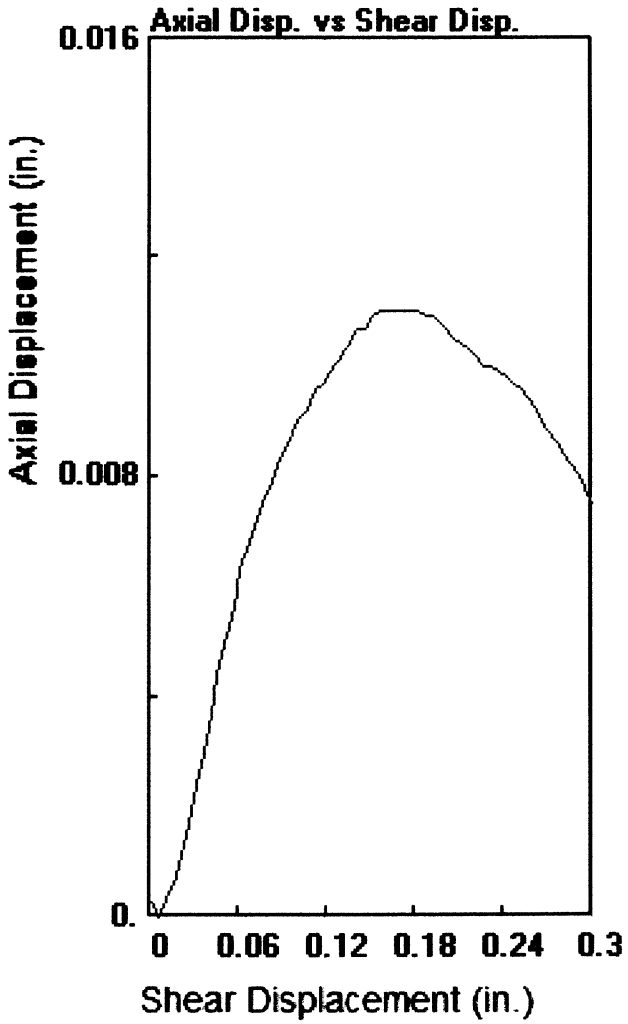
Shear Displacement at maximum Load

0.0857 in.

Date
6/13/2016

Soil Labworks





Parameters

Client: IRVINE/WINE OF MONTH

Location: 123-137 POMONA AVE

Job # 2204

Soil Type:ALLUVIUM

Sample: 3

Technician: BF

Boring: B1

Axial Load: 2000 psf

Depth: 0-5 ft.

Shear Rate: 0.010 in./sec.

File: 2204B10-52RMLD.dat

Distance: 0.30 in.

Stress at Max Def
1272 0.056

Stress at Max Disp
0.295 1236

Maximum Load

1272 psf

Shear Displacement at maximum Load

0.0555 in.

Date

6/13/2016

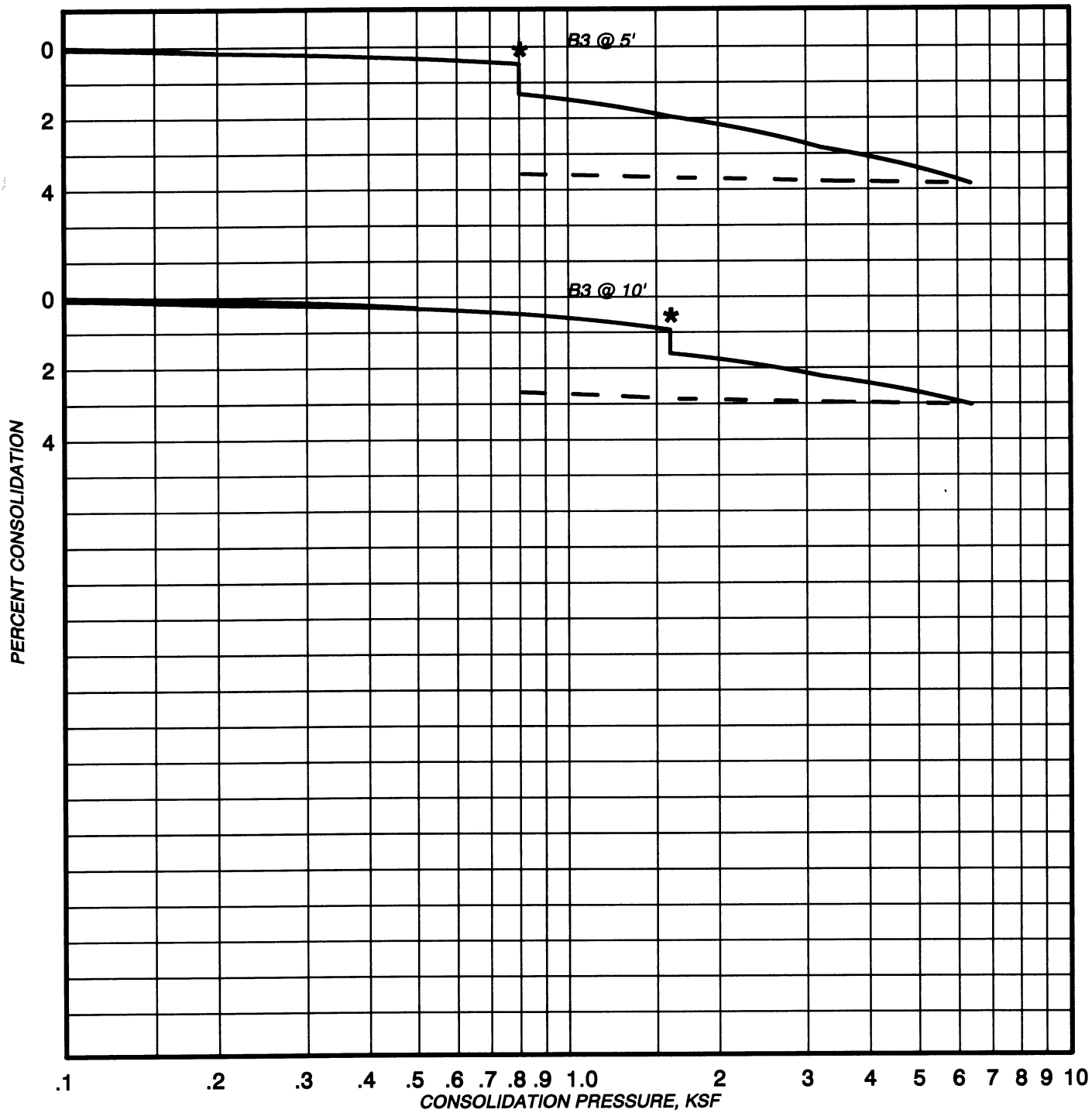
Soil Labworks

CONSOLIDATION TEST

PROJECT: 2204 IRVINE/WINE OF MONTH-123-137 POMONA AVENUE

SAMPLES: B3 @ 5'; B3 @ 10'

ALLUVIUM



* Water Added

PLATE: C-1

TOPO! map printed on 07/08/16 from "IRVINE.tpo"

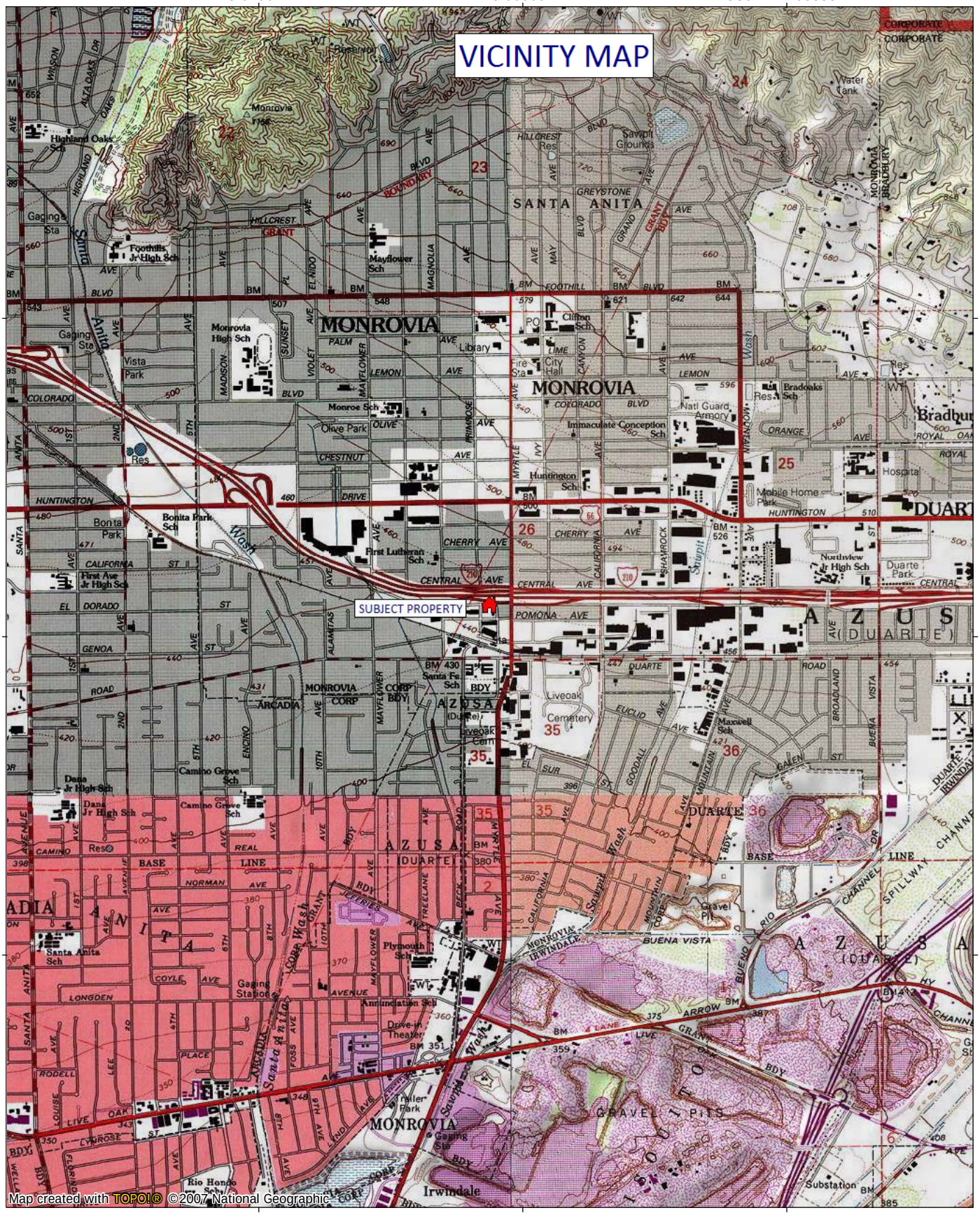
118.01667° W | 118.00000° W | WGS84 117.98333° W

34.15000° N

34.13333° N

34.11667° N

VICINITY MAP



118.01667° W | 118.00000° W | WGS84 117.98333° W

NATIONAL GEOGRAPHIC

0 .5 1 MILES

1000 0 1000 2000 3000 4000 5000 FEET

1 .5 0 1 KILOMETERS

1000 0 1000 METERS

TN ★ MN

12°

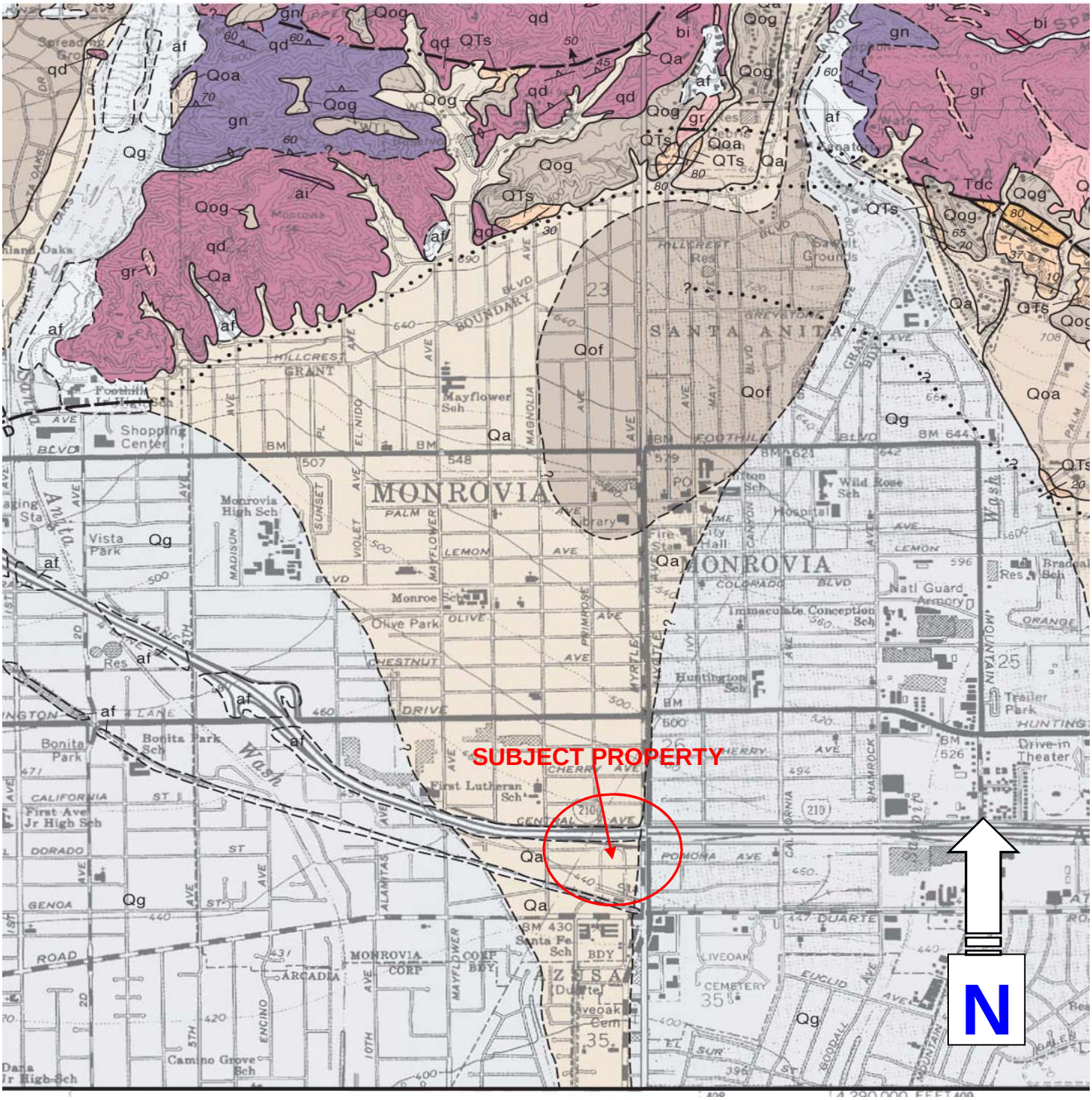
07/08/16

IRVINE GEOTECHNICAL Inc

REGIONAL GEOLOGIC MAP

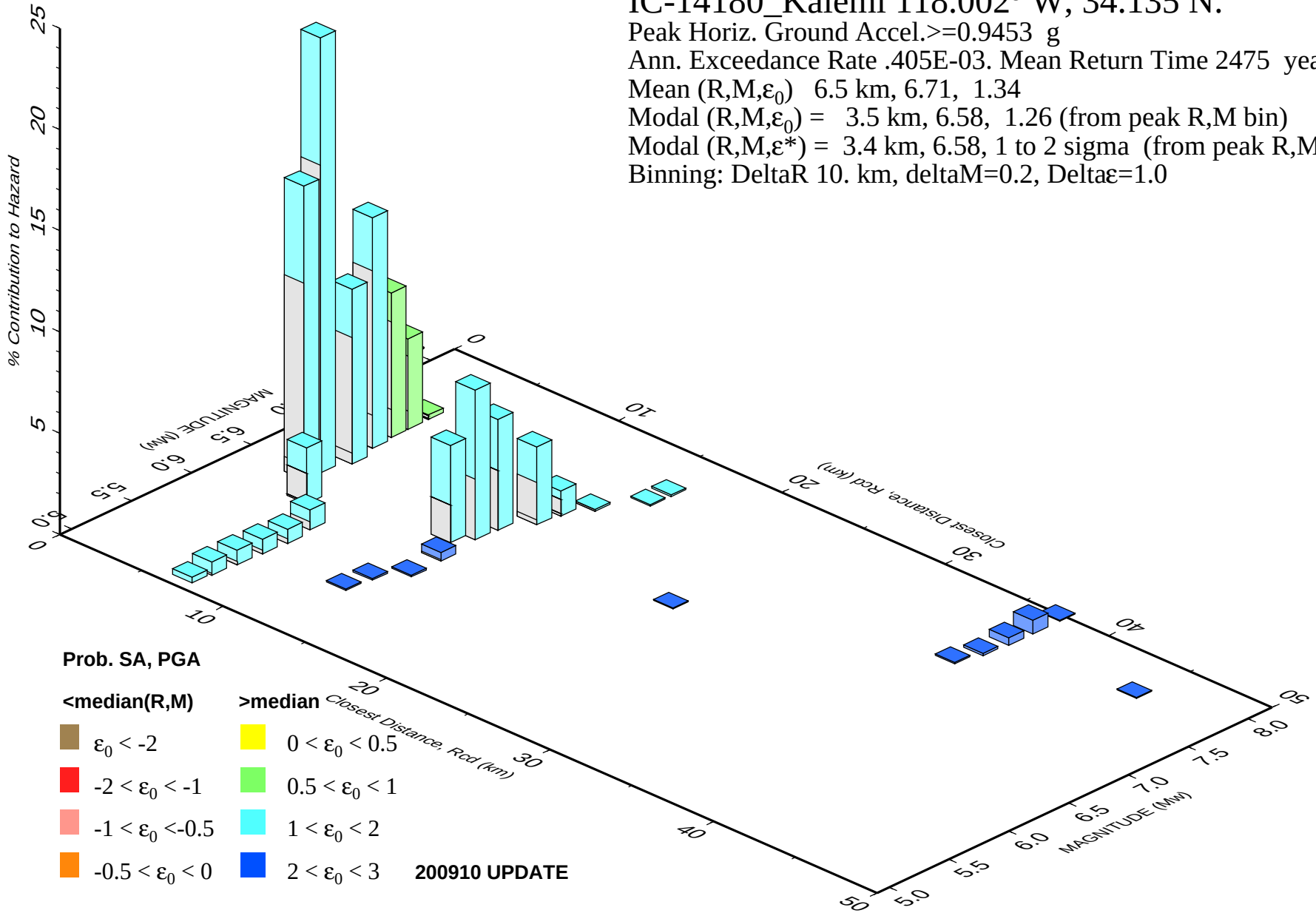
IC: **14180** CONSULT: **JAI**
CLIENT **WINE OF THE MONTH CLUB**
SCALE: **1" = 1,000'**

REF: Geologic Map of the Mount Wilson and Azusa Quadrangles, Los Angeles County, California, T.W. Dibblee, 1998



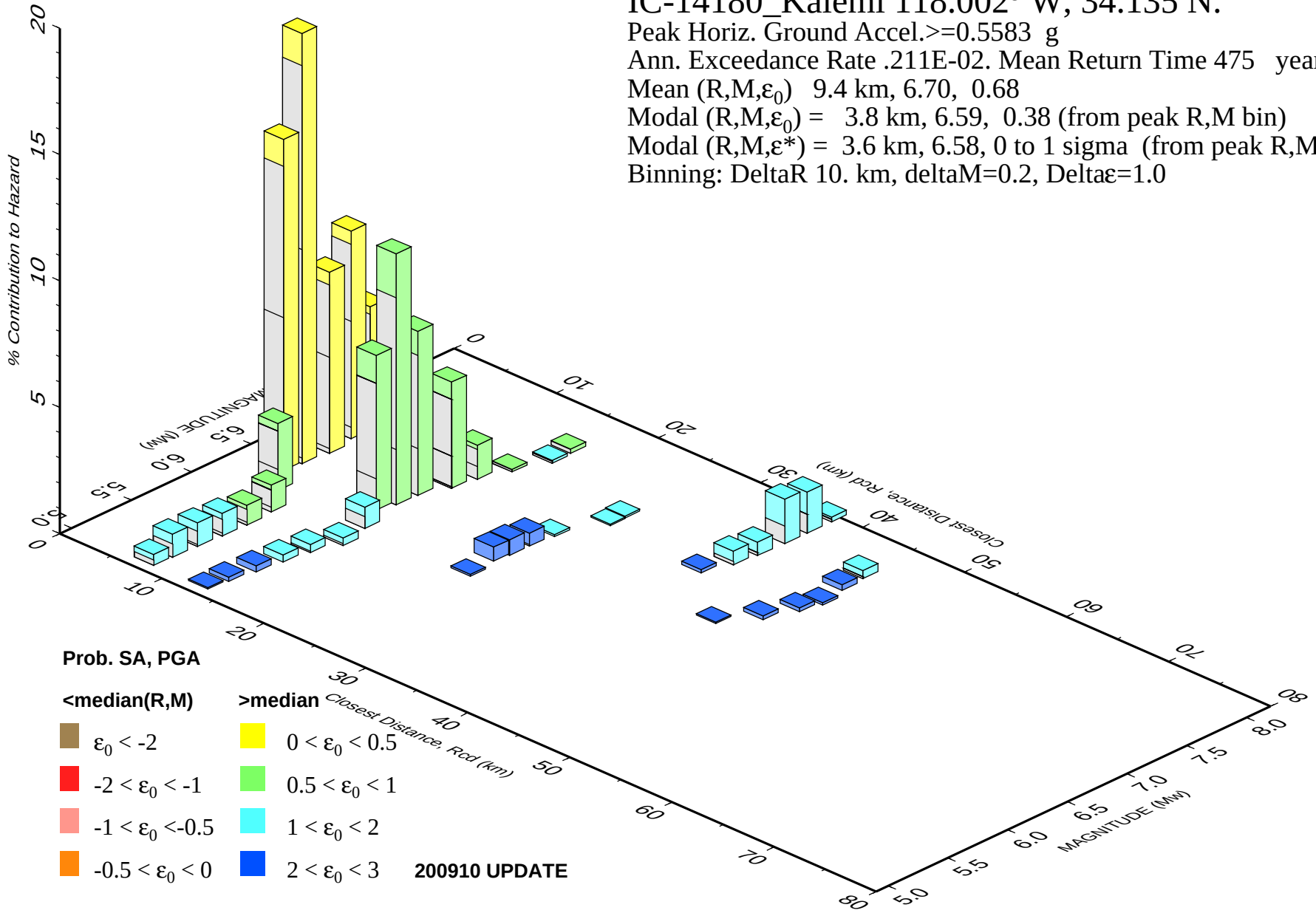
PSH Deaggregation on NEHRP CD soil
IC-14180_Kalemi 118.002º W, 34.135 N.

Peak Horiz. Ground Accel.>=0.9453 g
Ann. Exceedance Rate .405E-03. Mean Return Time 2475 years
Mean (R,M,ε_0) 6.5 km, 6.71, 1.34
Modal (R,M,ε_0) = 3.5 km, 6.58, 1.26 (from peak R,M bin)
Modal (R,M,ε*) = 3.4 km, 6.58, 1 to 2 sigma (from peak R,M,ε bin)
Binning: DeltaR 10. km, deltaM=0.2, Deltaε=1.0



PSH Deaggregation on NEHRP CD soil
IC-14180_Kalemi 118.002º W, 34.135 N.

Peak Horiz. Ground Accel.>=0.5583 g
Ann. Exceedance Rate .211E-02. Mean Return Time 475 years
Mean (R,M,ε_0) 9.4 km, 6.70, 0.68
Modal (R,M,ε_0) = 3.8 km, 6.59, 0.38 (from peak R,M bin)
Modal (R,M,ε*) = 3.6 km, 6.58, 0 to 1 sigma (from peak R,M,ε bin)
Binning: DeltaR 10. km, deltaM=0.2, Deltaε=1.0



LOG OF TEST PITS

IRVINE GEOTECHNICAL Inc

PROJECT	IC16XXX CLIENT NAME HERE
DRILL DATE	12/10/2016
LOG DATE	12/10/2016
LOGGED BY	LOGGER
DRILL TYPE	Hand Labor
DIAMETER	30 Inches

SURFACE ELEVATION 451 feet
DRILLING CONTRACTOR Mike's Excavating Service
SURFACE CONDITIONS West side of property near Boring 1

TEST PIT 1

Sample Type	Sample Depth (feet)	Blows per foot	Moisture (%)	Dry Unit Weight (pcf)	Saturation (%)	USCS Code	Elevation (feet)	Depth (feet)	Lithologic Description
						SM	451.0	0	**FILL:** Silty Sand, grey brown, slightly moist, slightly dense, contains construction debris, asphalt, concrete roof tiles, wood
							450.0	1	
							449.0	2	**ALLUVIUM:** Silty Gravelly Sand, grey-brown, slightly moist, medium dense
						SW	448.0	3	
							447.0	4	**END TP1 @4 ':** No Water; No Caving; Fill to 2' Hand-dug to 4 feet

SURFACE ELEVATION 454 feet
DRILLING CONTRACTOR Mike's Excavating Service
SURFACE CONDITIONS 4" Lawn, North of Building 2

TEST PIT 2

Sample Type	Sample Depth (feet)	Blows per foot	Moisture (%)	Dry Unit Weight (pcf)	Saturation (%)	USCS Code	Elevation (feet)	Depth (feet)	Lithologic Description
						SM	454.0	0	**FILL:** Silty Sand, grey-brown, dry to slightly moist, medium dense, some construction debris
							453.0	1	
						SM/SW	452.0	2	**ALLUVIUM:** Silty Gravelly Sand, grey brown, slightly moist, medium dense.
							451.0	3	**END TP2 @ 2':** No Water; No Caving; Fill to 2'

LOG OF TEST PITS

IRVINE GEOTECHNICAL Inc

PROJECT	IC14180 KALEMKIARIAN
DRILL DATE	6/31/2016
LOG DATE	6/31/2016
LOGGED BY	PT
DRILL TYPE	Hand Labor
DIAMETER	30 Inches

SURFACE ELEVATION 456 feet
DRILLING CONTRACTOR Mike's Excavating Service
SURFACE CONDITIONS In Planter east of building two

TEST PIT 3

Sample Type	Sample Depth (feet)	Blows per foot	Moisture (%)	Dry Unit Weight (pcf)	Saturation (%)	USCS Code	Elevation (feet)	Depth (feet)	Lithologic Description
						SM	456.0	0	**FILL:** Silty Sand, grey-brown, slightly moist, medium dense, some construction debris
							455.0	1	
						SM			**ALLUVIUM:** Silty Sand, grey brown, slightly moist, medium dense
							454.0	2	
							453.0	3	

END TP3 @ 3': No Water; No Caving; Fill to 2'

Hand-dug to 3 feet

LOG OF BORINGS

IRVINE GEOTECHNICAL Inc

PROJECT	IC 14180 WINE OF MONTH CLUB
DRILL DATE	6/1/2016
LOG DATE	6/1/2016
LOGGED BY	PT
DRILL TYPE	Hollow-Stem
DIAMETER	8 Inches

SURFACE ELEVATION	447 feet
DRILLING CONTRACTOR	Choice Drilling
SURFACE CONDITIONS	Dirt

BORING 1

Sample Type	Sample Depth (feet)	Blows per foot	Moisture (%)	Dry Unit Weight (pcf)	Saturation (%)	USCS Code	Elevation (feet)	Depth (feet)	Lithologic Description
						ML	447.0	0	**FILL:** Silty Sand, brown, slightly moist, medium dense, contains asphalt, concrete roof materials and wood
							446.0	1	
							445.0	2	
						SM	444.0	3	**ALLUVIUM:** Silty Sand, brown, slightly moist, medium dense
							443.0	4	
R	5	8/9/11	2.3	120.3	17	SW	442.0	5	Gravelly Sand, yellow brown, slightly moist, medium dense, contains gravel over 1 inch
							441.0	6	
							440.0	7	
							439.0	8	
							438.0	9	
R	10	13/17/36	3.6	125.6	30	SM	437.0	10	Silty Sand, grey brown, slightly moist, dense
							436.0	11	
							435.0	12	
							434.0	13	
							433.0	14	
R	15	7/12/15	1.8	125.6	15	SM	432.0	15	
							431.0	16	
							430.0	17	
							429.0	18	
							428.0	19	Silty Sand, yellow brown, slightly moist, dense
R	20	4/5/9	2.1	123.4	17	SM	427.0	20	

IRVINE GEOTECHNICAL Inc

LOG OF BORINGS

PROJECT IC 14180 WINE OF MONTH CLUB
DRILL DATE 6/1/2016
LOG DATE 6/1/2016
LOGGED BY PT
DRILL TYPE Hollow-Stem
DIAMETER 8 Inches

SURFACE ELEVATION 447 feet
DRILLING CONTRACTOR Choice Drilling
SURFACE CONDITIONS DIRT

BORING 1

Sample Type	Sample Depth (feet)	Blows per foot	Moisture (%)	Dry Unit Weight (pcf)	Saturation (%)	USCS Code	Elevation (feet)	Depth (feet)	Lithologic Description
R	20	4/5/9	2.0	123.4	17	SM	426.0	20	Silty Sand, yellow-brown, slightly moist, dense
							425.0	21	
							424.0	22	
							423.0	23	
							422.0	24	
R	25	17/21/35	4.8	128.6	45	SM	421.0	25	Silty Sand with Gravel, yellow-brown to orange-brown, moist, dense
							420.0	26	
							419.0	27	
							418.0	28	
							417.0	29	Gravelly Sand, yellow brown, slightly moist, medium dense
R	30	9/17/29	2.4	122.9	18	SW	416.0	30	**END B1@ 30':** No Water, No Caving, Fill to 2.0 feet

LOG OF BORINGS

IRVINE GEOTECHNICAL Inc

PROJECT	IC 14180 WINE OF MONTH CLUB
DRILL DATE	6/1/2016
LOG DATE	6/1/2016
LOGGED BY	PT
DRILL TYPE	Hollow-Stem
DIAMETER	8 INCHES

SURFACE ELEVATION 449 feet
DRILLING CONTRACTOR Choice Drilling
SURFACE CONDITIONS Asphalt Parking Lot 4" No base

BORING 2

Sample Type	Sample Depth (feet)	Blows per foot	Moisture (%)	Dry Unit Weight (pcf)	Saturation (%)	USCS Code	Elevation (feet)	Depth (feet)	Lithologic Description
						ML	449.0	0	**FILL:** Sandy Silt, brown, slightly moist, firm
							448.0	1	
							447.0	2	
						SM	446.0	3	**ALLUVIUM:** Silty Sand, brown, slightly moist, medium dense
							445.0	4	
R	5	7/11/15	2.3	127.8	21	SW	444.0	5	Gravelly Sand, yellow brown, slightly moist, medium dense
							443.0	6	
							442.0	7	
							441.0	8	
							440.0	9	
R	10	9/15/25	5.3	120.4	38	SM	439.0	10	Silty Sand, with Gravel, yellow grey-brown, moist, medium dense to dense
							438.0	11	
							437.0	12	
							436.0	13	
							435.0	14	
R	15	11/12/15	5.1	117.8	33	SM	434.0	15	Silty Sand with some fine Gravel, orange-brown, slightly moist, medium dense
							433.0	16	
							432.0	17	
							431.0	18	
							430.0	19	Gravelly Sand, yellow grey-brown, slightly moist, medium dense
R	20.0	4/8/16	1.8	126.0	15	GW	429.0	20	

IRVINE GEOTECHNICAL Inc

LOG OF BORINGS

PROJECT IC 14180 WINE OF MONTH CLUB
DRILL DATE 6/1/2016
LOG DATE 6/1/2016
LOGGED BY PT
DRILL TYPE Hollow-Stem
DIAMETER 8 INCHES

SURFACE ELEVATION 449 feet
DRILLING CONTRACTOR Choice Drilling
SURFACE CONDITIONS Asphalt Parking Lot 4" No Base

BORING 2

Sample Type	Sample Depth (feet)	Blows per foot	Moisture (%)	Dry Unit Weight (pcf)	Saturation (%)	USCS Code	Elevation (feet)	Depth (feet)	Lithologic Description
R	20	4/8/16	1.8	126.0	15.2	SW	428.0	20	Gravelly Sand, yellow grey-brown, slightly moist, medium dense to dense
							427.0	21	
							426.0	22	
							425.0	23	
							424.0	24	
R	25	13/19/21	1.8	125.3	15	SW	423.0	25	Gravelly Sand, yellow-brown, slightly moist, medium dense to dense
							422.0	26	
							421.0	27	
							420.0	28	
							419.0	29	
R	30	18/42/50-5"	2.2	123.6	17.1	SW	418.0	30	**END B2 @ 30':** No caving, no groundwater,

LOG OF BORINGS

IRVINE GEOTECHNICAL Inc

PROJECT	IC 14180 WINE OF MONTH CLUB
DRILL DATE	6/1/2016
LOG DATE	6/1/2016
LOGGED BY	PT
DRILL TYPE	Hollow-Stem
DIAMETER	8 Inches

SURFACE ELEVATION	447 feet
DRILLING CONTRACTOR	Choice Drilling
SURFACE CONDITIONS	Dirt

BORING 3

Sample Type	Sample Depth (feet)	Blows per foot	Moisture (%)	Dry Unit Weight (pcf)	Saturation (%)	USCS Code	Elevation (feet)	Depth (feet)	Lithologic Description
							447.0	0	**FILL:** Sandy Silt, brown, slightly moist to moist, firm, gravel up to 3/4"
						ML	446.0	1	
							445.0	2	
							444.0	3	**ALLUVIUM:** Silty Sand, brown, slightly moist to moist, medium dense to dense
							443.0	4	
R	5	3/5/8	5.6	122.6	42	SM	442.0	5	
							441.0	6	
							440.0	7	
							439.0	8	
							438.0	9	
SPT	10	7/7/9	8.8	125.0	73	SW	437.0	10	Gravelly Sand, yellow brown, very moist, medium dense
							436.0	11	
							435.0	12	
							434.0	13	
							433.0	14	
SPT	15	9/9/15	4.7	116.4	30	SW	432.0	15	Gravelly Sand, yellow brown, slightly moist, medium dense to dense
							431.0	16	
							430.0	17	
							429.0	18	
							428.0	19	
SPT	20	28/28/31				SW	427.0	20	No Sample Cobble on tip

LOG OF BORINGS

IRVINE GEOTECHNICAL Inc

PROJECT	IC 14180 WINE OF MONTH CLUB
DRILL DATE	6/1/2016
LOG DATE	6/1/2016
LOGGED BY	PT
DRILL TYPE	Hollow-Stem
DIAMETER	8 Inches

SURFACE ELEVATION	447 feet
DRILLING CONTRACTOR	Choice Drilling
SURFACE CONDITIONS	Asphalt 7" With Base

BORING 3

Sample Type	Sample Depth (feet)	Blows per foot	Moisture (%)	Dry Unit Weight (pcf)	Saturation (%)	USCS Code	Elevation (feet)	Depth (feet)	Lithologic Description
R	20	25/28/31				SW	426.0	20	No Sample Cobble on tip
							425.0	21	
							424.0	22	
							423.0	23	
							422.0	24	
R	25	42/38/27	2.7	116.8	17	SW	421.0	25	Gravelly Sand, slightly moist, very dense, cobbles
							420.0	26	
							419.0	27	
							418.0	28	
							417.0	29	
R	30	21/39/50-5"	2.6	114.3	16	SW	416.0	30	**END B3 @ 30':** No Water, No Caving

LOG OF BORINGS

IRVINE GEOTECHNICAL Inc

PROJECT	IC 14180 WINE OF MONTH CLUB
DRILL DATE	6/1/2016
LOG DATE	6/1/2016
LOGGED BY	PT
DRILL TYPE	Hollow-Stem
DIAMETER	8 Inches

SURFACE ELEVATION	450 feet
DRILLING CONTRACTOR	Choice Drilling
SURFACE CONDITIONS	Dirt

BORING 4

Sample Type	Sample Depth (feet)	Blows per foot	Moisture (%)	Dry Unit Weight (pcf)	Saturation (%)	USCS Code	Elevation (feet)	Depth (feet)	Lithologic Description
						ML	450.0	0	**FILL:** Sandy Silt, brown, slightly moist to moist, firm, gravel up to 3/4"
							449.0	1	
							448.0	2	**ALLUVIUM:** Silty Sand, brown, slightly moist to moist, medium dense
							447.0	3	
							446.0	4	
R	5	7/11/15	6.0	117.2	39	SM	445.0	5	
							444.0	6	
							443.0	7	
							442.0	8	
							441.0	9	
R	10	7/8/13	1.7	108.7	9	SM	440.0	10	Silty Sand, yellow brown, slightly moist, dense
							439.0	11	
							438.0	12	
							437.0	13	
							436.0	14	
R	15	8/12/19	2.0	111.8	11	SW	435.0	15	Gravelly Sand, yellow-brown, slightly moist, medium dense, contains gravel greater than 1"
							434.0	16	
							433.0	17	
							432.0	18	
							431.0	19	
R	20	9/10/18	3.3	117.4	22	SW	430.0	20	

IRVINE GEOTECHNICAL Inc

LOG OF BORINGS

PROJECT IC 14180 WINE OF MONTH CLUB
DRILL DATE 6/1/2016
LOG DATE 6/1/2016
LOGGED BY PT
DRILL TYPE Hollow-Stem
DIAMETER 8 INCHES

SURFACE ELEVATION 450 feet
DRILLING CONTRACTOR Choice Drilling
SURFACE CONDITIONS Asphalt Parking Lot 7" With Base

BORING 4

Sample Type	Sample Depth (feet)	Blows per foot	Moisture (%)	Dry Unit Weight (pcf)	Saturation (%)	USCS Code	Elevation (feet)	Depth (feet)	Lithologic Description
R	20	9/10/18	3.3	117.4	22	SW	430.0	20	Gravelly Sand, grey brown, slightly moist, medium dense
							429.0	21	
							428.0	22	
							427.0	23	
							426.0	24	
R	25	9/11/21	7.1	117.2	46	SW	425.0	25	Gravelly Sand, yellow brown, moist, medium dense to dense
							424.0	26	
							423.0	27	
							422.0	28	
							421.0	29	
R	30	8/12/15	3.3	118.8	22	SW	420.0	30	**END B4 @ 30':** No Caving, No Groundwater, Fill to 18 inches

LOG OF BORINGS

IRVINE GEOTECHNICAL Inc

PROJECT	IC 14180 WINE OF MONTH CLUB
DRILL DATE	6/1/2016
LOG DATE	6/1/2016
LOGGED BY	PT
DRILL TYPE	Hollow-Stem
DIAMETER	8 Inches

SURFACE ELEVATION 448 feet
DRILLING CONTRACTOR CHOICE DRILLING
SURFACE CONDITIONS ASPHALT PARKING LOT 4.5" BASE AND ASPHALT

BORING 5

Sample Type	Sample Depth (feet)	Blows per foot	Moisture (%)	Dry Unit Weight (pcf)	Saturation (%)	USCS Code	Elevation (feet)	Depth (feet)	Lithologic Description
							447.0	0	**FILL:** Sandy Silt, brown, slightly moist to moist, firm, gravel up to 3/4"
						ML	446.0	1	
							445.0	2	
							444.0	3	**ALLUVIUM:** Silty Sand, brown, slightly moist to moist, medium dense
							443.0	4	
R	5	8/7/7	6.6	115.9	41	SM	442.0	5	
							441.0	6	
							440.0	7	
							439.0	8	
							438.0	9	
R	10	6/8/7	11.5	127.1	100	SM	437.0	10	
							436.0	11	Silty Sand with Clay binder, brown, medium dense, saturated
							435.0	12	
							434.0	13	
							433.0	14	
R	15	5/6/8	6.6	115.9	41	SW	432.0	15	Gravelly Sand, yellow brown, medium dense, moist
							431.0	16	
							430.0	17	
							429.0	18	
							428.0	19	
R	20	7/9/11	6.8	116.2	43	SW	427.0	20	

LOG OF BORINGS

IRVINE GEOTECHNICAL Inc

PROJECT	IC 14180 WINE OF MONTH CLUB
DRILL DATE	6/1/2016
LOG DATE	6/1/2016
LOGGED BY	PT
DRILL TYPE	Hollow-Stem
DIAMETER	8 INCHES

SURFACE ELEVATION 448 feet
DRILLING CONTRACTOR Choice Drilling
SURFACE CONDITIONS ASPHALT PARKING LOT, 4.5" ASPHALT AND BASE

BORING 5

Sample Type	Sample Depth (feet)	Blows per foot	Moisture (%)	Dry Unit Weight (pcf)	Saturation (%)	USCS Code	Elevation (feet)	Depth (feet)	Lithologic Description
R	20	7/9/11	6.8	116.2	43	SW	428.0	20	Gravelly Sand, yellow brown, slightly moist, dense
							427.0	21	
							426.0	22	
							425.0	23	
							424.0	24	
R	25	9/11/21	2.3	113.1	13	SW	423.0	25	Gravelly Sand, light brown, slightly moist, dense
							422.0	26	
							421.0	27	
							420.0	28	
							419.0	29	
R	30	7/8/12	7.1	108.8	36	SW	418.0	30	**END B5 @ 30':** No Caving, No Groundwater, Fill to 2 feet

SITE PLAN

PROJECT: IC14180 - WOTM CLUB

CONSULTANT: JAI | SCALE: 1" = 20'

IRVINE GEOTECHNICAL Inc

LEGEND

TP1 --- NUMBER & LOCATION OF TEST PIT

B1 NUMBER & LOCATION OF BORING

EVERGREEN AVE.

POMONA AVE.

PARCEL 1

PARCEL 2

PARCEL 3
PARKING EASEMENT

EXISTING BUILDING 1
±9,491 S.F.

EXISTING BUILDING 2
±10,484 S.F.

EXISTING BUILDING
(TO BE REMODELED)

PROPOSED BUILDING

PROPOSED COURTYARD

PROPOSED LOADING DOCK

PROPOSED TRASH ENCLOSURE

PROPOSED DRIVEWAY

PROPOSED PLANTERS

PROPOSED SIGN

ASPHALT PAVEMENT

CONC SIDEWALK

CONC GUTTER

CONC WALKWAY

BLDG LINE OVERHEAD

TRASH AREA

TELEPHONE POLE LINE, CONDUITES EASEMENT

N.A.P.

TP1 TP2 TP3

B1 B2 B3 B4 B5