Appendix C
Jefferson Square Specific Plan Amendment
Geotechnical Engineering Investigation

GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED JEFFERSON SQUARE
JEFFERSON STREET AND FRED WARING DRIVE
LA QUINTA, CALIFORNIA

PROJECT NO. 112-07036
MAY 25, 2007

PREPARED FOR:

REGENCY CENTERS, INC.
36 EXECUTIVE PARK, SUITE 100
IRVINE, CALIFORNIA 92614

ATTENTION: MR. THOMAS MIDDLETON

PREPARED BY:

KRAZAN & ASSOCIATES, INC.
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Krazan & ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION

May 25, 2007 KA Project No. 112-07036

Mr. Thomas Middleton
Regency Centers, Inc.
36 Executive Park, Suite 100
Irvine, CA 92614

RE: Geotechnical Engineering Investigation
Proposed Jefferson Square (Phase I)
Jefferson Street and Fred Waring Drive
La Quinta, California

Dear Mr. Middleton:

In accordance with your request and authorization, we have completed our Geotechnical Engineering Investigation for the above-referenced site. This report summarizes the results of our field investigation, laboratory testing and engineering analyses. Based on the data obtained, our understanding of the proposed project and our engineering analyses, it is our opinion that it is feasible to develop the site as planned.

As noted in our report, Krazan & Associates should be retained to review project plans and specifications prior to the start of construction, and to observe and test earthwork and foundation construction. Observation and testing services should also be performed by our field staff during construction activities which will allow us to compare conditions exposed during construction with those encountered during our investigation and to present supplemental recommendations if warranted by different site conditions.

If you have any questions regarding the information or recommendations presented in our report, or if we may be of further assistance, please contact our Ontario, California office at (909) 974-4400.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

James Kellogg

James M. Kellogg, PE
Regional Manager

cc: Addressee (4)

GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED JEFFERSON SQUARE
LA QUINTA, CALIFORNIA

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GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED JEFFERSON SQUARE
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LA QUINTA, CALIFORNIA

INTRODUCTION

This report presents the results of our Geotechnical Engineering Investigation for the proposed Jefferson Square shopping center (Phase I) in La Quinta, California. Discussions regarding site conditions are presented herein, together with conclusions and recommendations pertaining to site preparation, grading, utility trench backfill, drainage and landscaping, foundations, concrete floor slabs and exterior concrete flatwork, retaining walls, soil corrosivity, and pavement design.

A Vicinity Map showing the location of the site is presented on Figure 1. A Site Plan showing the approximate boring locations is presented on Figure 2. Descriptions of the field and laboratory investigations, boring log legend and boring logs are presented in Appendix A. Appendices B and C contain guides for general earthwork and flexible pavement specifications. If conflicts in the text of the report occur with the general specifications in the appendices, the recommendations in the text of the report have precedence.

PURPOSE AND SCOPE OF SERVICES

This geotechnical investigation was conducted to evaluate subsurface soil and groundwater conditions at the project site. Engineering analysis of the field and laboratory data was performed for the purpose of developing and providing geotechnical recommendations for use in the preliminary design and construction of the earthwork, foundation and pavement aspects of the project.

Our scope of services was outlined in our proposal dated May 1, 2007 (KA Proposal No. P112049-07) and included the following:

- A site reconnaissance by a member of our engineering staff to evaluate the surface conditions at the project site.
- Review of selected published geologic maps, reports and literature pertinent to the site and surrounding area.

- A field investigation consisting of drilling sixteen (16) borings to depths of 11 to 51 feet below the existing ground surface for evaluation of the subsurface conditions at the project site.

- Performing laboratory tests on representative soil samples obtained from the borings to evaluate the physical and index properties of the subsurface soils.

- Evaluation of the data obtained from the investigation and engineering analyses of the data with respect to the geotechnical aspects of structural design, and site grading and paving.

- Preparation of this report summarizing the results, conclusions, recommendations, and findings of our investigation.

Environmental services, such as chemical analyses of soil and groundwater for possible environmental contaminates, and geologic study were not in our scope of services.

PROPOSED CONSTRUCTION

We understand that design of the proposed development is currently underway; structural load information and other final details pertaining to the structures are therefore unavailable. On a preliminary basis, it is understood that the project will include construction of a retail shopping center named Jefferson Square (Phase I). The shopping center will consist of a market, a drug store, two shops and two pads ranging in footprints from 4,500 to 13,900 square feet. The buildings are planned to be of one story wood frame/stucco or masonry construction with concrete slab-on-grade floors. Building loads are anticipated to be relatively light. Onsite parking and landscaping are also planned for the development.

Mass grading of the majority of the site is expected to entail minor to moderate cuts and fills from existing grades to establish building pads and to provide for surface drainage of the site.

In the event these structural or grading details are inconsistent with the final design criteria, we should be notified so that we can evaluate the potential impacts of the changes on the recommendations presented in this report and provide an updated report as necessary.

SITE LOCATION AND SITE DESCRIPTION

The site is rectangular in shape and encompasses approximately 8.44 acres. The site is located on the southwest corner of Jefferson Street and Fred Waring Drive in the City of La Quinta, Riverside County, California (see Vicinity Map, Figure 1). The site is predominately surrounded by residential developments and park/golf course lands.

Presently, the site is vacant with sparse weeds and shrubs. A scoured wash is located at the northeast corner of the site with a relief of approximately 4 to 6 feet. The remaining site is relatively flat with no major changes in grade. The average elevation of the site is approximately 60 feet above mean sea level.

SITE INVESTIGATION

GEOLOGIC SETTING

Regionally the proposed site is situated at the base of the San Jacinto and Santa Rosa Mountains within the northwest portion of the Coachella Valley of Southern California. Near-surface material consists of alluvial fan deposits of sand, silt, gravel, and cobbles derived from erosion of the Mesozoic granitic and metamorphic rocks of the adjacent San Jacinto Mountains. A significant feature within this geomorphic province is the Salton Trough. The Salton Trough is a large northwest-trending structural depression that extends from the San Gorgonio Pass to the Gulf of California. A large portion of this depression in the vicinity of the Salton Sea is below sea level. The Coachella Valley forms the northerly portion of the Salton Trough and contains a thick sequence of sedimentary deposits that are Miocene to Recent in age. Mountains surrounding the Coachella Valley include the Little San Bernardino Mountains to the northeast, foothills of the San Bernardino Mountains to the northwest, and the San Jacinto and Santa Rosa Mountains to the southwest. These mountains expose primarily Precambrian metamorphic and Mesozoic granitic rocks. Tectonism of the region is dominated by the interaction of the East Pacific Plate and the North American Plate along a transform boundary.

The Coachella Valley has been filled with a variable thickness of relatively young, heterogeneous alluvial deposits. The Coachella Valley in the vicinity of the project site is drained by minor tributaries toward the Whitewater River, which is located approximately three miles southwest of the subject site. This drainage system trends towards the southeast in the vicinity of the subject site. Depth to groundwater in the vicinity of the subject site is reported to be approximately 100 feet below ground surface with a general direction of flow towards the southeast.

Numerous moderate to large earthquakes have affected the area of the subject site within historic time. Based on the proximity of several dominant active faults and seismogenic structures, as well as the historic seismic record, the area of the subject site is considered subject to relatively high seismicity. The seismic hazard most likely to impact the site is groundshaking due to a large earthquake on one of the major active regional faults. The San Andreas – Southern fault is the nearest active fault to the site and located approximately 6.3 kilometers northeast of the project site. The Burnt Mountain, Eureka Peak and San Jacinto – Anza faults are located approximately 26, 27.3, and 36.8 kilometers from the site, respectively. The subject site is located in Seismic Zone 4 as defined by the California Building Code.

FIELD AND LABORATORY INVESTIGATIONS

Subsurface soil conditions were explored by drilling sixteen (16) borings, using a truck-mounted drill rig, to depths ranging from approximately 11 to 51 feet below existing site grade. The approximate boring locations are shown on the Site Plan, Figure 2. These approximate boring locations were estimated in the field based on pacing and measuring from the limits of existing site features. During drilling operations, penetration tests were performed at regular intervals to evaluate the soil consistency and to obtain information regarding the engineering properties of the subsurface soils. Soil samples were retained for laboratory testing. The soils encountered were continuously examined and visually classified in accordance with the Unified Soil Classification System. A more detailed description of the field investigation is presented in Appendix A.

Laboratory tests were performed on selected soil samples to evaluate their physical characteristics and engineering properties. The laboratory-testing program was formulated with emphasis on the evaluation of in-situ moisture and dry density, gradation, shear strength, consolidation, R-value, maximum dry density, resistivity, sulfate and chloride of the materials encountered. Details of the laboratory-testing program are discussed in Appendix A. The results of the laboratory tests are presented on the boring logs or on the test reports, which are also included in Appendix A. This information, along with the field observations, was used to prepare the final boring logs in Appendix A.

SOIL PROFILE AND SUBSURFACE CONDITIONS

Based on our findings, the subsurface conditions encountered appear typical of those found in the geologic region of the site. In general, the subsurface soils consisted of 1 to 3 feet of loose/disturbed silty sands and sands underlain by denser alluvial deposits. The upper soils are disturbed, have low strength characteristics, and are highly compressible when saturated.

Below the loose/disturbed upper soils, denser silty sands, sands and silts were encountered. Field and laboratory tests suggest that the deeper native soils are moderately strong and slightly compressible. Penetration resistance, measured by the number of blows required to drive a Modified California sampler or a Standard Penetration Test (SPT) sampler, ranged from 7 to 54 blows per foot. Dry densities ranged from 90.8 to 112.6 pounds per cubic feet (pcf). Representative soil samples had angles of internal friction of 32 to 37 degrees. Representative soil samples consolidated approximately 0.7 to 1.7 percent under a 2-ksf load when saturated. Reprehensive soil samples had R-values of 52 to 58, maximum dry densities of 110 to 119 pcf and an Expansion Index of 0.

One boring, Boring B-1, was advanced to a depth of 50 feet to obtain additional information for use in liquefaction potential evaluation. The profile is consistent with the majority of the borings drilled during this study.

The above is a general description of soil conditions encountered at the site in the borings drilled for this investigation. For a more detailed description of the soil conditions encountered, please refer to the boring logs in Appendix A.

GROUNDWATER

Test boring locations were checked for the presence of groundwater during and after the drilling operations. Groundwater was not encountered at the time of this investigation.

It should be recognized that water table elevation might fluctuate with time. The depth to groundwater can be expected to fluctuate both seasonally and from year to year. Fluctuations in the groundwater level may occur due to variations in precipitation, irrigation practices at the site and in the surrounding areas, climatic conditions, flow in adjacent or nearby canals, pumping from wells and possibly as the result of other factors that were not evident at the time of our investigation. Therefore, water level observations at the time of our field investigation may vary from those encountered during the construction phase of the project. The evaluation of such factors is beyond the scope of this report. Long-term monitoring in observation wells, sealed from the influence of surface water, is often required to more accurately define the potential range of groundwater conditions on a site.

SEISMICITY, LIQUEFACTION POTENTIAL AND SEISMIC INDUCED SETTLEMENT

Seismicity is a general term relating to the abrupt release of accumulated strain energy in the rock materials of the earth's crust in a given geographical area. The recurrence of accumulation and subsequent release of strain have resulted in faults and fault systems. Fault patterns and density reflect relative degrees of regional stress through time, but do not necessarily indicate recent seismic activity; therefore, the degree of seismic risk must be determined or estimated by the seismic record in any given region. Soil liquefaction is a state of soil particle suspension caused by a complete loss of strength when the effective stress drops to zero. Liquefaction normally occurs under saturated conditions in soils such as sand in which the strength is purely frictional. However, liquefaction has occurred in soils other than clean sand. Liquefaction usually occurs under vibratory conditions such as those induced by seismic events. To evaluate the liquefaction potential of the site, the following items were evaluated:

1) Soil type
2) Groundwater depth
3) Relative density
4) Initial confining pressure
5) Intensity and duration of ground shaking

The soils beneath the site consist predominately of dense and stiff materials. Groundwater is expected to be a depth of greater than 50 feet. The potential for liquefaction is considered to be low based on the absence of shallow groundwater and the relatively dense and stiff materials underlying the site.

One of the most common phenomena during seismic shaking accompanying any earthquake is the induced settlement of loose unconsolidated soils. Based on site subsurface conditions and the moderate to high seismicity of the region, any loose granular materials at the site could be vulnerable to this potential hazard. Our analysis of dynamic densification of "dry" soil above the water table in the upper 50 feet of existing soil profile was performed. The seismic densification of dry to damp alluvial sandy soils due to onsite seismic activity is calculated to have total settlements of approximately 2 to 3 inches. To reduce the effects and magnitude of the seismic induced settlements, remedial grading is recommended, as discussed later in this report. Following completion of the recommended remedial grading and foundation design, we estimate that differential settlements of approximately ½ inch in 20 feet laterally may result from seismic densification.

SOIL CORROSIVITY

Corrosion tests were performed to evaluate the soil corrosivity to the buried structures. The results of the tests are included as follows:

Parameter	Results	Test Method
Resistivity	12,500 ohms-cm	Caltrans
Sulfate	Less than 5 mg/kg	EPA 9038
Chloride	23.4 mg/kg	EPA 9253
pH	9.02	EPA 9045C

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of our field and laboratory investigations, along with previous geotechnical experience in the project area, the following is a summary of our evaluations, conclusions, and recommendations.

ADMINISTRATIVE SUMMARY

Based on the data collected during this investigation, and from a geotechnical engineering standpoint, it is our opinion that the proposed development is feasible as presently anticipated provided that the recommendations presented in this report are considered in the design and construction of the project.

In brief, the subject site and soil conditions, with the exception of the upper loose/collapsible soils and seismic induced settlement, appear to be conducive to the development of the project.

Undocumented fill materials may be present onsite between our exploratory borehole locations. In general, these fill soils should be assumed uncompacted and unsuitable for support of foundations and pavements. These fill soils if encountered during grading should also be overexcavated and recompacted.

The upper loose soils within the project site are moderately compressible under saturated conditions. Accordingly, mitigation measures are recommended to reduce potential excessive soil settlement. Recommendations pertaining to the removal and recompaction of these moisture-sensitive soils are presented herein. After completion of the recommended site preparation, the site should be suitable for shallow footing support.

Sandy soil conditions were encountered at the site. These cohesionless soils have a tendency to cave in trench wall excavations. Shoring or sloping back trench sidewalls may be required within these loose cohesionless soils.

Due to the lack of fines for the onsite cohesionless soils, it is recommended that the subgrade and fill soils be compacted to a minimum of 95 percent of the maximum dry density based on ASTM D1557-00 Test Method.

The shrinkage on recompacted soil and fill placement is estimated at 15 to 20 percent. This value is an estimate and may vary significantly depending on several items including soil conditions, compaction effort, weather, etc. Subsidence within building areas will be less than 0.02 foot, due to the recommended over-excavation. Subsidence within parking areas, below the 12-inch recompaction depth, is estimated at 0.05 foot.

All grading and earthwork should be performed in accordance with the Grading Ordinances of the City of La Quinta and the applicable portions of the General Earthwork Specifications in Appendix B, except as modified herein.

GROUNDWATER INFLUENCE ON STRUCTURES/CONSTRUCTION

Based on our findings and historical records, it is not anticipated that groundwater will rise within the zone of structural influence or affect the construction of foundations and pavements for the project. However, if earthwork is performed during or soon after periods of precipitation, the subgrade soils may become saturated, "pump," or not respond to densification techniques. Typical remedial measures include discing and aerating the soil during dry weather; mixing the soil with dryer materials; removing and replacing the soil with an approved fill material; or mixing the soil with an approved lime or cement product. Our firm should be consulted prior to implementing remedial measures to observe the unstable subgrade conditions and provide appropriate recommendations.

WEAK AND DISTURBED SOILS

Of primary importance in the development of this site is the removal/recompaction of potentially compressible soils from the areas of the proposed structures. This is discussed in detail in the Earthwork section of this report.

COLLAPSIBLE SOILS

The upper onsite native soils are moisture-sensitive and are moderately compressible under saturated conditions. Structures within the project vicinity have experienced excessive post-construction settlement, when the foundation soils become near saturated. As recommended in the site preparation section of this report, the collapsible soils should be removed and recompacted to a minimum of 95 percent of the maximum dry density based on ASTM D1557-00 Test Method.

EARTHWORK

Site Preparation – Clearing and Stripping

General site clearing should include removal of vegetation and existing utilities, structures, trees and associated root systems rubble, rubbish, and any loose and/or saturated materials. Site stripping should extend to a minimum depth of 2 to 4 inches, or until all organics in excess of 3 percent by volume are removed. Deeper stripping may be required in localized areas. These materials will not be suitable for reuse as Engineered Fill. However, stripped topsoil may be stockpiled and reused in landscape or non-structural areas with the approval of the owner and landscaper.

Any excavations that result from clearing operations should be backfilled with engineered fill. Krazan & Associates' field staff should be present during site clearing operations to enable us to locate areas where depressions or disturbed soils are present and to allow our staff to observe and test the backfill as it is placed. If site clearing and backfilling operations occur without appropriate observation and testing by a qualified geotechnical consultant, there may be the need to over-excavate the building area to identify uncontrolled fills prior to mass grading of the building pad.

As with site clearing operations, any buried structures encountered during construction should be properly removed and backfilled. The resulting excavations should be backfilled with engineered fill.

Overexcavation and Recompaction

Building Pad Areas

To minimize post-construction soil movement and provide uniform support for the proposed buildings, overexcavation and recompaction within the proposed building footprints should be performed to a minimum depth of five (5) feet below existing grade or four (4) feet below bottom of the proposed footings, whichever is deeper. The actual depth of overexcavation should be determined by our field representative during grading. The overexcavation and recompaction should also extend laterally 5 feet beyond the edges of the proposed footings. Any undocumented fill encountered during grading should be removed and replaced with engineered fill.

Pavement Areas

Within the pavement areas, it is recommended that overexcavation and recompaction should be performed to at least 12 inches below existing grade or finish grade, whichever is deeper. This compaction effort should stabilize the surface soils and locate any unsuitable or pliant areas not found during our field investigation. The actual depth of the overexcavation and recompaction should be determined by our field representative during construction.

Fill Placement

Prior to placement of fill soils, the upper 8 inches of native subgrade soils should be scarified, moisture-conditioned to no less than the optimum moisture content, and recompacted to a minimum of 95 percent of the maximum dry density based on ASTM D1557-00 Test Method.

Fill soils should be placed in loose lifts approximately 6 to 8 inches thick, moisture-conditioned to near optimum moisture content (±2%), and compacted to achieve at least 95 percent of the maximum dry density as determined by ASTM D1557-00 Test Method. Additional lifts should not be placed if the previous lift did not meet the required dry density or if soil conditions are not stable.

The upper soils, during wet winter months, may become very moist due to the absorptive characteristics of the soil. Earthwork operations performed during winter months may encounter very moist unstable soils, which may require removal to grade a stable building foundation. Project site winterization consisting of placement of aggregate base and protecting exposed soils during the construction phase should be performed.

ENGINEERED FILL

The upper organic-free, on-site, native soils are predominately silty sands and sands. These soils will be suitable for reuse as non-expansive Engineered Fill, provided they are cleansed of excessive organics and debris.

The preferred materials specified for Engineered Fill are suitable for most applications with the exception of exposure to erosion. Project site winterization and protection of exposed soils during the

construction phase should be the sole responsibility of the contractor, since he has complete control of the project site at that time.

Imported Fill material should be predominately non-expansive granular materials with a plasticity index less than 10, an Expansion Index less than 20 and 10 to 40 percent passing No. 200 sieve. Imported Fill should be free from rocks and clods greater than 4 inches in diameter. All Imported Fill material should be submitted to the Soils Engineer for approval at least 48 hours prior to delivery at the site.

TEMPORARY EXCAVATION STABILITY

All excavations should comply with the current OSHA requirements. All cuts greater than 2 feet in depth should be sloped or shored. Temporary excavations should be sloped at 1½:1 (horizontal to vertical) or flatter up to a maximum depth of 8 feet below surrounding grade. Heavy construction equipment, building materials, excavated soil, and vehicular traffic should not be allowed within five (5) feet of tbe top (edge) of the excavation. Where sloped excavations are not feasible due to site constraints, the excavations may require shoring. The design of the shoring system is normally the responsibility of the contractor or shoring designer, and therefore, is outside the scope of this report. The design of the temporary shoring should take into account lateral pressures exerted by the adjacent soil, and, where anticipated, surcharge loads due to adjacent buildings and any construction equipment or traffic expected to operate alongside the excavation.

The excavation/shoring recommendations provided herein are based on soil characteristics derived from our test borings within the area. Variations in soil conditions will likely be encountered during the excavations. Krazan & Associates, Inc. should be afforded the opportunity to provide field review to evaluate the actual conditions and account for field condition variations, not otherwise anticipated in the preparation of this recommendation.

UTILITY TRENCH BACKFILL

Sandy soil conditions were encountered at the site. These cohesionless soils have a tendency to cave in trench wall excavations. Shoring or sloping back trench sidewalls may be required within these sandy soils. Utility trench backfill should be compacted to at least 95 percent of the maximum dry density based on ASTM D1557-00 Test Method. Pipe bedding should be placed in accordance with pipe manufacturer recommendations.

Depending upon the location and depth of some utility trenches, water flows into open excavations could be experienced, especially during or following periods of precipitation. The contractor is responsible for removing all water-sensitive soils from the trench regardless of the backfill location and compaction requirements. The contractor should use appropriate equipment and methods to avoid damage to the utilities and/or structures during fill placement and compaction.

COMPACTED MATERIAL ACCEPTANCE

Compaction specifications are not the only criteria for acceptance of the site grading or other such activities. However, the compaction test is the most universally recognized test method for assessing the performance of the Grading Contractor. The numerical test results from the compaction test cannot be

solely used to predict the engineering performance of the compacted material. Therefore, the acceptance of compacted materials will also be dependent on the moisture content and the stability of that material. The Geotechnical Engineer has the option of rejecting any compacted material regardless of the degree of compaction if that material is considered to be too dry or excessively wet, unstable or if future instability is suspected. A specific example of rejection of fill material passing the required percent compaction is a fill which has been compacted with in-situ moisture content significantly less than optimum moisture. Where expansive soils are present, heaving of the soils may occur with the introduction of water. Where the material is a lean clay or silt, this type of dry fill (brittle fill) is susceptible to future settlement if it becomes saturated or flooded.

SURFACE DRAINAGE AND LANDSCAPING

The ground surface should slope away from building and pavement areas toward appropriate drop inlets or other surface drainage devices. We recommended that adjacent paved exterior grades be sloped a minimum of 2 percent for a minimum distance of 5 feet away from structures. Ideally, asphalt concrete pavement areas should be sloped at a minimum of 2 percent, with Portland cement concrete sloped at a minimum of one percent toward drainage structures. These grades should be maintained for the life of the project.

Roof drains should be designed to avoid discharging into landscape areas adjacent to the building. Downspouts should be directed to discharge directly onto paved surfaces to allow for surface drainage into the storm systems or should be connected directly to the on-site storm drain.

FLOOR SLABS AND EXTERIOR FLATWORK

Concrete slab-on-grade floors should be underlain by a water vapor retarder. The water vapor retarder should be installed in accordance with ASTM Specification E 1643-98. According to ASTM Guidelines, the water vapor retarder should consist of a vapor retarder sheeting underlain by a minimum of 3 inches of compacted, clean, gravel of ¾-inch maximum size. To aide in concrete curing 2 to 4 inches of granular fill may be placed on top of the vapor retarder. The granular fill should consist of damp clean sand with at least 10 to 30 percent of the sand passing the No. 100 sieve. The sand should be free of clay, silt or organic material. Rock dust which is manufactured sand from rock crushing operations is typically suitable for the granular fill. This granular fill material should be compacted.

The exterior floors should be poured separately in order to act independently of the walls and foundation system. All fills required to bring the building pads to grade should be Engineered Fills.

Moisture within the structure may be derived from water vapors, which were transformed from the moisture within the soils. This moisture vapor can travel through the vapor membrane and penetrate the slab-on-grade. This moisture vapor penetration can affect floor coverings and produce mold and mildew in the structure. To minimize moisture vapor intrusion, it is recommended that a vapor retarder be installed in accordance with ASTM guidelines. It is recommended that the utility trenches within the structure be compacted, as specified in our report, to minimize the transmission of moisture through the utility trench backfill. Special attention to the immediate drainage and irrigation around the building is recommended. Positive drainage should be established away from the structure and should be

maintained throughout the life of the structure. Ponding of water should not be allowed adjacent to the structure. Over-irrigation within landscaped areas adjacent to the structure should not be performed. In addition, ventilation of the structure (i.e. ventilation fans) is recommended to reduce the accumulation of interior moisture.

FOUNDATIONS

Provided that the site is prepared as recommended, the proposed structures may be supported on a shallow foundation system bearing on at least 4 feet of Engineered Fill. Spread and continuous footings can be designed for the following maximum allowable soil bearing pressures:

Load	Allowable Loading
Dead Load Only	2,500 psf
Dead-Plus-Live Load	3,000 psf
Total Load, including wind or seismic loads	4,000 psf

The footings should have a minimum depth of 18 inches below pad subgrade (soil grade) or adjacent exterior grade, whichever is deeper. Footings should have minimum widths of 15 inches for continuous footings and 24 inches for isolated pad footings. The footing excavations should not be allowed to dry out any time prior to pouring concrete. It is recommended that footings be reinforced with at least one No. 5 reinforcing rebar in both top and bottom.

Provided the site is prepared as recommended and that the foundations are designed and constructed in accordance with our recommendations, the total settlement due to static foundation loads is not expected to exceed 1 inch. The differential settlements are anticipated to be less than ½ inch in 40 feet due to static loading. Most of the settlement is expected to occur during construction as the loads are applied. However, additional post-construction settlement may occur if the foundation soils are flooded or saturated. The seismic induced differential settlements are anticipated to be less than ½ inch in 20 feet due to a strong earthquake event.

Resistance to lateral footing displacement can be computed using an allowable friction factor of 0.45 acting between the base of foundations and the supporting subgrade. Lateral resistance for footings can alternatively be developed using an allowable equivalent fluid passive pressure of 400 pounds per cubic foot acting against the appropriate vertical footing faces. The frictional and passive resistance of the soil may be combined without reduction in determining the total lateral resistance. A one-third increase in the above value may be used for short duration, wind, or seismic loads.

RETAINING WALLS

Walls retaining horizontal backfill and capable of deflecting a minimum of 0.1 percent of its height at the top may be designed using an equivalent fluid active pressure of 32 pounds per square foot per foot of depth. Walls that are incapable of this deflection or walls that are fully constrained against deflection may be designed for an equivalent fluid at-rest pressure of 52 pounds per square foot per foot per depth.

Expansive soils should not be used for backfill against walls. The wedge of non-expansive backfill material should extend from the bottom of each retaining wall outward and upward at a slope of 2:1 (horizontal to vertical) or flatter. The wall backfill should be compacted to at least 95 percent of the maximum dry density based on ASTM D1557-00 Test Method.

The active and at-rest earth pressures do not include hydrostatic pressures. To reduce the build-up of hydrostatic pressures, drainage should be provided behind the retaining walls. Wall drain should consist of a minimum 12-inch wide zone of drainage material, such as 3/4-inch by 1/2-inch drain rock wrapped in a non-woven polypropylene geotextile filter fabric such as Mirafi 140N or equivalent. Alternatively, drainage may be provided by the placement of a commercially produced composite drainage blanket, such as Miradrain, extending continuously up from the base of the wall. The drainage material should extend from the base of the wall to finished subgrade in paved areas and to within about 12 inches below the top of the wall in landscape areas. In landscape areas the top 12 inches should be backfilled with compacted native soil. A 4-inch minimuun diameter, perforated, Schedule 40 PVC drain pipe should be placed with holes facing down in the lower portion of the wall drainage material, surrounded with drain rock wrapped in filter fabric. A solid drainpipe leading to a suitable discharge point should provide drainage outlet. As an alternative, weep holes may be used to provide drainage. If weep holes are used the weep holes should be 3 inches in diameter and spaced about 8 feet on centers. The backside of the weep holes should be covered with a corrosion-resistant mesh to prevent loss of backfill and/or drainage material.

PAVEMENT DESIGN

Based on our laboratory test results, an R-value of 52 is used for the pavement design. If site grading exposes soil other than that assumed, we should perform additional tests to confirm or revise the recommended pavement sections for actual field conditions. The following table shows the recommended pavement sections for various traffic indices.

Traffic Index	Asphaltic Concrete	Class 2 Aggregate Base*	Compacted Subgrade*
5.0	2.5"	4.0"	12.0"
6.0	3.0"	4.0"	12.0"
7.0	4.0"	4.0"	12.0"

**** 95% compaction based on ASTM D1557 Test Method or CAL 216***

If traffic indices are not available, an estimated (typical value) index of 5.0 may be used for automobile parking and an index of 7.0 may be used for light truck traffic.

We recommend that the subgrade soil be prepared as discussed in this report. The compacted subgrade should be non-yielding when proof-rolled with a loaded ten-wheel truck, such as a water truck or dump truck, prior to pavement construction. Suhgrade preparation should extend a minimum of 2 feet laterally behind the edge of pavement or back of curbs. Pavement areas should be sloped and drainage gradients maintained to carry all surface water off the site. A cross slope of 2 percent is recommended in asphalt concrete pavement areas to provide good surface drainage and to reduce the potential for water to penetrate into the pavement structure. Unless otherwise required by local jurisdictions, paving materials should comply with the materials specifications presented in the Caltrans Standard Specifications

Section. Class 2 aggregate should comply with the materials requirements for Class 2 base found in Section 26.

SITE COEFFICIENT

The site coefficient, per Table 16-J, California Building Code, is based upon the site soil conditions. It is our opinion that a site coefficient of soil type S_D is appropriate for building design at this site. For seismic design of the structures, in accordance with the seismic provisions of the California Building Code, we recommend the following parameters:

Seismic Item	Value	CBC Reference
Zone Factor	0.4	Table 16-I
Source Type	A	Table 16-U
Coefficient N_a	1.1	Table 16-S
Coefficient N_v	1.5	Table 16-T
Coefficient C_a	0.51	Table 16-Q
Coefficient C_v	0.96	Table 16-R

SOIL CORROSIVITY

Excessive sulfate or chloride in either the soil or native water may result in an adverse reaction between the cement in concrete and the soil. California Building Code has developed criteria for evaluation of sulfate and chloride levels and how they relate to cement reactivity with soil and/or water. The soil samples from the subject site were tested to have a low sulfate and chloride concentrations. Therefore, no special design requirements are necessary to compensate for sulfate or chloride reactivity with the cement.

Electrical resistivity testing of the soil indicates that the onsite soils may have a mild potential for metal loss from electrochemical corrosion process. A qualified corrosion engineer should be consulted regarding the corrosion effects of the onsite soils on underground metal utilities.

Additional chemical testing should be performed for each building pad after grading to verify the soil corrosivity condition and revised recommendations will be provided according.

TESTING AND INSPECTION

A representative of Krazan & Associates, Inc. should be present at the site during the earthwork activities to confirm that actual subsurface conditions are consistent with the exploratory fieldwork. This activity is an integral part of our service, as acceptance of earthwork construction is dependent upon compaction testing and stability of the material. This representative can also verify that the intent of these recommendations is incorporated into the project design and construction. Krazan & Associates, Inc. will not be responsible for grades or staking, since this is the responsibility of the Prime Contractor.

LIMITATIONS

Geotechnical Engineering is one of the newest divisions of Civil Engineering. This branch of Civil Engineering is constantly improving as new technologies and understanding of earth sciences advance. Although your site was analyzed using appropriate and current techniques and methods, undoubtedly there will be substantial future improvements in this branch of engineering. In addition to advancements in the field of Geotechnical Engineering, physical changes in the site due to site clearing or grading activities, new agency regulations, or possible changes in the proposed structure or development after issuance of this report will result in the need for professional review of this report. Updating or revisions to the recommendations report, and possibly additional study of the site may be required at that time. In light of this, the Owner should be aware that there is a practical limit to the usefulness of this report without critical review. Although the time limit for this review is strictly arbitrary, it is suggested that two years be considered a reasonable time for the usefulness of this report.

Foundation and earthwork construction is characterized by the presence of a calculated risk that soil and groundwater conditions have been fully revealed by the original foundation investigation. This risk is derived from the practical necessity of basing interpretations and design conclusions on limited sampling of the earth. The recommendations made in this report are based on the assumption that soil conditions do not vary significantly from those disclosed during our field investigation. The logs of the exploratory borings do not provide a warranty as to the conditions that may exist beneath the entire site. The extent and nature of subsurface soil and groundwater variations may not become evident until construction begins. It is possible that variations in soil conditions and depth to groundwater could exist beyond the points of exploration that may require additional studies, consultation, and possible design revisions. If conditions are encountered in the field during construction, which differ from those described in this report, our firm should be contacted immediately to provide any necessary revisions to these recommendations.

This report presents the results of our Geotechnical Engineering Investigation, which was conducted for the purpose of evaluating the soil conditions in terms of foundation and retaining wall design, and grading and paving of the site. This report does not include reporting of any services related to environmental studies conducted to assessment the presence or absence of hazardous and/or toxic materials in the soil, groundwater, or atmosphere, or the presence of wetlands. Any statements in this report or on any boring log regarding odors, unusual or suspicious items, or conditions observed, are strictly for descriptive purposes and are not intended to convey professional judgment regarding the presence of potential hazardous or toxics substances. Conversely, the absence of statements in this report or on any boring log regarding odors, unusual or suspicious items, or conditions observed, does not constitute our rendering professional judgment regarding the absence of potentially hazardous or toxics substances.

The conclusions of this report are based on the information provided regarding the proposed construction. We emphasize that this report is valid for the project as described in the text of this report and it should not be used for any other sites or projects. The geotechnical engineering information presented herein is based upon our understanding of the proposed project and professional interpretation of the data obtained in our studies of the site. It is not warranted that such information and interpretation cannot be superseded by future geotechnical engineering developments. The Geotechnical Engineer

should be notified of any changes to the proposed project so the recommendations may be reviewed and re-evaluated. The work conducted through the course of this investigation, including the preparation of this report, has been performed in accordance with the generally accepted standards of geotechnical engineering practice, which existed in geographic area of the project at the time the report was written. No other warranty, express or implied, is made. This report is issued with the understanding that the owner chooses the risk they wish to bear by the expenditures involved with the construction alternatives and scheduling that are chosen.

If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office at (909) 974-4400.

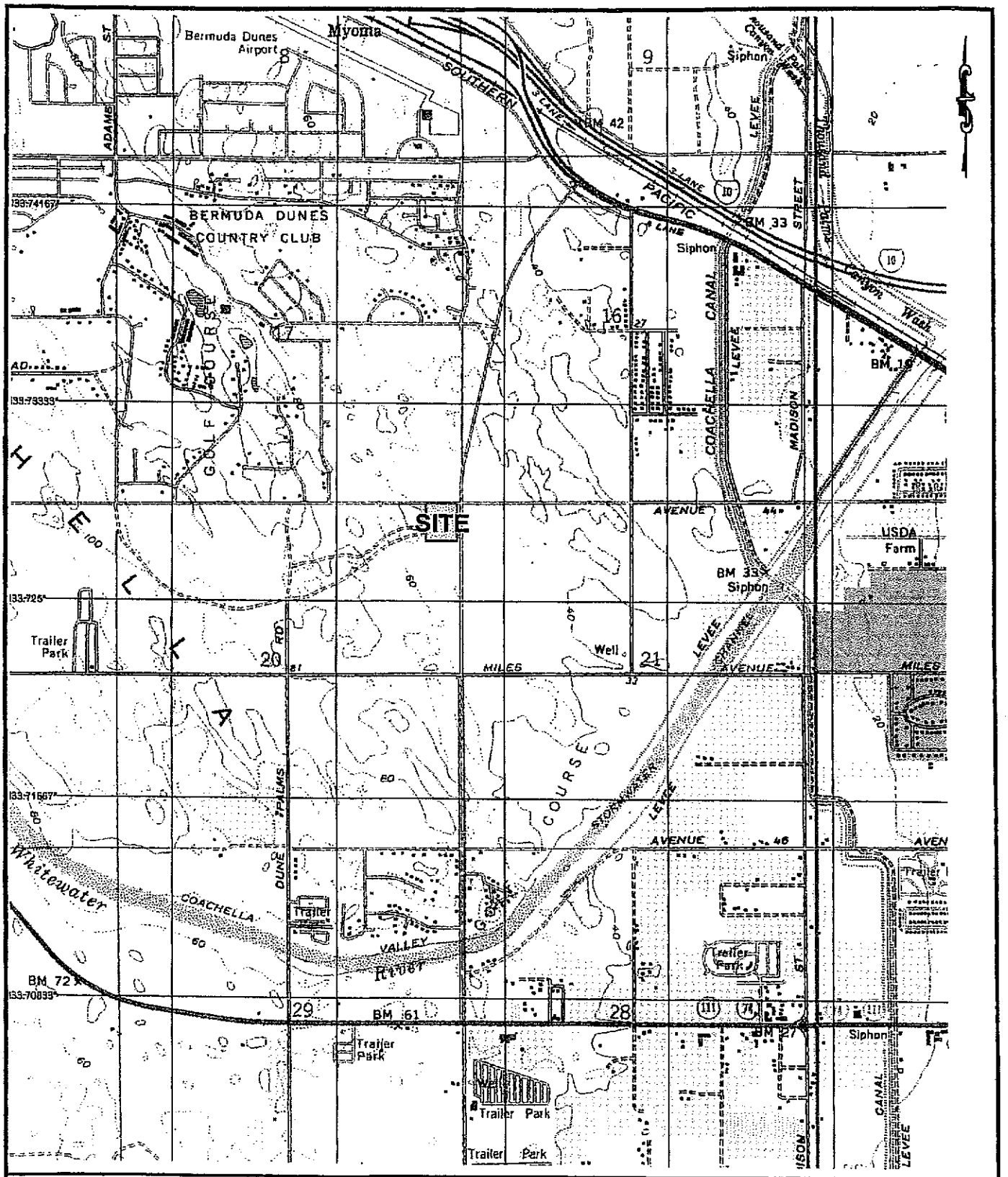
Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

James Kellogg

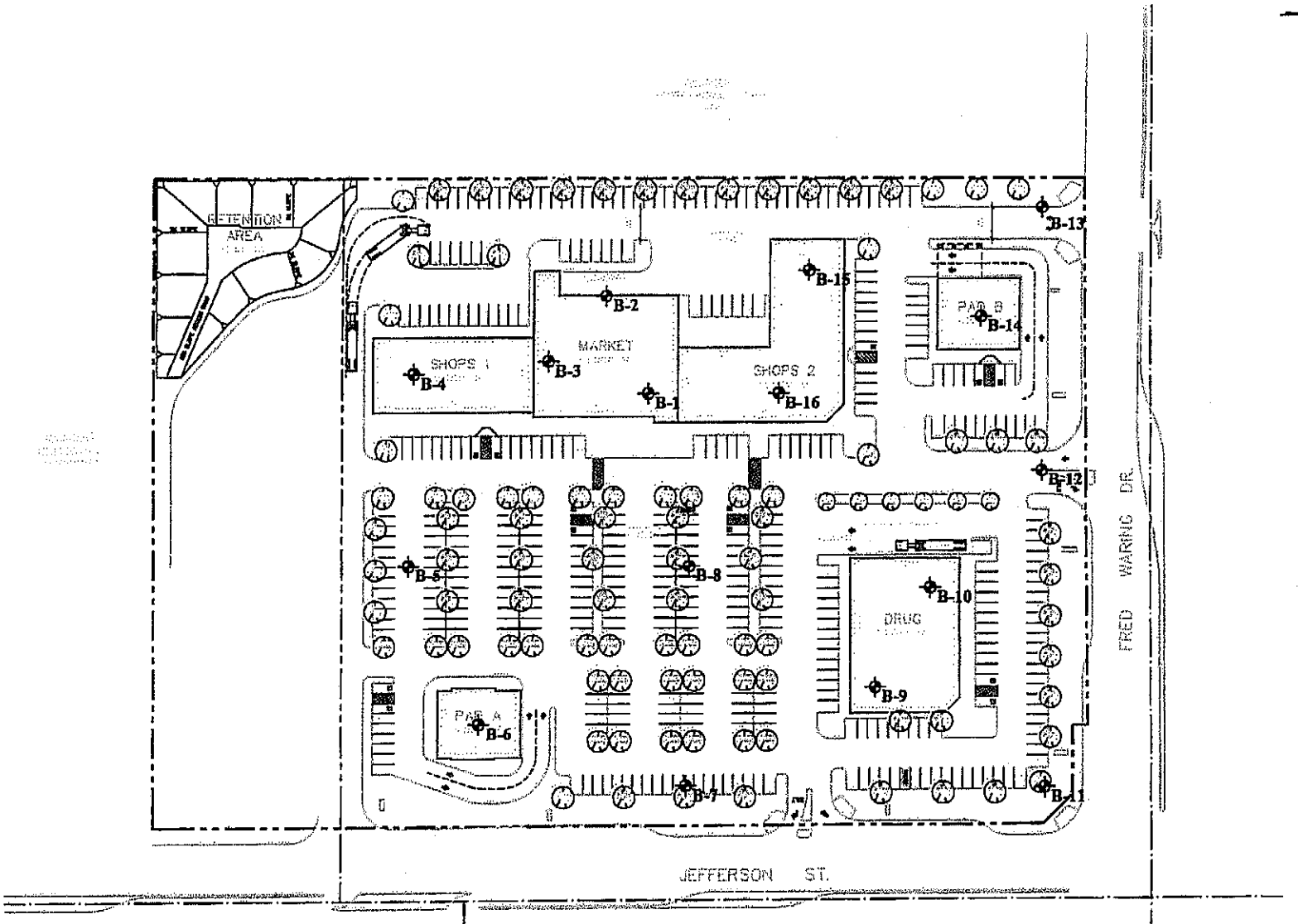
Clarence Jiang, GE
Project Manager
R.G.E. No. 2477

James M. Kellogg, PE
Regional Manager
R.C.E. No. 65092

CJ/JMK:rm



PROPOSED JEFFERSON SQUARE LA QUINTA, CA	Scale: 1:24,000	Date: MAY 2007	Krazan SITE DEVELOPMENT ENGINEERS Offices Serving the Western United States
	Drawn by: RM	Approved by: CJ	
VICINITY MAP	Project No. 112-07036	Figure No. 1	



LEGEND

B-16 APPROXIMATE BORING LOCATION

PROPOSED JEFFERSON SQUARE
LA QUINTA, CA

SITE PLAN

Scale: NTS	Date: MAY 2007
Drawn by: RM	Approved by: CJ
Project No. 112-07036	Figure No. 2

Krazan
SITE DEVELOPMENT ENGINEERS
Offices Serving the Western United States

APPENDIX A

FIELD AND LABORATORY INVESTIGATIONS

Field Investigation

Our field investigation consisted of a surface reconnaissance and a subsurface exploration program consisted of excavating, drilling, logging and sampling a total of 16 borings. Drilling was performed using a Simco 2800 drill rig. The depths of exploration ranged from about 11 feet to 51 feet below the existing site surface.

A member of our staff visually classified the soils in the field as the excavating and drilling progressed and recorded a continuous log of each boring. Visual classification of the soils encountered in our exploratory borings was made in general accordance with the Unified Soil Classification System (ASTM D2487).

During drilling operations, penetration tests were performed at regular intervals to evaluate the soil consistency and to obtain information regarding the engineering properties of the subsurface soils. Samples were obtained from the borings by driving either a 2.5-inch inside diameter Modified California tube sampler fitted with brass sleeves or a 2-inch outside diameter, 1-3/8-inch inside diameter Standard Penetration Test (SPT) sampler without sleeves. Soil samples were retained for possible laboratory testing. The samplers were driven up to a depth of 18 inches into the underlying soil using a 140-pound hammer falling 30 inches. The number of blows required to drive the sampler was recorded for each 6-inch penetration interval and the number of blows required driving the sampler the last 12 inches are shown as blows per foot on the boring logs.

The approximate locations of our borings are shown on the Site Plan, Figure 2. These approximate locations were estimated by our staff in the field based on pacing and the limits of existing site features.

Laboratory Investigation

The laboratory investigation was programmed to determine the physical and mechanical properties of the soil underlying the site. The laboratory-testing program was formulated with emphasis on the evaluation of in-situ moisture, density, gradation, shear strength, consolidation and expansion potential, and R-value of the materials encountered. In addition, chemical tests were performed to evaluate the soil/cement reactivity and corrosivity. Test results were used in our engineering analysis with respect to site and building pad preparation through mass grading activities, foundation and retaining wall design recommendations, pavement section design, evaluation of the materials as possible fill materials and for possible exclusion of some soils from use at the structures as fill or backfill.

Krazan & ASSOCIATES, INC.

GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION

UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)			
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)	GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)	SW	Well-graded sands, gravelly sands, little or no fines
		SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)			
SILTS AND CLAYS Liquid limit less than 50%		ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS		PT	Peat and other highly organic soils

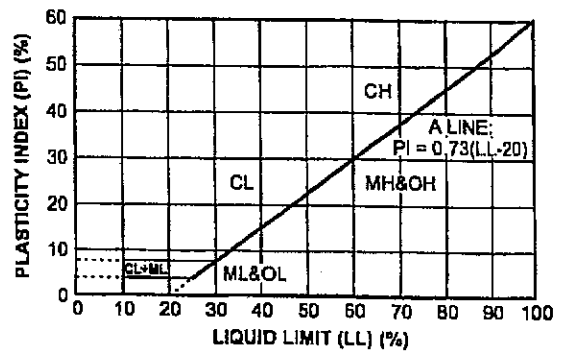
CONSISTENCY CLASSIFICATION

Description	Blows per Foot
Granular Soils	
Very Loose	< 5
Loose	5 – 15
Medium Dense	16 – 40
Dense	41 – 65
Very Dense	> 65
Cohesive Soils	
Very Soft	< 3
Soft	3 – 5
Firm	6 – 10
Stiff	11 – 20
Very Stiff	21 – 40
Hard	> 40

GRAIN SIZE CLASSIFICATION

Grain Type	*Standard Sieve Size*	*Grain Size in Millimeters*
Boulders	Above 12 inches	Above 305
Cobbles	12 to 13 inches	305 to 76.2
Gravel	3 inches to No. 4	76.2 to 4.76
Coarse-grained	3 to ¾ inches	76.2 to 19.1
Fine-grained	¾ inches to No. 4	19.1 to 4.76
Sand	No. 4 to No. 200	4.76 to 0.074
Coarse-grained	No. 4 to No. 10	4.76 to 2.00
Medium-grained	No. 10 to No. 40	2.00 to 0.042
Fine-grained	No. 40 to No. 200	0.042 to 0.074
Silt and Clay	Below No. 200	Below 0.074

PLASTICITY CHART



Log of Drill Hole B-1

Project: Proposed Jefferson Square

Project No: 112-07036

Client: Regency Centers

Figure No.: A-1

Location: La Quinta, CA

Logged By: SK

Depth to Water> **Initial:** **At Completion:**

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Water Content (%) 10 20 30 40
0		Ground Surface					
2		***SILTY SAND/SAND (SM/SP),*** fine to medium grained, light brown, slightly moist, medium dense	104.3	2.2		17	
4							
6			105.5	3.0		18	
8							
10		Same as above, loose to medium dense		3.3		11	
12							
14							
16		Same as above, medium dense		2.6		14	
18							
20				4.1		18	
22							
24							
26				3.9		16	
28							
30						17	

Drill Method: Hollow Stem Auger

Drill Date: 5/14/07

Drill Rig: Simco 2800

Krazan and Associates

Hole Size: 8"

Driller: Williams Drilling

Elevation: See Site Plan

Log of Drill Hole B-1

Project: Proposed Jefferson Square | **Project No:** 112-07036

Client: Regency Centers | **Figure No.:** A-1

Location: La Quinta, CA | **Logged By:** SK

Depth to Water> **Initial:** **At Completion:**

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Water Content (%) 10 20 30 40
32		***SILTY SAND/SAND (SM/SP),*** fine to medium grained, light brown, slightly moist, medium dense		2.7		17	
34		***SILTY SAND (SM),*** fine grained, light brown, moist, medium dense		5.8		15	
36							
38		***SANDY SILT W/CLAY (ML),*** fine grained, brown, very moist, very stiff		31.4		22	
40							
42		***SILTY SAND (SM),*** fine grained, light brown, slightly moist, medium dense		4.9		22	
44							
46							
48		***CLAYEY SILT (ML),*** fine grained, brown, very moist, stiff		31.9		16	
50							
52		End of Borehole Total Depth = 51' No groundwater was encountered during drilling Hole backfilled with soil cuttings and tamped 5/14/07					
54							
56							
58							
60							

Drill Method: Hollow Stem Auger | **Drill Date:** 5/14/07

Drill Rig: Simco 2800 | **Krazan and Associates** | **Hole Size:** 8"

Driller: Williams Drilling | **Elevation:** See Site Plan

Log of Drill Hole B-2

Project: Proposed Jefferson Square
Project No: 112-07036
Client: Regency Centers
Figure No.: A-2
Location: La Quinta, CA
Logged By: SK
Depth to Water> **Initial:** **At Completion:**

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
2		***SILTY SAND/SAND (SM/SP),*** fine to medium grained, light brown, damp, medium dense	94.7	1.6		17
4						
6		Same as above, loose to medium dense	101.3	1.2		10
8						
10				2.7		10
12						
14						
16		Same as above, medium dense		3.3		15
18						
20		Same as above, slightly moist		3.7		20
22		End of Borehole				
24		Total Depth = 21' No groundwater was encountered during drilling Hole backfilled with soil cuttings and tamped 5/14/07				
26						
28						
30						

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem Auger
Drill Date: 5/14/07
Drill Rig: Simco 2800
Hole Size: 8"
Driller: Williams Drilling
Elevation: See Site Plan
Sheet: 1 of 1

Krazan and Associates

Log of Drill Hole B-3

Project: Proposed Jefferson Square | **Project No:** 112-07036

Client: Regency Centers | **Figure No.:** A-3

Location: La Quinta, CA | **Logged By:** SK

Depth to Water> | **Initial:** | **At Completion:**

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Water Content (%) 10 20 30 40
0		Ground Surface					
2		***SILTY SAND/SAND (SM/SP),*** fine to medium grained, light brown, slightly moist, dense	107.1	2.0		35	
4							
6		Same as above, dense	106.0	2.2		18	
8							
10		Same as above, loose		2.0		8	
12							
14		Same as above, loose to medium dense		2.0		11	
16							
18							
20		End of Borehole					
22		Total Depth = 20'					
24		No groundwater was encountered during drilling					
26		Hole backfilled with soil cuttings and tamped 5/14/07					
28							
30							

Drill Method: Hollow Stem Auger | **Drill Date:** 5/14/07

Drill Rig: Simco 2800 | **Krazan and Associates** | **Hole Size:** 8"

Driller: Williams Drilling | **Elevation:** See Site Plan

Sheet: 1 of 1

Log of Drill Hole B-4

Project: Proposed Jefferson Square | **Project No:** 112-07036

Client: Regency Centers | **Figure No.:** A-4

Location: La Quinta, CA | **Logged By:** SK

Depth to Water> | **Initial:** | **At Completion:**

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Water Content (%) 10 20 30 40
0		Ground Surface					
2		***SILTY SAND/SAND (SM/SP),*** fine to medium grained, light brown, slightly moist, dense	108.2	1.9		40	
4							
6			111.2	3.0		37	
8							
10		Same as above, loose to medium dense		2.1		12	
12							
14							
16				2.6		11	
18							
20		Same as above, medium dense		2.1		15	
22		End of Borehole					
24		Total Depth = 21' No groundwater was encountered during drilling Hole backfilled with soil cuttings and tamped 5/14/07					
26							
28							
30							

Drill Method: Hollow Stem Auger | **Drill Date:** 5/14/07

Drill Rig: Simco 2800 | **Krazan and Associates** | **Hole Size:** 8"

Driller: Williams Drilling | **Elevation:** See Site Plan

Sheet: 1 of 1

Log of Drill Hole B-5

Project: Proposed Jefferson Square
Project No: 112-07036
Client: Regency Centers
Figure No.: A-5
Location: La Quinta, CA
Logged By: SK
Depth to Water>
Initial:
At Completion:

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Water Content (%) 10 20 30 40
0		Ground Surface					
0		***SILTY SAND (SM),*** fine grained, light brown, damp					
2		***SILTY SAND/SAND (SM/SP),*** fine to medium grained, light brown, slightly moist, dense	111.5	2.8		45	
4							
6			108.0	2.1		34	
8							
10		Same as above, loose		2.7		8	
12		End of Borehole					
14		Total Depth = 11' No groundwater was encountered during drilling Hole backfilled with soil cuttings and tamped 5/14/07					
16							
18							
20							
22							
24							
26							
28							
30							

Drill Method: Hollow Stem Auger
Drill Date: 5/14/07
Drill Rig: Simco 2800
Krazan and Associates
Hole Size: 8"
Driller: Williams Drilling
Elevation: See Site Plan
Sheet: 1 of 1

Log of Drill Hole B-6

Project: Proposed Jefferson Square
Project No: 112-07036
Client: Regency Centers
Figure No.: A-6
Location: La Quinta, CA
Logged By: SK
Depth to Water> **Initial:** **At Completion:**

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Water Content (%) 10 20 30 40
0		Ground Surface					
		SILTY SAND (SM), fine grained, light brown, damp					
2		***SILTY SAND/SAND (SM/SP),*** fine to medium grained, light brown, slightly moist, very dense	111.1	1.6	X	54	=
4							
		Same as above, medium dense	110.5	2.2	X	26	=
6							
8							
10				1.3		15	=
12							
14							
		Same as above,		2.4		15	=
16							
18							
20		End of Borehole					
22		Total Depth = 20' No groundwater was encountered during drilling Hole backfilled with soil cuttings and tamped 5/14/07					
24							
26							
28							
30							

Drill Method: Hollow Stem Auger
Drill Date: 5/14/07
Drill Rig: Simco 2800
Krazan and Associates
Hole Size: 8"
Driller: Williams Drilling
Elevation: See Site Plan
Sheet: 1 of 1

Log of Drill Hole B-7

Project: Proposed Jefferson Square | **Project No:** 112-07036

Client: Regency Centers | **Figure No.:** A-7

Location: La Quinta, CA | **Logged By:** SK

Depth to Water> **Initial:** **At Completion:**

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Water Content (%) 10 20 30 40
0		Ground Surface					
0		***SILTY SAND (SM),*** fine grained, light brown, damp					
2		***SILTY SAND/SAND (SM/SP),*** fine to medium grained, light brown, slightly moist, dense	106.7	1.6		33	
4							
6		***SILTY SAND (SM),*** fine grained, light brown, slightly moist, loose to medium dense	104.0	2.5		11	
8		***SILTY SAND/SAND (SM/SP),*** fine to medium grained, light brown, slightly moist, medium dense					
10				2.2		15	
12		End of Borehole					
14		Total Depth = 11' No groundwater was encountered during drilling Hole backfilled with soil cuttings and tamped 5/14/07					
16							
18							
20							
22							
24							
26							
28							
30							

Drill Method: Hollow Stem Auger | **Drill Date:** 5/14/07

Drill Rig: Simco 2800 | **Krazan and Associates** | **Hole Size:** 8"

Driller: Williams Drilling | **Elevation:** See Site Plan

Sheet: 1 of 1

Log of Drill Hole B-8

Project: Proposed Jefferson Square | **Project No:** 112-07036

Client: Regency Centers | **Figure No.:** A-8

Location: La Quinta, CA | **Logged By:** SK

Depth to Water> **Initial:** **At Completion:**

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Water Content (%) 10 20 30 40
0		Ground Surface					
2		***SILTY SAND (SM),*** fine grained, light brown, slightly moist, medium dense	102.2	2.4		17	=
4							
6			96.8	2.6		11	=
8		***SILTY SAND/SAND (SM/SP),*** fine to medium grained, light brown, slightly moist, loose to medium dense					
10						10	
12		End of Borehole					
14		Total Depth = 11' No groundwater was encountered during drilling Hole backfilled with soil cuttings and tamped 5/14/07					
16							
18							
20							
22							
24							
26							
28							
30							

Drill Method: Hollow Stem Auger | **Drill Date:** 5/14/07

Drill Rig: Simco 2800 | **Krazan and Associates** | **Hole Size:** 8"

Driller: Williams Drilling | **Elevation:** See Site Plan

Sheet: 1 of 1

Log of Drill Hole B-9

Project: Proposed Jefferson Square
Project No: 112-07036
Client: Regency Centers
Figure No.: A-9
Location: La Quinta, CA
Logged By: SK
Depth to Water>
Initial:
At Completion:

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		***SILTY SAND/SAND (SM/SP),*** fine to medium grained, light brown, damp				
2		***SILTY SAND (SM),*** fine to medium grained, light brown, damp, medium dense	105.6	1.3		24
4						
6			97.3	3.0		17
8						
10		***SILTY SAND/SAND (SM/SP),*** fine to medium grained, light brown, damp, loose to medium dense		1.7		11
12						
14		Same as above, medium dense		2.2		17
16						
18						
20		End of Borehole				
22		Total Depth = 20'				
24		No groundwater was encountered during drilling				
26		Hole backfilled with soil cuttings and tamped 5/15/07				
28						
30						

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem Auger
Drill Date: 5/15/07
Drill Rig: Simco 2800
Hole Size: 8"
Driller: Williams Drilling
Elevation: See Site Plan
Sheet: 1 of 1

Krazan and Associates

Log of Drill Hole B-10

Project: Proposed Jefferson Square
Project No: 112-07036
Client: Regency Centers
Figure No.: A-10
Location: La Quinta, CA
Logged By: SK
Depth to Water> **Initial:** **At Completion:**

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Water Content (%)
0		Ground Surface					
2		***SILTY SAND/SAND (SM/SP),*** fine to medium grained, light brown, slightly moist, medium dense	107.7	4.8		20	
4							
6			105.4	2.0		15	
8							
10		Same as above, loose		2.4		9	
12							
14							
16		Same as above, medium dense		2.9		16	
18							
20		End of Borehole					
22		Total Depth = 20'					
24		No groundwater was encountered during drilling					
26		Hole backfilled with soil cuttings and tamped 5/15/07					
28							
30							

Drill Method: Hollow Stem Auger
Drill Date: 5/15/07
Drill Rig: Simco 2800
Krazan and Associates
Hole Size: 8"
Driller: Williams Drilling
Elevation: See Site Plan
Sheet: 1 of 1

Log of Drill Hole B-11

Project: Proposed Jefferson Square
Project No: 112-07036
Client: Regency Centers
Figure No.: A-11
Location: La Quinta, CA
Logged By: SK
Depth to Water>
Initial:
At Completion:

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Water Content (%) 10 20 30 40
0		Ground Surface					
2		***SILTY SAND (SM),*** fine to medium grained, light brown, slightly moist, medium dense	105.7	3.5		24	
4		***SILTY SAND/SAND (SM/SP),*** fine to medium grained, light brown, slightly moist, medium dense	106.7	2.7		18	
6							
8							
10				1.9		15	
12		End of Borehole					
14		Total Depth = 11' No groundwater was encountered during drilling Hole backfilled with soil cuttings and tamped 5/15/07					
16							
18							
20							
22							
24							
26							
28							
30							

Drill Method: Hollow Stem Auger
Drill Date: 5/15/07
Drill Rig: Simco 2800
Krazan and Associates
Hole Size: 8"
Driller: Williams Drilling
Elevation: See Site Plan
Sheet: 1 of 1

Log of Drill Hole B-12

Project: Proposed Jefferson Square | **Project No:** 112-07036

Client: Regency Centers | **Figure No.:** A-12

Location: La Quinta, CA | **Logged By:** SK

Depth to Water> **Initial:** **At Completion:**

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Water Content (%) 10 20 30 40
0		Ground Surface					
2		***SILTY SAND (SM),*** fine to medium grained, light brown, slightly moist, dense	112.6	2.4		44	
4		Same as above, medium dense	109.6	2.9		22	
6		***SILTY SAND/SAND (SM/SP),*** fine to medium grained, light brown, slightly moist, medium dense					
8							
10		***SILTY SAND (SM),*** fine to medium grained, light brown, slightly moist, loose		5.4		7	
12		End of Borehole					
14		Total Depth = 11' No groundwater was encountered during drilling Hole backfilled with soil cuttings and tamped 5/15/07					
16							
18							
20							
22							
24							
26							
28							
30							

Drill Method: Hollow Stem Auger | **Drill Date:** 5/15/07

Drill Rig: Simco 2800 | **Krazan and Associates** | **Hole Size:** 8"

Driller: Williams Drilling | **Elevation:** See Site Plan

Sheet: 1 of 1

Log of Drill Hole B-13

Project: Proposed Jefferson Square | **Project No:** 112-07036

Client: Regency Centers | **Figure No.:** A-13

Location: La Quinta, CA | **Logged By:** SK

Depth to Water> **Initial:** **At Completion:**

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Water Content (%) 10 20 30 40
0		Ground Surface					
		SILTY SAND (SM), fine grained, light brown, damp					
2		***SILTY SAND/SAND (SM/SP),*** fine to medium grained, light brown, slightly moist, medium dense	107.7	2.7		21	■
4							
6			107.0	2.0		17	■
8							
10		Same as above, loose to medium dense		4.1		12	■
12		End of Borehole					
		Total Depth = 11' No groundwater was encountered during drilling Hole backfilled with soil cuttings and tamped 5/15/07					
14							
16							
18							
20							
22							
24							
26							
28							
30							

Drill Method: Hollow Stem Auger | **Drill Date:** 5/15/07

Drill Rig: Simco 2800 | **Krazan and Associates** | **Hole Size:** 8"

Driller: Williams Drilling | **Elevation:** See Site Plan

Sheet: 1 of 1

Log of Drill Hole B-14

Project: Proposed Jefferson Square | **Project No:** 112-07036

Client: Regency Centers | **Figure No.:** A-14

Location: La Quinta, CA | **Logged By:** SK

Depth to Water> **Initial:** **At Completion:**

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Water Content (%) 10 20 30 40
0		Ground Surface					
		SILTY SAND/SAND (SM/SP), fine to medium grained, light brown, damp					
2		***SILTY SAND (SM),*** fine grained, light brown, slightly moist, medium dense	102.6	1.9		16	
4		***SILTY SAND/SAND (SM/SP),*** fine to medium grained, light brown, slightly moist, medium dense	105.9	2.5		17	
6							
8		***SILTY SAND (SM),*** fine to medium grained, light brown, slightly moist, loose					
10				3.8		9	
12		***SILTY SAND/SAND (SM/SP),*** fine to medium grained, light brown, slightly moist, medium dense					
14							
16				3.3		19	
18							
20		End of Borehole					
22		Total Depth = 20' No groundwater was encountered during drilling Hole backfilled with soil cuttings and tamped 5/15/07					
24							
26							
28							
30							

Drill Method: Hollow Stem Auger | **Drill Date:** 5/15/07

Drill Rig: Simco 2800 | **Krazan and Associates** | **Hole Size:** 8"

Driller: Williams Drilling | **Elevation:** See Site Plan

Sheet: 1 of 1

Log of Drill Hole B-15

Project: Proposed Jefferson Square
Project No: 112-07036
Client: Regency Centers
Figure No.: A-15
Location: La Quinta, CA
Logged By: SK
Depth to Water> **Initial:** **At Completion:**

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Water Content (%) 10 20 30 40
0		Ground Surface					
2		***SILTY SAND (SM),*** fine grained, light brown, slightly moist, loose to medium dense	95.6	2.5		13	=
4							
6			90.8	3.5		10	=
8		***SILTY SAND/SAND (SM/SP),*** fine to medium grained, light brown, slightly moist, loose to medium dense					
10				4.9		11	=
12							
14		Same as above, medium dense					
16				3.7		19	=
18							
20		End of Borehole					
22		Total Depth = 20' No groundwater was encountered during drilling Hole backfilled with soil cuttings and tamped 5/15/07					
24							
26							
28							
30							

Drill Method: Hollow Stem Auger
Drill Date: 5/15/07
Drill Rig: Simco 2800
Krazan and Associates
Hole Size: 8"
Driller: Williams Drilling
Elevation: See Site Plan
Sheet: 1 of 1

Log of Drill Hole B-16

Project: Proposed Jefferson Square | **Project No:** 112-07036

Client: Regency Centers | **Figure No.:** A-16

Location: La Quinta, CA | **Logged By:** SK

Depth to Water> | **Initial:** | **At Completion:**

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		***SILTY SAND (SM),*** fine grained, light brown, slightly moist, loose to medium dense				
2			94.6	4.1		11
4						
6			98.2	4.2		13
8		***SILTY SAND/SAND (SM/SP),*** fine to medium grained, light brown, slightly moist, dense				
10				3.1		21
12						
14		Same as above, damp				
16				1.2		23
18						
20		End of Borehole Total Depth = 20' No groundwater was encountered during drilling Hole backfilled with soil cuttings and tamped 5/15/07				
22						
24						
26						
28						
30						

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem Auger | **Drill Date:** 5/15/07

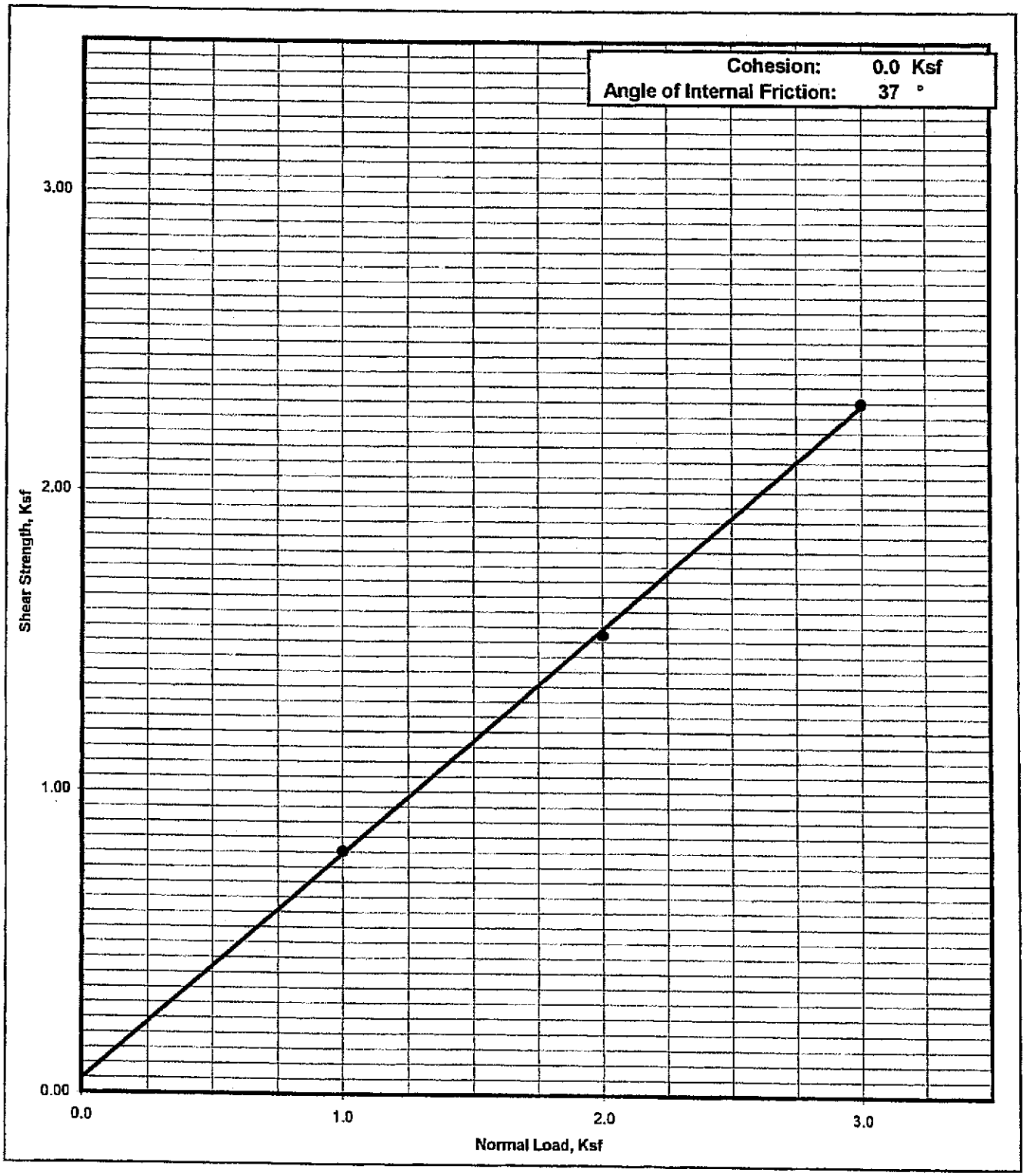
Drill Rig: Simco 2800 | **Hole Size:** 8"

Driller: Williams Drilling | **Elevation:** See Site Plan

Krazan and Associates

Shear Strength Diagram (Direct Shear)
ASTM D - 3080 / AASHTO T - 236

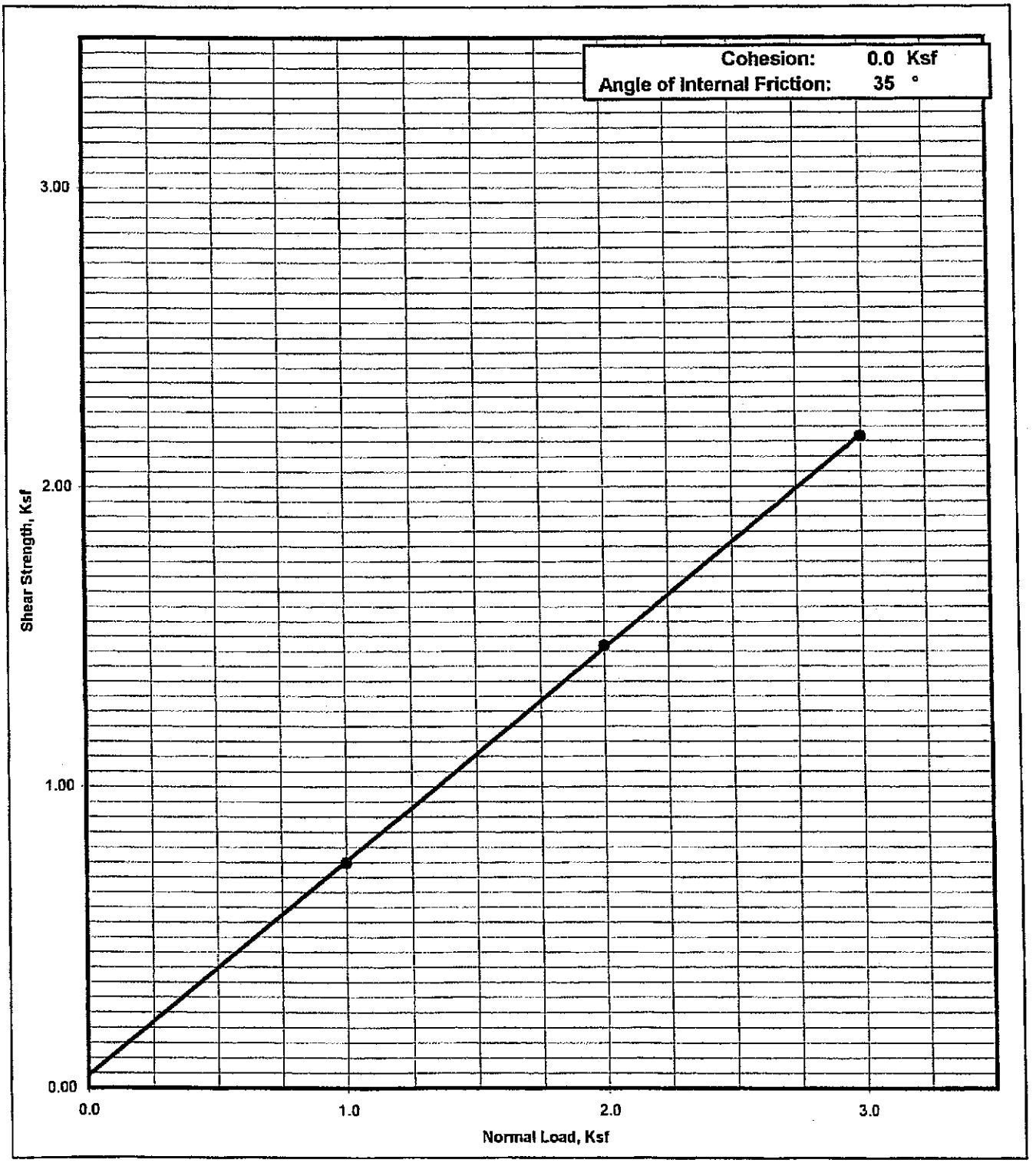
Project Number	Boring No. & Depth	Soil Type	Date
112-07036	B-1 @ 5'	(SM-SP), Silty Sand - Sand	5/18/07



Krazan Testing Laboratory

Shear Strength Diagram (Direct Shear)
ASTM D - 3080 / AASHTO T - 236

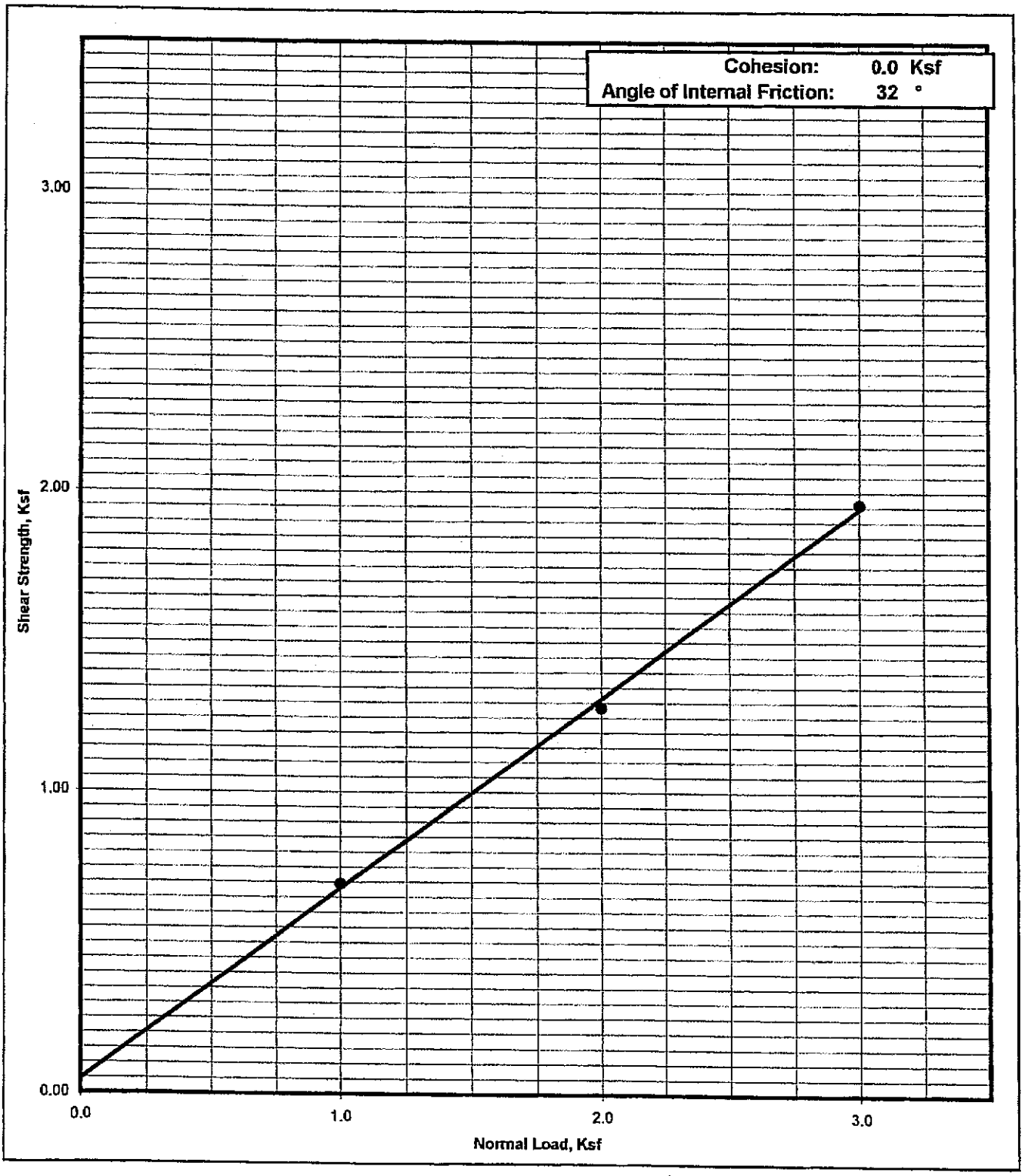
Project Number	Boring No. & Depth	Soil Type	Date
112-07036	B-2 @ 2'	(SM-SP), Silty Sand - Sand	5/18/07



Krazan Testing Laboratory

Shear Strength Diagram (Direct Shear)
ASTM D - 3080 / AASHTO T - 236

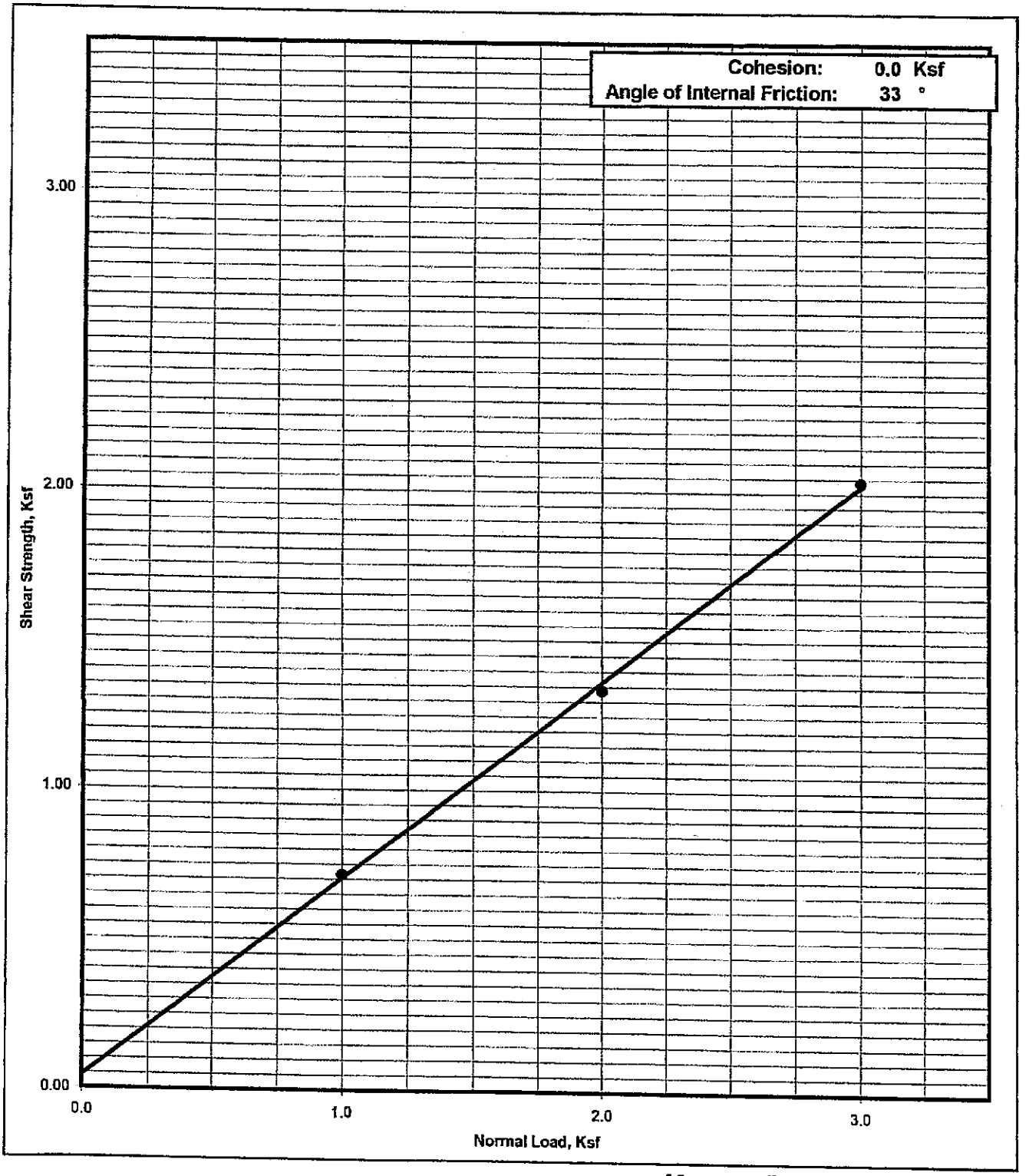
Project Number	Boring No. & Depth	Soil Type	Date
112-07036	B-9 @ 5'	(SM), Silty Sand	5/18/07



Krazan Testing Laboratory

Shear Strength Diagram (Direct Shear)
ASTM D - 3080 / AASHTO T - 236

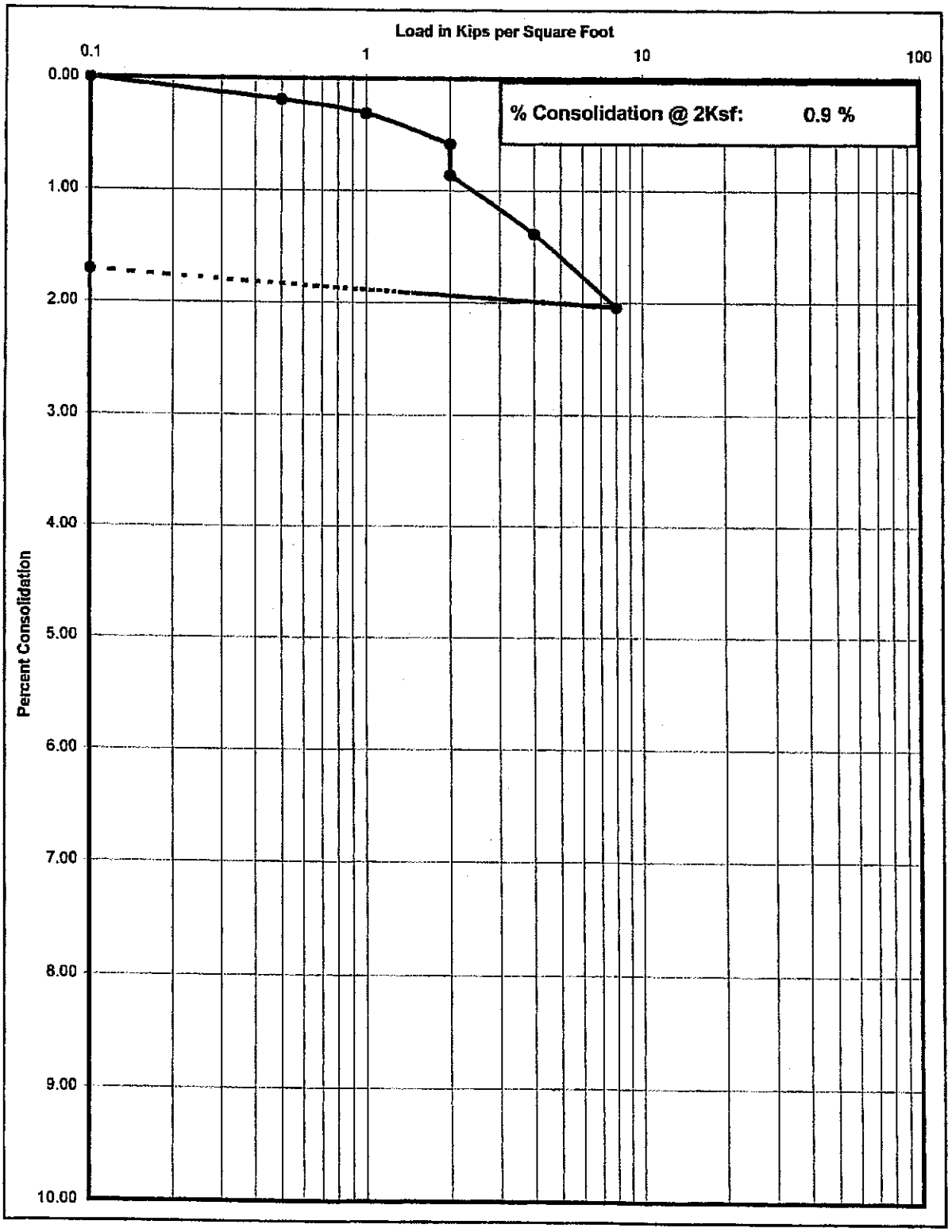
Project Number	Boring No. & Depth	Soil Type	Date
112-07036	B-15 @ 2'	(SM), Silty Sand	5/18/07



Krazan Testing Laboratory

Consolidation Test

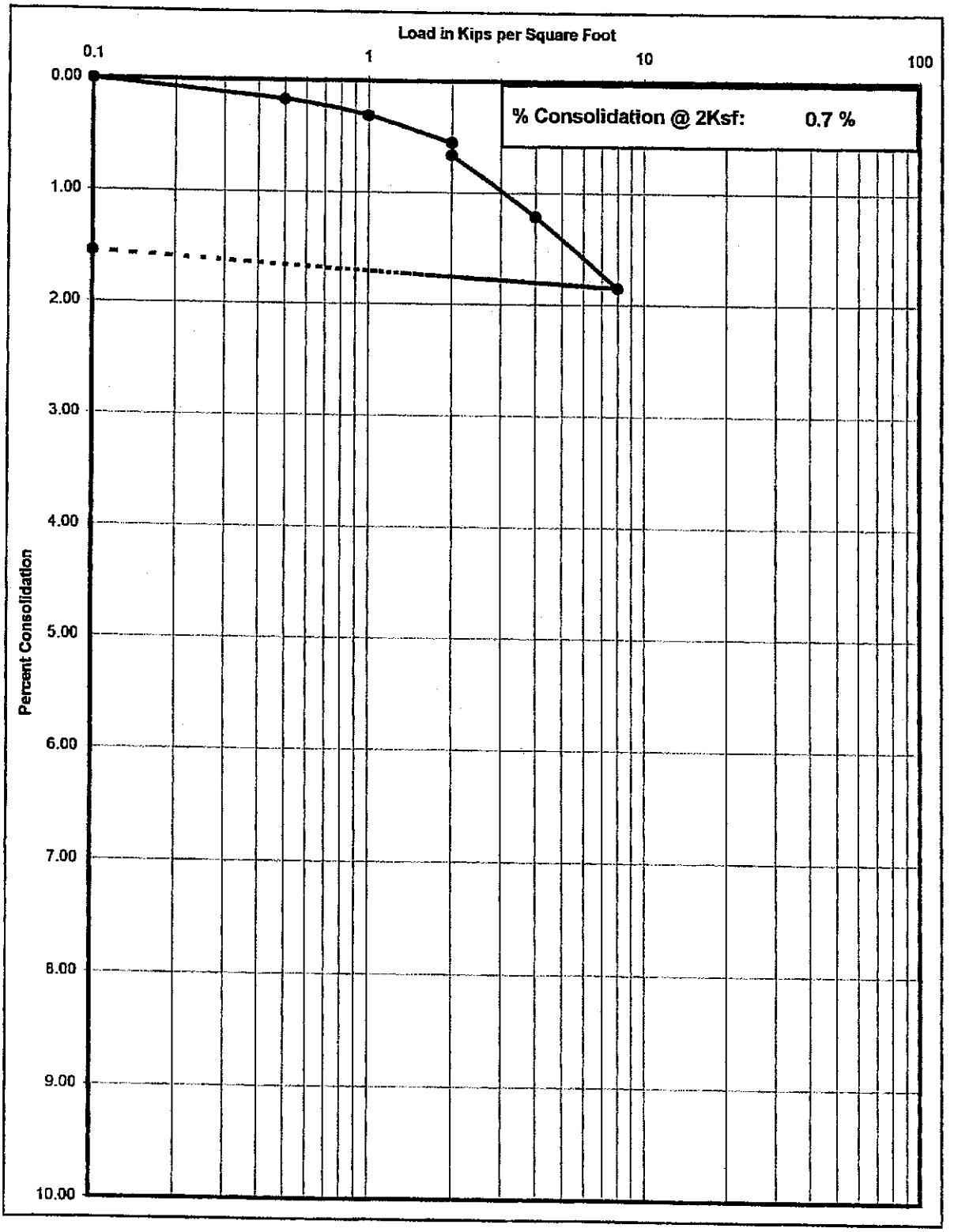
Project No	Boring No. & Depth	Date	Soil Classification
112-07036	B-1 @ 2'	5/18/07	(SM-SP), Silty Sand - Sand



Krazan Testing Laboratory

Consolidation Test

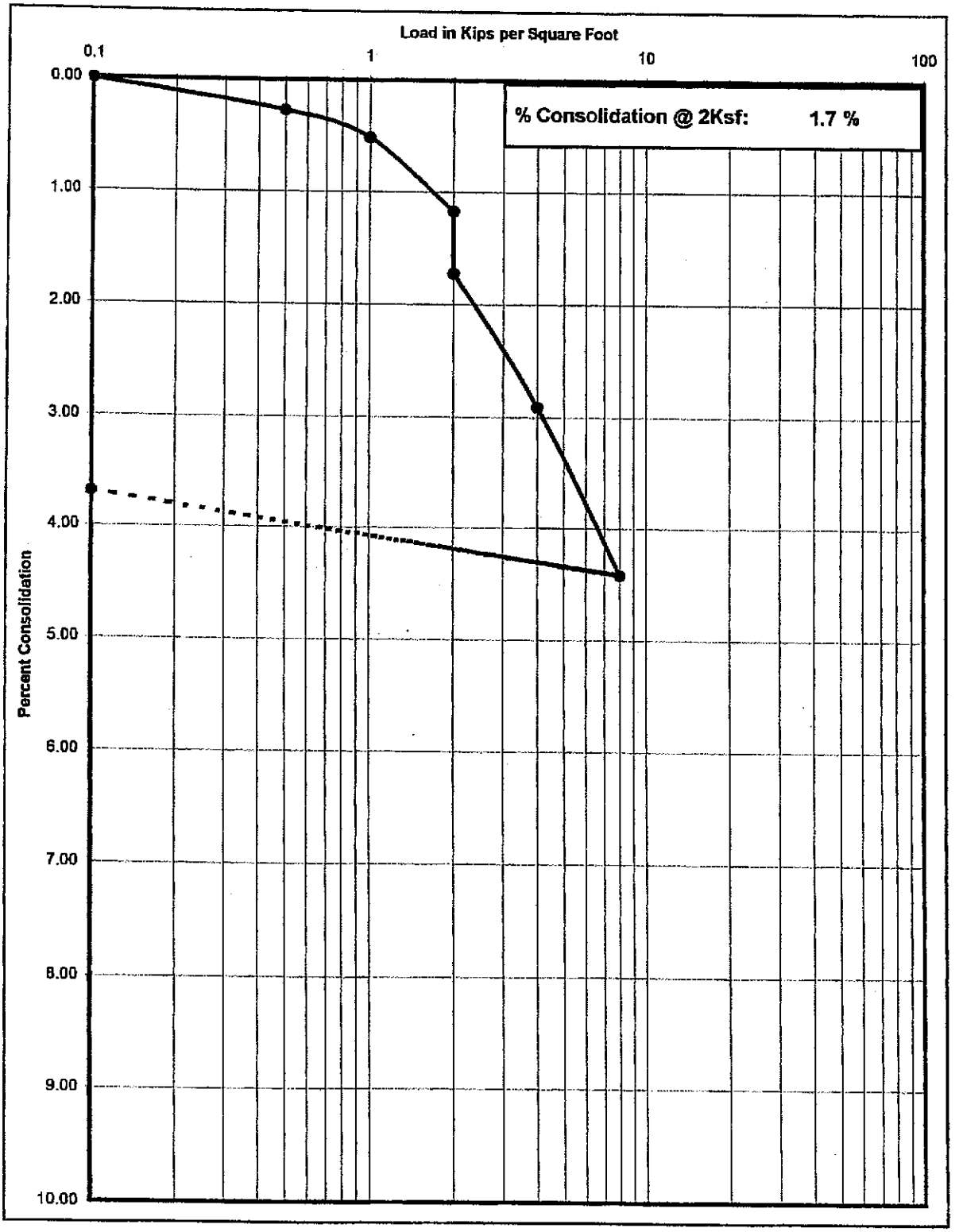
Project No	Boring No. & Depth	Date	Soil Classification
112-07036	B-3 @ 5'	5/18/07	(SM-SP), Silty Sand - Sand



Krazan Testing Laboratory

Consolidation Test

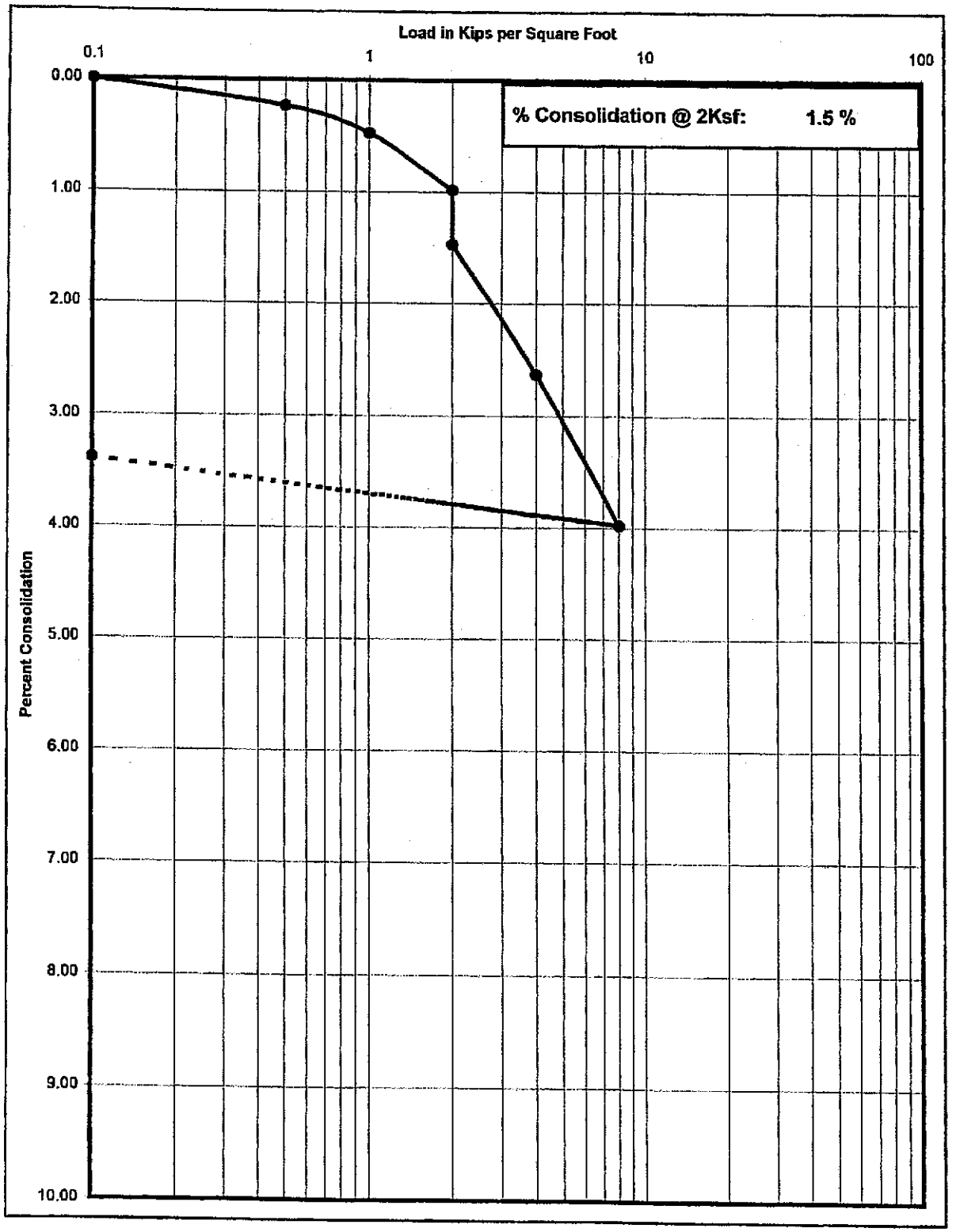
Project No	Boring No. & Depth	Date	Soil Classification
112-07036	B-15 @ 5'	5/18/07	(SM), Silty Sand



Krazan Testing Laboratory

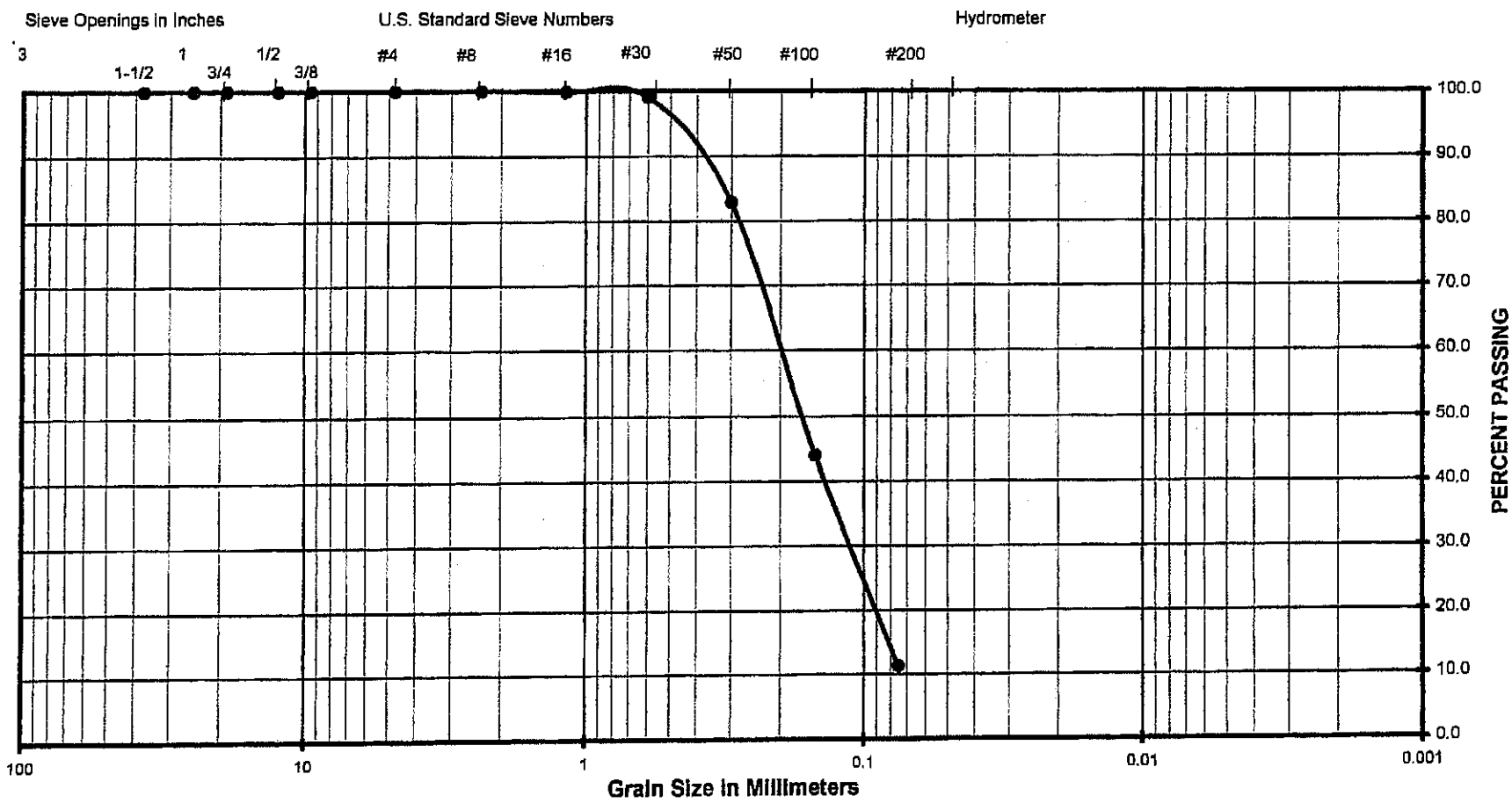
Consolidation Test

Project No	Boring No. & Depth	Date	Soil Classification
112-07036	B-16 @ 2'	5/18/07	(SM), Silty Sand



Krazan Testing Laboratory

Grain Size Analysis



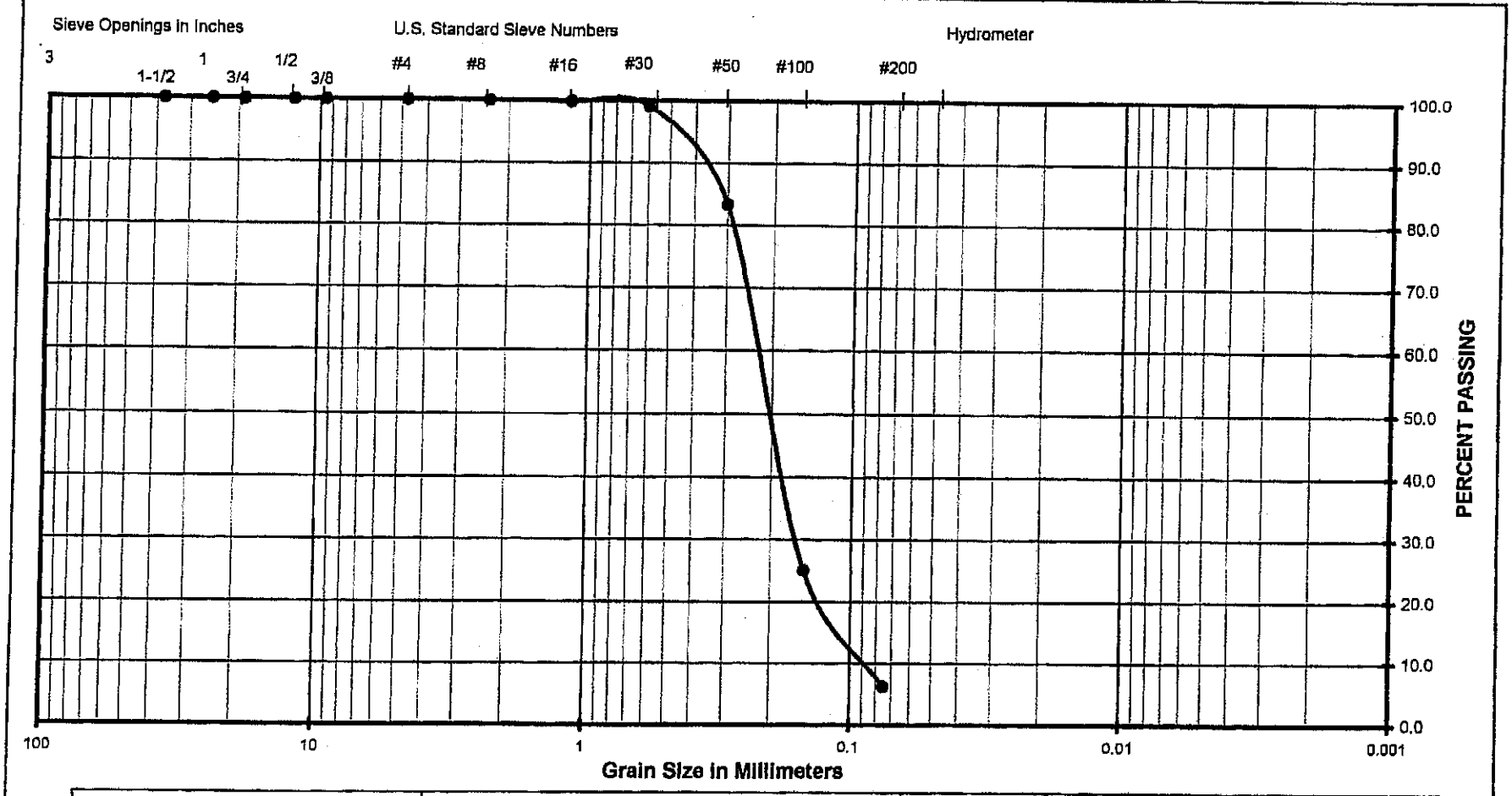
Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Prop. Jefferson Square
Project Number	112-07036
Soil Classification	(SM-SP), Silty Sand - Sand
Sample Number	B-1 @ 5'

Krazan Testing Laboratory

Grain Size Analysis

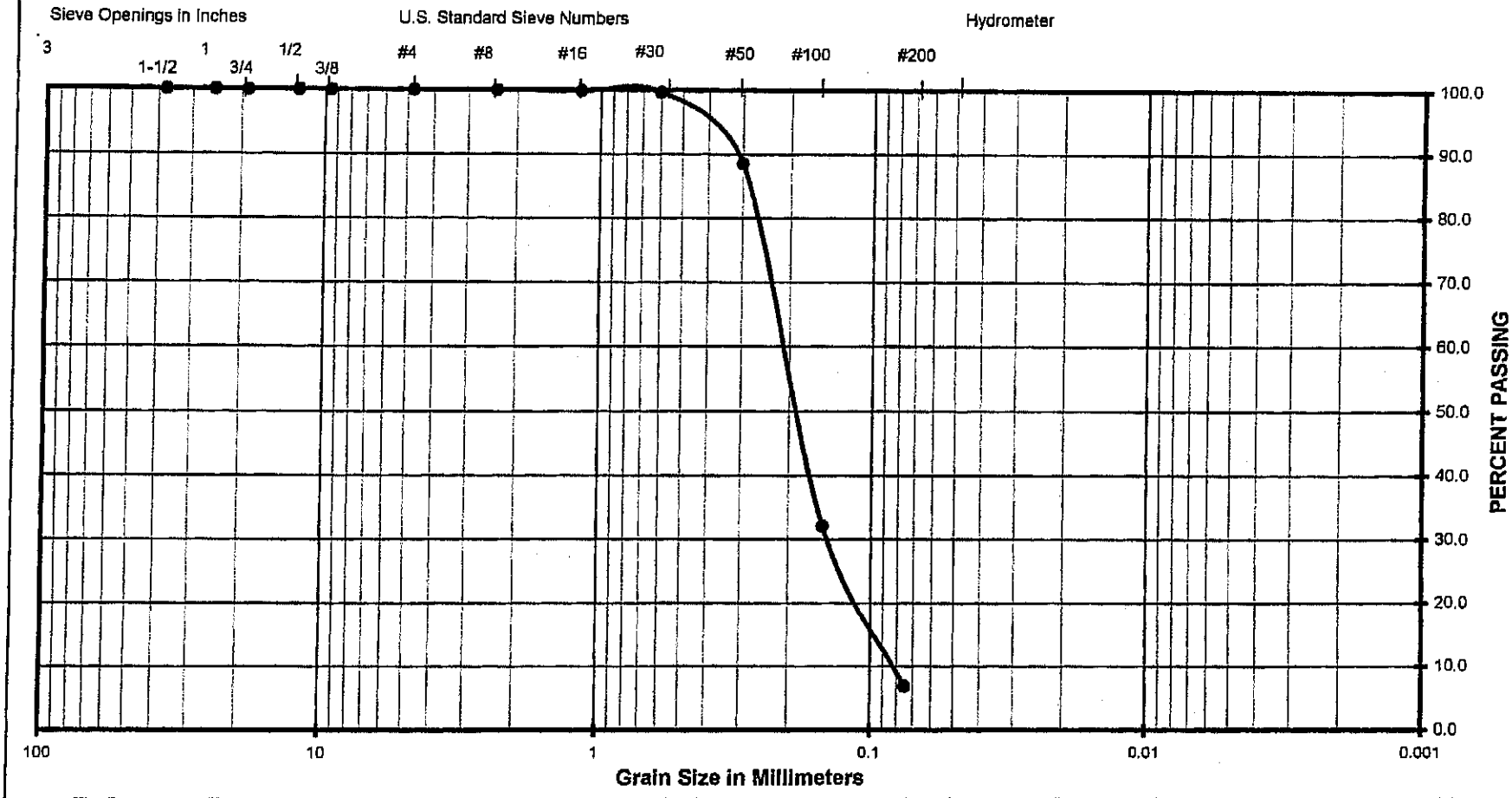


(Unified Soils Classification)

Project Name	Prop. Jefferson Square
Project Number	112-07036
Soil Classification	(SM-SP), Silty Sand - Sand
Sample Number	B-1 @ 15'

Krazan Testing Laboratory

Grain Size Analysis



(Unified Soils Classification)

Project Name	Prop. Jefferson Square
Project Number	112-07036
Soil Classification	(SM-SP), Silty Sand - Sand
Sample Number	B-1 @ 25'

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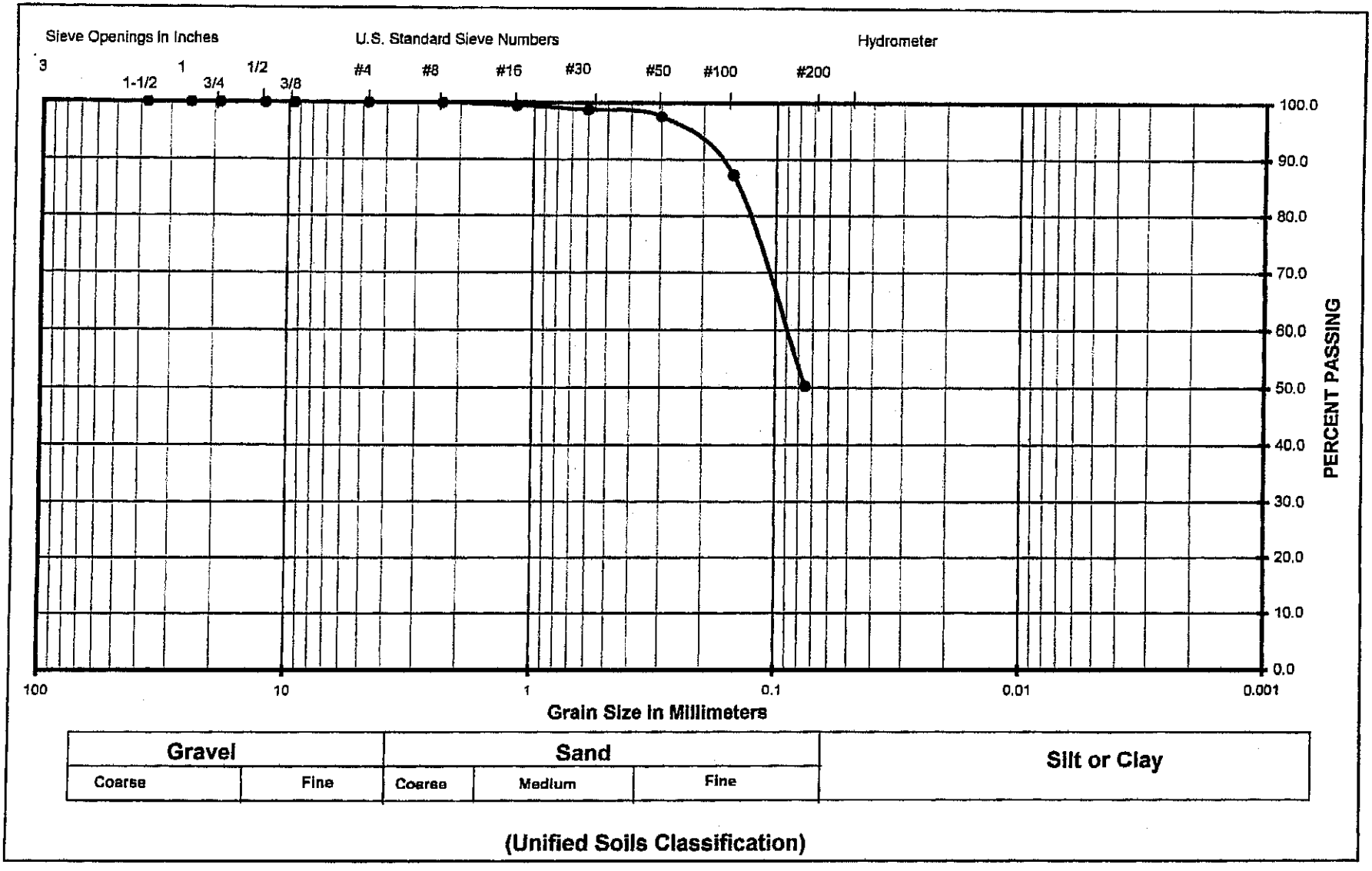
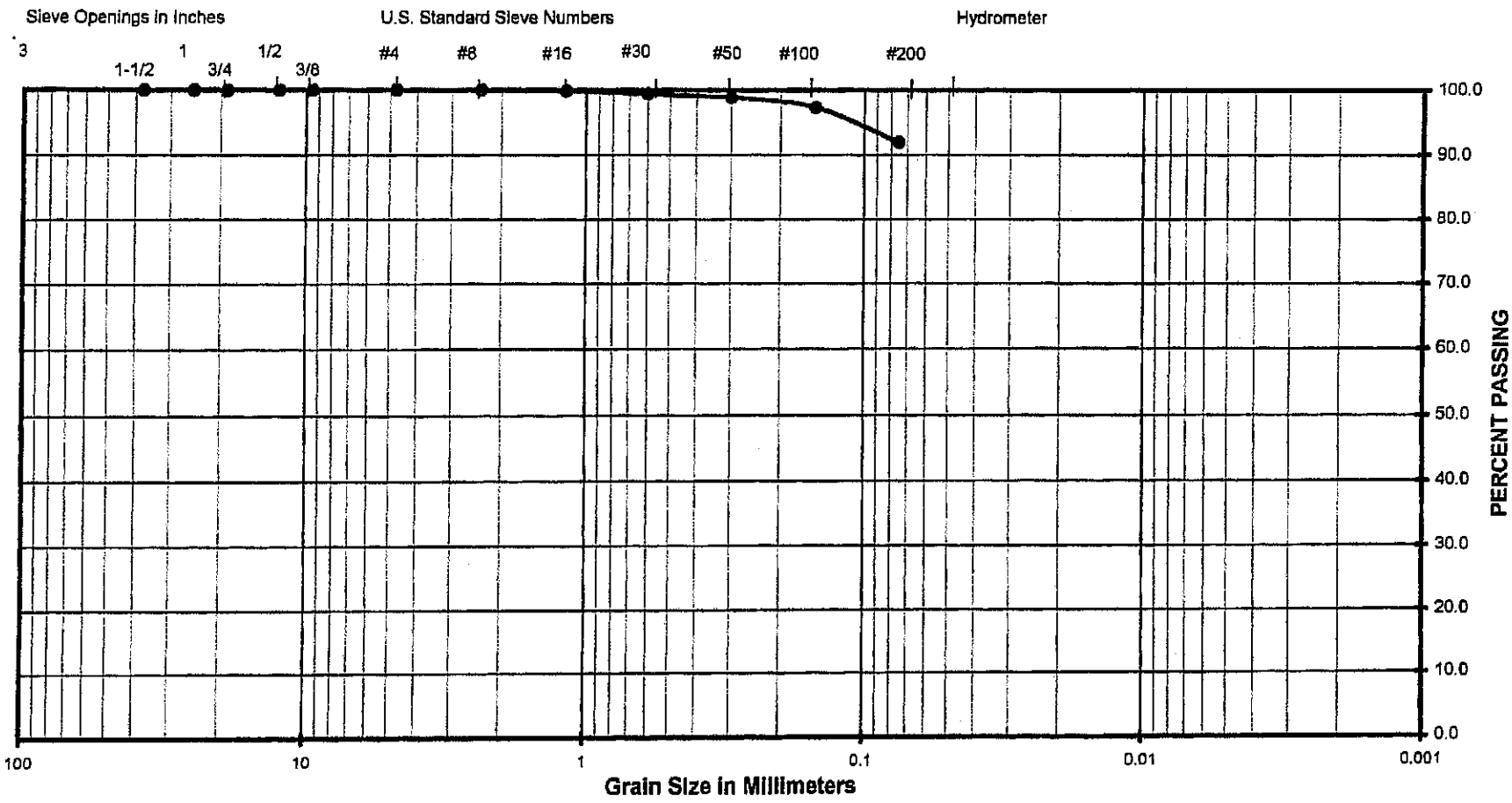
Grain Size Analysis



Project Name	Prop. Jefferson Square
Project Number	112-07036
Soil Classification	(SM-ML), Silty Sand - Sandy Silt
Sample Number	B-1 @ 35'

Krazan Testing Laboratory

Grain Size Analysis



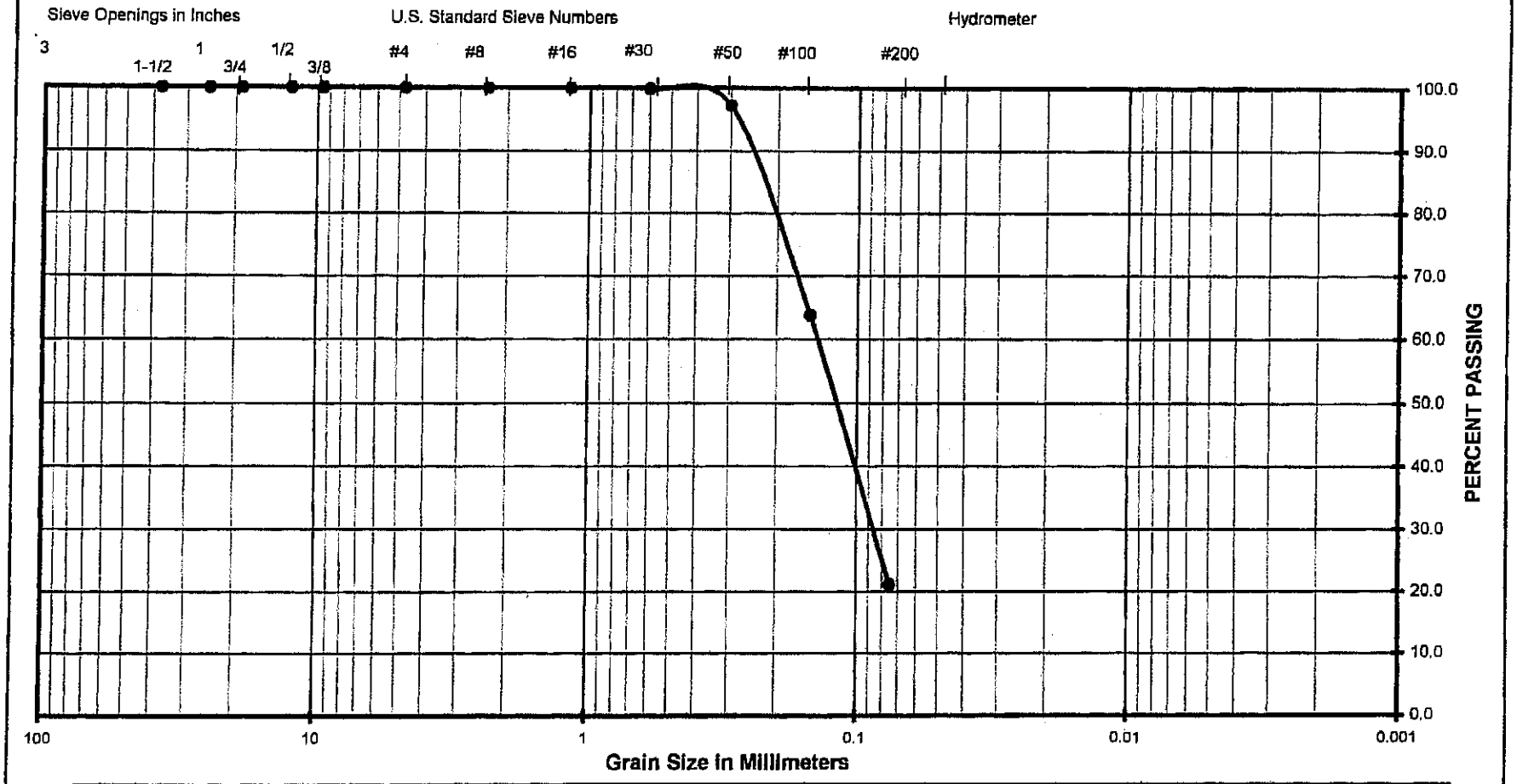
Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Prop. Jefferson Square
Project Number	112-07036
Soil Classification	(ML), Sandy Silt w/ Clay
Sample Number	B-1 @ 40'

Krazan Testing Laboratory

Grain Size Analysis

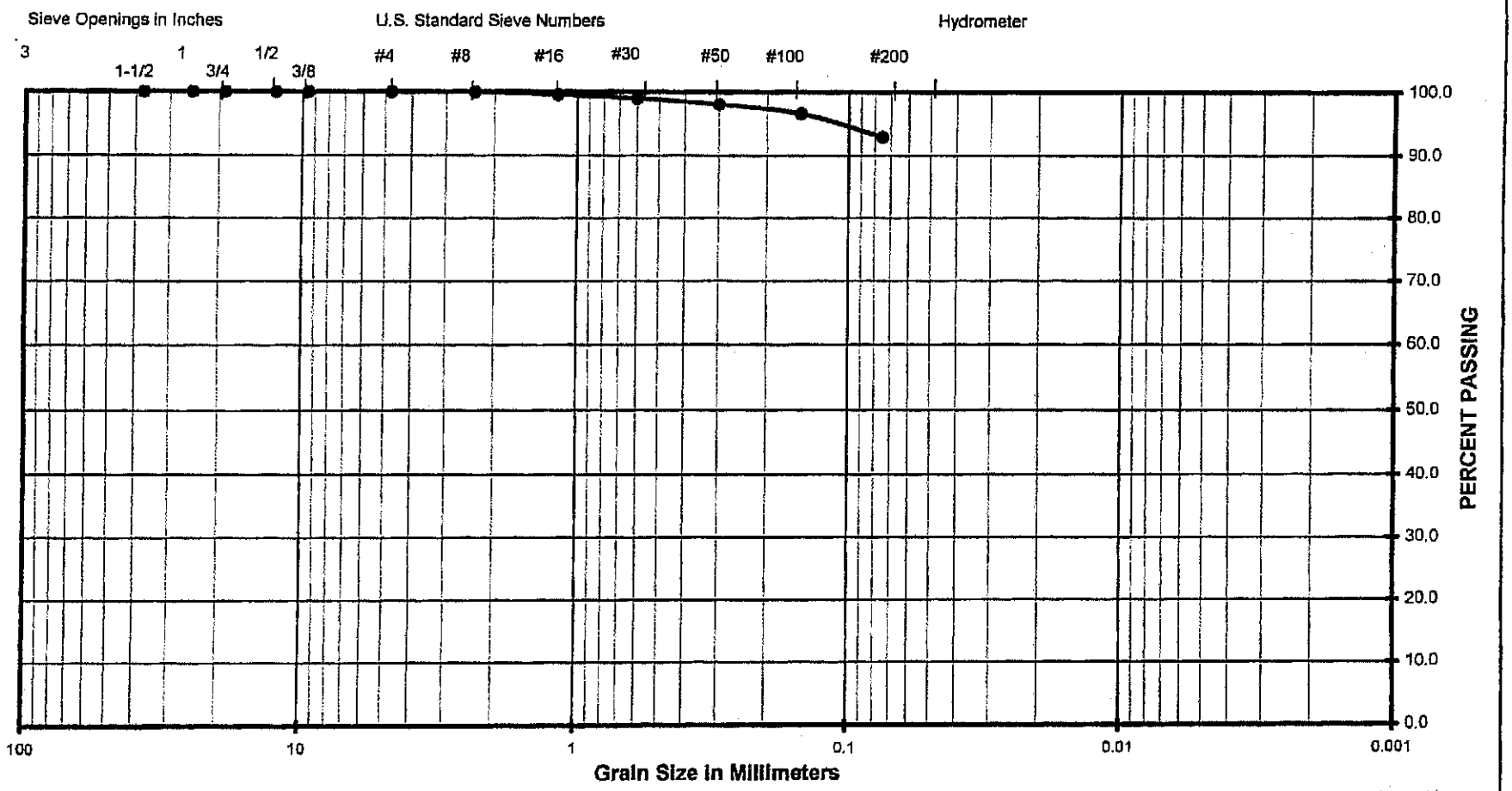


(Unified Soils Classification)

Project Name	Prop. Jefferson Square
Project Number	112-07036
Soil Classification	(SM), Silty Sand
Sample Number	B-1 @ 45'

Krazan Testing Laboratory

Grain Size Analysis



(Unified Soils Classification)

Project Name	Prop. Jefferson Square
Project Number	112-07036
Soil Classification	(ML), Clayey Silt
Sample Number	B-1 @ 50'

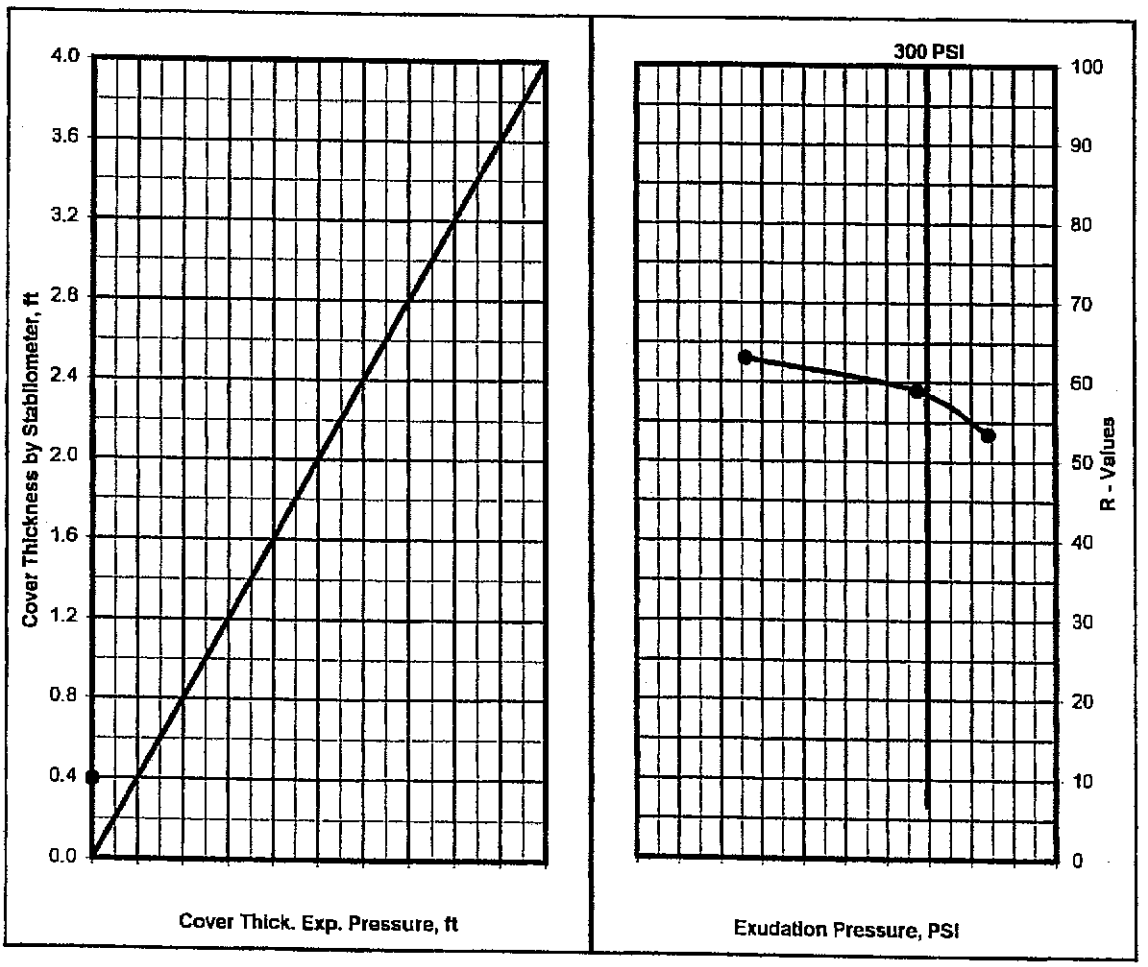
Krazan Testing Laboratory

R - VALUE TEST
ASTM D - 2844 / CAL 301

Project Number	:	112-07036
Project Name	:	Prop. Jefferson Square
Date	:	5/18/07
Sample Location/Curve Number	:	RV# 1 (B-1 @ 0-2')
Soil Classification	:	(SM-SP), Silty Sand -Sand

TEST	A	B	C
Percent Moisture @ Compaction, %	12.6	13.5	14.4
Dry Density, lbm/cu.ft.	107.8	108.1	109.0
Exudation Pressure, psi	740	330	160
Expansion Pressure, (Dial Reading)	0	0	0
Expansion Pressure, psf	0	0	0
Resistance Value R	63	59	53

R Value at 300 PSI Exudation Pressure	**58**
R Value by Expansion Pressure (TI =): 5	**Expansion Pressure nil**



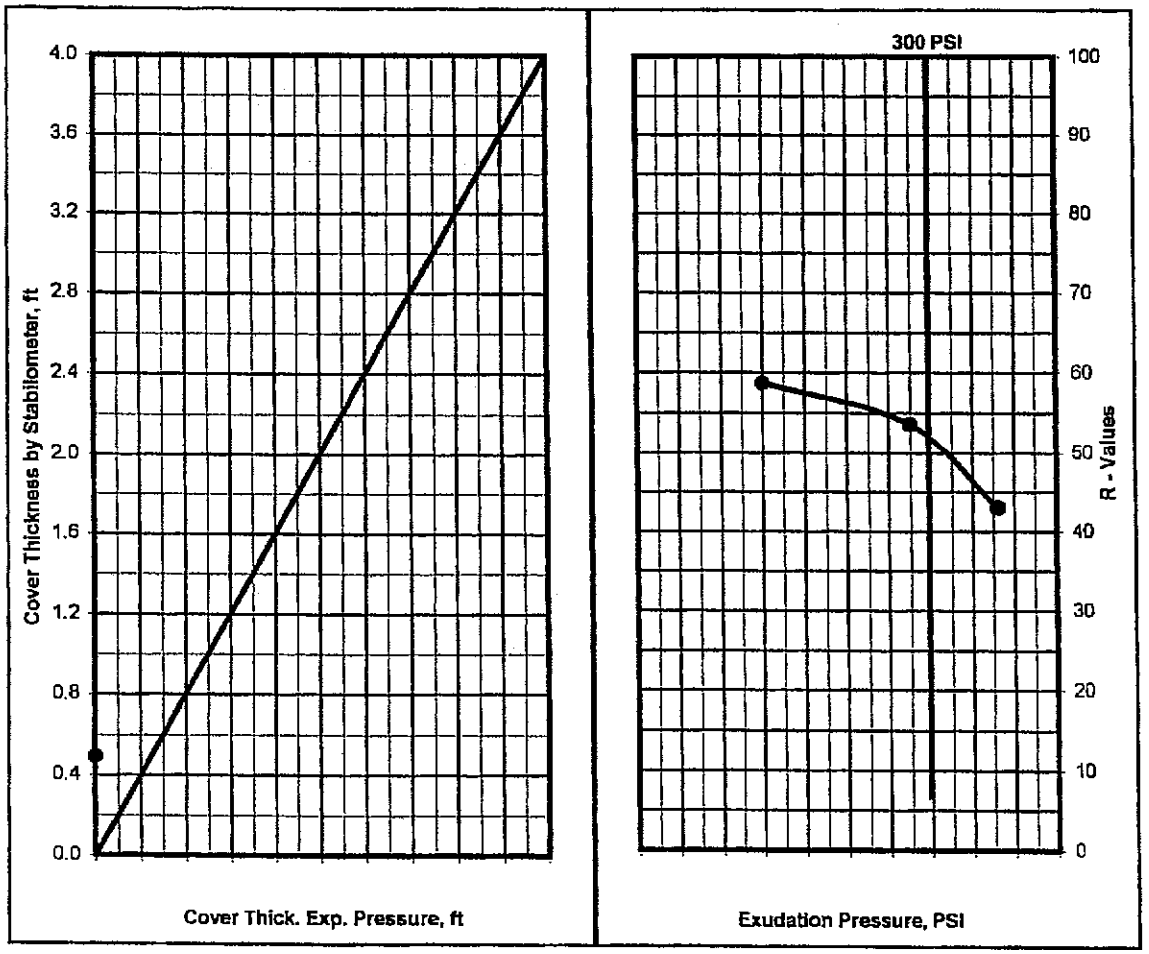
Krazan Testing Laboratory

R - VALUE TEST
ASTM D - 2844 / CAL 301

Project Number	:	112-07036
Project Name	:	Prop. Jefferson Square
Date	:	5/18/07
Sample Location/Curve Number	:	RV# 2 (B-12 @ 0-2')
Soil Classification	:	(SM), Silty Sand

TEST	A	B	C
Percent Moisture @ Compaction, %	11.3	12.2	10.3
Dry Density, lbm/cu.ft.	116.3	116.9	115.7
Exudation Pressure, psi	350	140	700
Expansion Pressure, (Dial Reading)	0	0	0
Expansion Pressure, psf	0	0	0
Resistance Value R	54	43	59

R Value at 300 PSI Exudation Pressure	**52**
R Value by Expansion Pressure (TI =): 5	**Expansion Pressure nil**

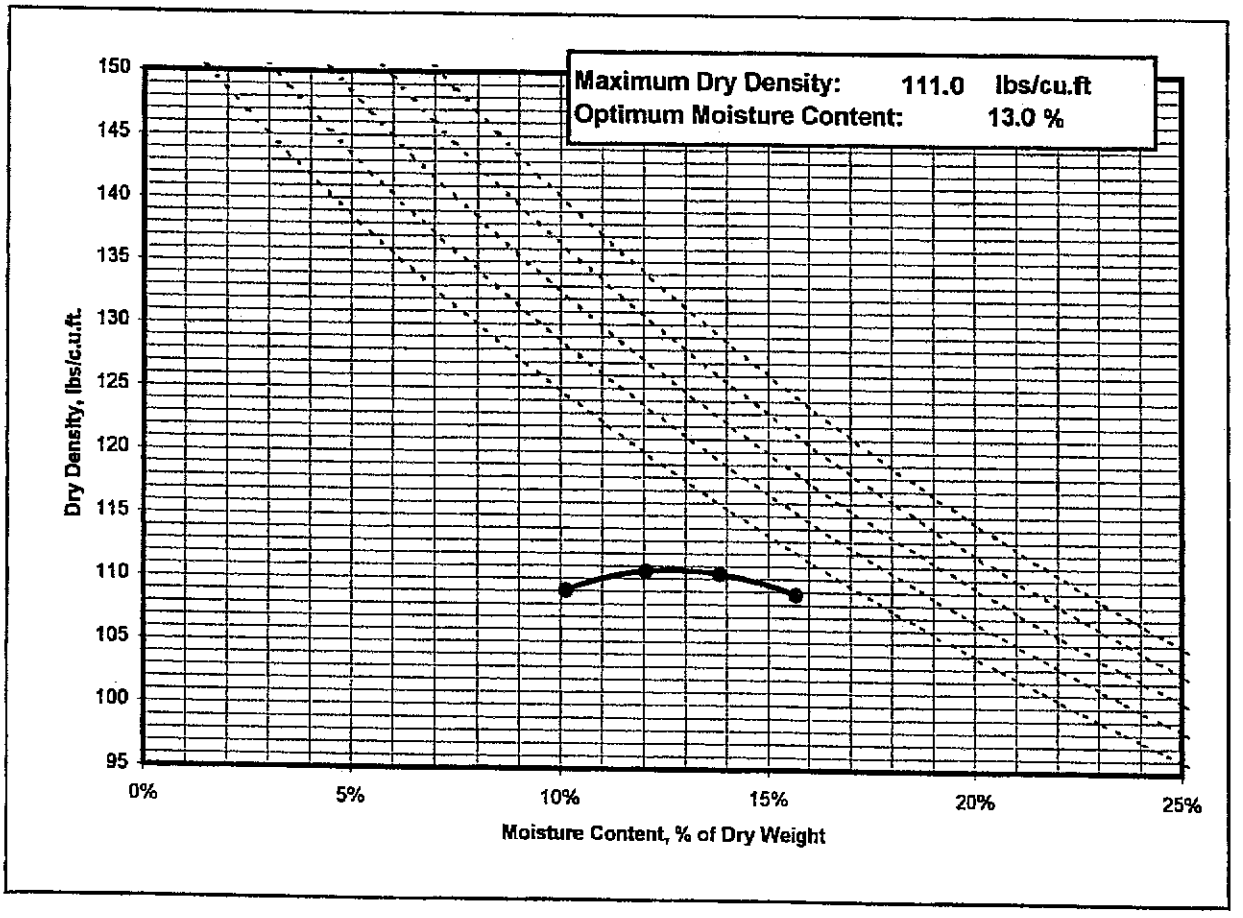


Krazan Testing Laboratory

Laboratory Compaction Curve
ASTM - D1557, D698

Project Number	: 112-07036
Project Name	: Prop. Jefferson Square
Date	: 05/18/07
Sample location	: B-1 @ 0-2'
Sample/Curve Number	: 1
Soil Classification	: (SM-SP), Silty Sand - Sand
Test Method	: 1557 A

	1	2	3	4
Weight of Moist Specimen & Mold, gm	3854.9	3881.2	3884.5	3797.7
Weight of Compaction Mold, gm	1988.8	1988.8	1988.8	1988.8
Weight of Moist Specimen, gm	1866.1	1892.4	1895.7	1808.9
Volume of mold, cu. ft.	0.0332	0.0332	0.0332	0.0332
Wet Density, lbs/cu.ft.	123.9	125.7	125.9	120.1
Weight of Wet (Moisture) Sample, gm	200.0	200.0	200.0	200.0
Weight of Dry (Moisture) Sample, gm	178.5	175.7	172.9	181.6
Moisture Content, %	12.0%	13.8%	15.7%	10.1%
Dry Density, lbs/cu.ft.	110.6	110.4	108.8	109.1

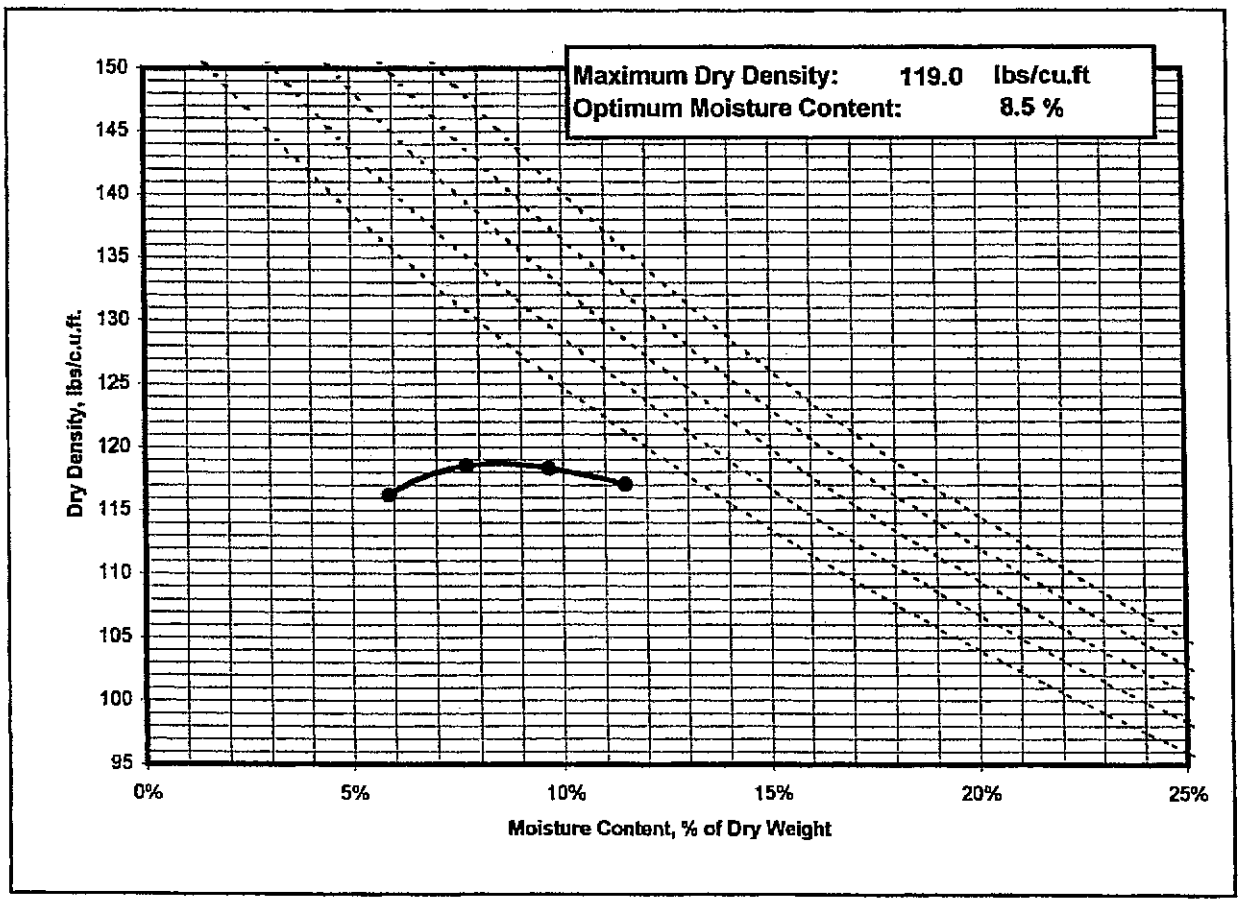


Krazan Testing Laboratory

Laboratory Compaction Curve
ASTM - D1557, D698

Project Number	: 112-07036
Project Name	: Prop. Jefferson Square
Date	: 05/18/07
Sample location	: B-12 @ 0-2'
Sample/Curve Number	: 2
Soil Classification	: (SM), Silty Sand
Test Method	: 1557 A

	1	2	3	4
Weight of Moist Specimen & Mold, gm	3942.8	3954.3	3911.1	3842.1
Weight of Compaction Mold, gm	1988.8	1988.8	1988.8	1988.8
Weight of Moist Specimen, gm	1954.0	1965.5	1922.3	1853.3
Volume of mold, cu. ft.	0.0332	0.0332	0.0332	0.0332
Wet Density, lbs/cu.ft.	129.8	130.5	127.6	123.1
Weight of Wet (Moisture) Sample, gm	200.0	200.0	200.0	200.0
Weight of Dry (Moisture) Sample, gm	182.4	179.4	185.7	188.9
Moisture Content, %	9.6%	11.5%	7.7%	5.9%
Dry Density, lbs/cu.ft.	118.3	117.1	118.5	116.2



Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829/ UBC Std. 18-2

Project Number	: 112-07036
Project Name	: Prop. Jefferson Square
Date	: 5/18/07
Sample location/ Depth	: B-1 @ 0-2'
Sample Number	: 1
Soil Classification	: (SM-SP), Silty Sand - Sand

Trial #	1	2	3
Weight of Soil & Mold, gms	560.3		
Weight of Mold, gms	170.7		
Weight of Soil, gms	389.6		
Wet Density, Lbs/cu.ft.	117.5		
Weight of Moisture Sample (Wet), gms	300.0		
Weight of Moisture Sample (Dry), gms	270.1		
Moisture Content, %	11.1		
Dry Density, Lbs/cu.ft.	105.8		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	50.4		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	--	--	--	--	--	0

Expansion Index $_{measured}$ = 0

Expansion Index $_{50}$ = 0.0

Expansion Index = **0**

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829/ UBC Std. 18-2

Project Number	: 112-07036
Project Name	: Prop. Jefferson Square
Date	: 5/18/07
Sample location/ Depth	: B-12 @ 0-2'
Sample Number	: 2
Soil Classification	: (SM), Silty Sand

Trial #	1	2	3
Weight of Soil & Mold, gms	592.3		
Weight of Mold, gms	185.0		
Weight of Soil, gms	407.3		
Wet Density, Lbs/cu.ft.	122.8		
Weight of Moisture Sample (Wet), gms	300.0		
Weight of Moisture Sample (Dry), gms	275.6		
Moisture Content, %	8.9		
Dry Density, Lbs/cu.ft.	112.8		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	48.5		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	--	--	--	--	--	0

Expansion Index $_{measured}$ = 0

Expansion Index $_{50}$ = 0.0

Expansion Index = **0**

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **Krazan & Associates, Inc.**
4221 Brickell St.
Ontario, CA 91761
Tel(909)974-4400 Fax(909)974-4022

PROJECT: **La Quinta**
MATRIX: SOIL — DATE RECEIVED: 05/18/07
SAMPLING DATE: 05/14/07 — DATE ANALYZED: 05/18-19/07
REPORT TO: MR. CLARENCE JIANG — DATE REPORTED: 05/21/07

SAMPLE I.D.: **112-07036/B-1@0-2'** LAB I.D.: 070518-62

PARAMETER	SAMPLE RESULT	UNIT	PQL	DF	METHOD
RESISTIVITY	12500	OHMS-CM	100000*	--	CALTRANS
SULFATE	ND	MG/KG	10	5^	EPA 9038
CHLORIDE	23.4	MG/KG	10	1	EPA 9253
pH	9.02	pH/Unit	--	--	EPA 9045C

COMMENTS
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = DF X PQL
^ = ACTUAL DETECTION LIMIT RAISED DUE TO MATRIX INTERFERENCE
MG/KG = MILLIGRAM PER KILOGRAM = PPM
OHMS-CM = OHMS-CENTIMETER
RESISTIVITY = 1/CONDUCTIVITY
* = HIGH LIMIT

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

APPENDIX B

GENERAL EARTHWORK SPECIFICATIONS

GENERAL

When the text of the report conflicts with the general specifications in this appendix, the recommendations in the report have precedence.

SCOPE OF WORK: These specifications and applicable plans pertain to and include all earthwork associated with the site rough grading, including, but not limited to, the furnishing of all labor, tools and equipment necessary for site clearing and grubbing, stripping, preparation of foundation materials for receiving fill, excavation, processing, placement and compaction of fill and backfill materials to the lines and grades shown on the project grading plans and disposal of excess materials.

PERFORMANCE: The Contractor shall be responsible for the satisfactory completion of all earthworks in accordance with the project plans and specifications. This work shall be inspected and tested by a representative of Krazan and Associates, Incorporated, hereinafter referred to as the Soils Engineer and/or Testing Agency. Attainment of design grades, when achieved shall be certified by the project Civil Engineer. Both the Soils Engineer and the Civil Engineer are the Owner's representatives. If the Contractor should fail to meet the technical or design requirements embodied in this document and on the applicable plans, he shall make the necessary adjustments until all work is deemed satisfactory as determined by both the Soils Engineer and the Civil Engineer. No deviation from these specifications shall be made except upon written approval of the Soils Engineer, Civil Engineer, or project Architect.

No earthwork shall be performed without the physical presence or approval of the Soils Engineer. The Contractor shall notify the Soils Engineer at least 2 working days prior to the commencement of any aspect of the site earthwork.

The Contractor agrees that he shall assume sole and complete responsibility for job site conditions during the course of construction of this project, including safety of all persons and property; that this requirement shall apply continuously and not be limited to normal working hours; and that the Contractor shall defend, indemnify and hold the Owner and the Engineers harmless from any and all liability, real or alleged, in connection with the performance of work on this project, except for liability arising from the sole negligence of the Owner or the Engineers.

TECHNICAL REQUIREMENTS: All compacted materials shall be densified to no less that 95 percent of relative compaction based on ASTM D1557-00 Test Method, UBC or CAL-216, as specified in the technical portion of the Soil Engineer's report. The location and frequency of field density tests shall be as determined by the Soils Engineer. The results of these tests and compliance with these specifications shall be the basis upon which satisfactory completion of work will be judged by the Soils Engineer.

SOILS AND FOUNDATION CONDITIONS: The Contractor is presumed to have visited the site and to have familiarized himself with existing site conditions and the contents of the data presented in the Geotechnical Engineering Report.

The Contractor shall make his own interpretation of the data contained in the Geotechnical Engineering Report and the Contractor shall not be relieved of liability under the Contractor for any loss sustained as a result of any variance between conditions indicated by or deduced from said report and the actual conditions encountered during the progress of the work.

DUST CONTROL: The work includes dust control as required for the alleviation or prevention of any dust nuisance on or about the site or the borrow area, or off-site if caused by the Contractor's operation either during the performance of the earthwork or resulting from the conditions in which the Contractor leaves the site. The Contractor shall assume all liability, including court costs of codefendants, for all claims related to dust or wind-blown materials attributable to his work.

SITE PREPARATION

Site preparation shall consist of site clearing and grubbing and preparation of foundation materials for receiving fill.

CLEARING AND GRUBBING: The Contractor shall accept the site in this present condition and shall demolish and/or remove from the area of designated project earthwork all structures, both surface and subsurface, trees, brush, roots, debris, organic matter and all other matter determined by the Soils Engineer to be deleterious. Such materials shall become the property of the Contractor and shall be removed from the site.

Tree root systems in proposed building areas should be removed to a minimum depth of 3 feet and to such an extent, which would permit removal of all roots greater than 1 inch in diameter. Tree roots removed in parking areas may be limited to the upper 1½ feet of the ground surface. Backfill or tree root excavation should not be permitted until all exposed surfaces have been inspected and the Soils Engineer is present for the proper control of backfill placement and compaction. Burning in areas, which are to receive fill materials, shall not be permitted.

SUBGRADE PREPARATION: Surfaces to receive Engineered Fill, shall be prepared as outlined above, excavated/scarified to a minimum depth of 8 inches, moisture-conditioned as necessary, and recompacted to at least 95 percent relative compaction.

Loose soil areas and/or areas of disturbed soil shall be moisture-conditioned as necessary and recompacted to 95 percent relative compaction. All ruts, hummocks, or other uneven surface features shall be removed by surface grading prior to placement of any fill materials. All areas, which are to receive fill materials, shall be approved by the Soils Engineer prior to the placement of any of the fill material.

EXCAVATION: All excavation shall be accomplished to the tolerance normally defined by the Civil Engineer as shown on the project grading plans. All over-excavation below the grades specified shall be backfilled at the Contractor's expense and shall be compacted in accordance with the applicable technical requirements.

FILL AND BACKFILL MATERIAL: No material shall be moved or compacted without the presence of the Soils Engineer. Material from the required site excavation may be utilized for construction site fills, provided prior approval is given by the Soils Engineer. All materials utilized for constructing site fills shall be free from vegetation or other deleterious matter as determined by the Soils Engineer.

PLACEMENT, SPREADING AND COMPACTION: The placement and spreading of approved fill materials and the processing and compaction of approved fill and native materials shall be the responsibility of the Contractor. However, compaction of fill materials by flooding, ponding, or jetting shall not be permitted unless specifically approved by local code, as well as the Soils Engineer.

Both cut and fill shall be surface-compacted to the satisfaction of the Soils Engineer prior to final acceptance.

SEASONAL LIMITS: No fill material shall be placed, spread, or rolled while it is frozen or thawing, or during unfavorable wet weather conditions. When the work is interrupted by heavy rains, fill operations shall not be resumed until the Soils Engineer indicates that the moisture content and density of previously placed fill is as specified.

APPENDIX C

GENERAL PAVEMENT SPECIFICATIONS

1. DEFINITIONS - The term "pavement" shall include asphalt concrete surfacing, untreated aggregate base, and aggregate subbase. The term "subgrade" is that portion of the area on which surfacing, base, or subbase is to be placed.

The term "Standard Specifications": hereinafter referred to is the January 1999 Standard Specifications of the State of California, Department of Transportation, and the "Materials Manual" is the Materials Manual of Testing and Control Procedures, State of California, Department of Public Works, Division of Highways. The term "relative compaction" refers to the field density expressed as a percentage of the maximum laboratory density as defined in the ASTM D1557-00.

2. SCOPE OF WORK - This portion of the work shall include all labor, materials, tools, and equipment necessary for, and reasonably incidental to the completion of the pavement shown on the plans and as herein specified, except work specifically notes as "Work Not Included."

3. PREPARATION OF THE SUBGRADE - The Contractor shall prepare the surface of the various subgrades receiving subsequent pavement courses to the lines, grades, and dimensions given on the plans. The upper 12 inches of the soil subgrade beneath the pavement section shall be compacted to a minimum relative compaction of 95 percent. The finished subgrades shall be tested and approved by the Geotechnical Engineer prior to the placement of additional pavement courses.

4. UNTREATED AGGREGATE BASE - The aggregate base material shall be spread and compacted on the prepared subgrade in conformity with the lines, grades, and dimensions shown on the plans. The aggregate base material shall conform to the requirements of Section 26 of the Standard Specifications for Class 2 material, ¾-inches maximum size. The aggregate base material shall be compacted to a minimum relative compaction of 95 percent. The aggregate base material shall be spread and compacted in accordance with Section 26 of the Standard Specifications. The aggregate base material shall be spread in layers not exceeding 6 inches and each layer of aggregate material course shall be tested and approved by the Geotechnical Engineer prior to the placement of successive layers.

5. AGGREGATE SUBBASE - The aggregate subbase shall be spread and compacted on the prepared subgrade in conformity with the lines, grades, and dimensions shown on the plans. The aggregate subbase material shall conform to the requirements of Section 25 of the Standard Specifications for Class II material. The aggregate subbase material shall be compacted to a minimum relative compaction of 95 percent, and it shall be spread and compacted in accordance with Section 25 of the Standard Specifications. Each layer of aggregate subbase shall be tested and approved by the Geotechnical Engineer prior to the placement of successive layers.

6. **ASPHALT CONCRETE SURFACING** - Asphalt concrete surfacing shall consist of a mixture of mineral aggregate and paving grade asphalt, mixed at a central mixing plant and spread and compacted on a prepared base in conformity with the lines, grades, and dimensions shown on the plans. The viscosity grade of the asphalt shall be AR-8000. The mineral aggregate shall be Type B, ½-inch or ¾-inch maximum, medium grading, for the wearing course and ¾-inch maximum, medium grading for the base course, and shall conform to the requirements set forth in Section 39 of the Standard Specifications. The drying, proportioning, and mixing of the materials shall conform to Section 39.

The prime coat, spreading and compacting equipment, and spreading and compacting the mixture shall conform to the applicable chapters of Section 39, with the exception that no surface course shall be placed when the atmospheric temperature is below 50 degrees F. The surfacing shall be rolled with a combination steel-wheel and pneumatic rollers, as described in Section 39-6. The surface course shall be placed with an approved self-propelled mechanical spreading and finishing machine.

7. **FOG SEAL COAT** - The fog seal (mixing type asphalt emulsion) shall conform to and be applied in accordance with the requirements of Section 37.

Krazan & ASSOCIATES, INC.

GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION

July 8, 2008

KA Project No. 112-07036

Mr. Thomas Middleton
Regency Centers Inc.
36 Executive Park, Suite 100
Irvine, CA 92614

RE: Percolation Rate Study
Proposed Shopping Center
Jefferson Street and Fred Waring Drive
La Quinta, California

Dear Mr. Middleton:

In accordance with your request, we have performed percolation testing at the subject site. This report documents the services and provides the results of our field and laboratory study.

PURPOSE AND SCOPE

This study was conducted to measure the approximate percolation rates within the near-surface strata of the site. It is our understanding that the data will be used by the project design team in their development of the on site storm water disposal system. The percolation testing conducted at the subject site was performed in general accordance with the City of La Quinta, Public Works Department, Engineering Bulletin #06-16, Hydrology and Hydraulic Report Criteria for Storm Drain Systems, USBR Percolation Test Standard. Our scope of services was outlined in our change order dated June 11, 2008 (KA Project No. 112-07036) and included the following:

- Conducting three (3) percolation tests within the area of the proposed detention basins at the subject site. Two of the percolation tests were performed at depths of approximately 10 to 13 feet below existing grade. The percolation test for the underground basin was performed at a depth of approximately 20 to 23 feet below the existing grade.

- A total of three exploratory borings were performed adjacent to the percolation tests. These exploratory borings were extended to a depth of at least 15 feet below the bottom of each test.

- Preparation of this report summarizing the results of our investigation.

SITE LOCATION AND SITE DESCRIPTION

The proposed site is located at the intersection of Jefferson Street and Fred Waring Drive in La Quinta, California. The site is roughly rectangular in shape and roughly sloping to the north and east. At the time of our field investigation and testing program, the site was undeveloped and covered with sparse bushes and exposed soil.

SOIL PROFILE AND SUBSURFACE CONDITIONS

The subsurface profile generally consisted of loose to dense fine sand and fine silty sands extending to the maximum depth explored. During the excavation of the borings, continuous visual and physical examination was conducted on the soil cuttings. Significant silt or clay layers/lenses were not identified as being encountered in any of the borings at the site.

Corrosion tests were performed to evaluate the soil corrosivity to the buried structures. The results of the tests are included as follows:

Parameter	Results	Test Method
Resistivity	2,460 ohms-cm	Caltrans
Sulfate	268 mg/kg	EPA 9038
Chloride	117 mg/kg	EPA 9253
pH	7.52	EPA 9045C

Excessive sulfate or chloride in either the soil or native water may result in an adverse reaction between the cement in concrete and the soil. California Building Code has developed criteria for evaluation of sulfate and chloride levels and how they relate to cement reactivity with soil and/or water. The soil samples from the subject site were tested to have a low sulfate and chloride concentrations. Therefore, no special design requirements are necessary to compensate for sulfate or chloride reactivity with the cement. Electrical resistivity testing of the soil indicates that the onsite soils may have a mild potential for metal loss from electrochemical corrosion process.

PERCOLATION TESTING

Two methods for percolation testing are given in the City of La Quinta, Public Works Department, Engineering Bulletin #06-16, Hydrology and Hydraulic Report Criteria for Storm Drain Systems, USBR Percolation Test Standard. Either ASTM Double Ring Infiltrometer Test or U.S. Bureau of Reclamation Test were recommended by the City of La Quinta as approved test methods. The U.S. Bureau of Reclamation method was determined to be the most prudent for the subject site.

The test locations are presented on the attached site plan, Figure 1. Detail results of the percolation tests are attached. The data is presented in tabular format. The soil percolation rates are based on tests conducted with clean water. The infiltration rates may vary with time as a result of soil clogging from water impurities. A factor of safety should be incorporated into the design of the basins to compensate

for these factors. In addition, periodic maintenance consisting of clearing the bottom of the basins should be expected.

The highest percolation rate ranges from 4.25 inches to 6.5 inches per hour. A minimum factor of safety of 2.0 should be assigned to this value. The recommended design percolation rate should be a maximum of 2.0 inches per hour.

LIMITATIONS

Geotechnical Engineering is one of the newest divisions of Civil Engineering. This branch of Civil Engineering is constantly improving as new technologies and understanding of earth sciences advance. Although our services were conducted in accordance with current engineering practice, undoubtedly there will be substantial future improvements in this branch of engineering. In addition to advancements in the field of Soils Engineering, physical changes in the site, either due to excavation or fill placement, new agency regulations, or possible changes in the proposed structure after the soils report is completed may require the soils report to be professionally reviewed. In light of this, the Owner should be aware that there is a practical limit to the usefulness of this report without critical review. Although the time limit for this review is strictly arbitrary, it is suggested that 1 year be considered a reasonable time for the usefulness of this report.

The scope of our services did not include a groundwater study and was limited to the performance of percolation testing and the submitted of the data only. Our services did not include those associated with an Environmental Site Assessment for the presence or absence of hazardous and/or toxic materials in the soil, groundwater, or atmosphere; or the presence of wetlands. Any statements, or absence of statements, in this report regarding odors, unusual or suspicious items, or conditions observed, are strictly for descriptive purposes and are not intended to convey engineering judgment regarding potential hazardous and/or toxic assessment.

The geotechnical engineering information presented herein is based upon professional interpretation utilizing standard engineering practices. The work conducted through the course of this investigation, including the preparation of this report, have been performed in accordance with the generally accepted standards of geotechnical engineering practice, which existed in the geographic area at the time the report was written. No other warranty, express or implied, is made.

It is not warranted that such information and interpretation cannot be superseded by future geotechnical engineering developments. We emphasize that this report is valid for the project outlined above and should not be used for any other sites.

If you have any questions regarding the services performed or the data reported herein, or if we may be of further assistance, please do not hesitate to contact our office at (909) 974-4400.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

Christopher Robinson, PG
Project Geologist
PG No. 8420

James M. Kellogg, PE
Project Engineer
RCE No. 65092

CR/JMK:rm

Attachments: Figure 1, Site Plan
Results of Percolation Tests
Boring Logs

Krazan & ASSOCIATES, INC.

GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION

August 4, 2008 KA Project No. 112-07036

Mr. Thomas Middleton
Regency Centers Inc.
36 Executive Park, Suite 100
Irvine, CA 92614

RE: Report Update
Proposed Shopping Center
Jefferson Street and Fred Waring Drive
La Quinta, California

Dear Mr. Middleton:

Based on our review of our Geotechnical Engineering Investigation Report dated May 25, 2007, all subsequent letters, and recent site visit, the above mentioned report is considered, from a geotechnical standpoint, to remain valid for the proposed development.

The recommendations and limitations provided in the geotechnical engineering investigation report and all subsequent letters apply to this project. If you have any questions, or if we can be of further assistance, please do not hesitate to contact our office at (909) 974-4400.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

Christopher Robinson, PG
Project Geologist
PG No. 8420

James M. Kellogg, RE
Project Engineer
RCE No. 65092

CR/JMK:rm

Krazan & ASSOCIATES, INC.

GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION

May 30, 2008 KA Project No. 112-07036

Mr. Thomas Middleton
Regency Centers, Inc.
36 Executive Park, Suite 100
Irvine, CA 92614

RE: Addendum Letter
Proposed Jefferson Square (Phase I)
Jefferson Street and Fred Waring Drive
La Quinta, California

Dear Mr. Middleton:

In accordance with Development Resource Consultants, Inc. request, we are supplying this letter to clarify recommendations and requirements as they pertain to the geotechnical aspects of the project.

Comment 1

"Fill Placement: on page 8, fill material is called out to be placed at 95% relative compaction. This is often difficult to achieve in the field and exceeds the more common requirement of 90% relative compaction for general fill. Please confirm your recommendations."

Response to Comment 1

The on-site soils consist of sandy material, and such, it is our experience that these soils can be placed at a relative compaction of 95% with reasonable compaction effort.

Comment 2

"Floor Slabs: On page 10 of the soils report, the recommendations is for floor slabs with 3 inches of compacted gravel, ¾ inch maximum size, below a vapor retarder sheeting and 2" to 4" of sand on top. Typical installations use sand, in lieu of gravel, to avoid puncturing the vapor barrier (2" sand – vapor barrier – 2" sand, is a common section). Please Clarify the recommended section."

Response to Comment 2

It is our recommendation that a capillary break be used, 4 inches of sand with a vapor barrier placed below the slabs-on-grade. The placement is at the discretion of the project owner. It is our understanding that the project owner does not intend to use a vapor barrier beneath the slabs-on-grade. The placement of the vapor barrier is our recommendation and not a requirement. If the vapor barrier system is eliminated, Krazan has no liability with regards to issues associated with moisture vapor transmission

Comment 3

Floor Slabs: The soils report does not make a recommendation for the minimum thickness of the concrete floor slab. Please add this to your report.

Response to Comment 3

The thickness of the slabs must be determined by the structural engineer and the criteria he determines impacts the slab. It is our recommendation that a minimum slab thickness of five inches (5") with number three bars (#3) reinforcement, eighteen inches (18") on center, each way be placed.

Comment 4

Pavement Design: The Developer would like to use Crushed Miscellaneous Base (CMB) in lieu of Class 2 Aggregate Base. I would recommend using Greenbook Standard Specification Section 200-2.4, 2006 edition, for CMB, unless an alternative Caltrans Specification is Available. Please Confirm this substitution changes the recommended pavement sections shown in Table on Page 12 of the Soils Report.

Response to Comment 4

It is our recommendation that Class 2 Base be used. The placement and type of base used is at the discretion of the project owner. It is the project Civil Engineer's design that determines the actual needed thickness based on the proposed design loads for the pavement sections. It is recommended that if CMB is used in lieu of Class 2 Aggregate Base, then Green-book Standard Specification Section 200-2.4, 2006 edition be followed.

Comment 5

Pavement Design: What is the life span of the current recommended pavement sections shown in the Table on page 12 of Soils Report?

Response to Comment 5

The life span of the pavement section shown on Page 12 of the Initial Geotechnical investigation is 20 years. This considers regular and routine maintenance of the pavement areas.

Comment 6

Pavement Design: The project will widen Fred Waring Drive as part of the Required Official Site Improvements. The City has Assigned a Traffic Index of 9 for this Major Arterial Street with a minimum section 5.5"AC over 6.5"CAB, based on an R-value of 50. I would like Krazan to confirm that the City's Minimum pavement section is appropriate for design purposes. Attached is a copy of the City's Structural section for AC paving" Handout.

Response to Comment 6

The recommended minimum thickness of the AC and CAB was outlined in the initial geotechnical investigation based on an R-value of 50. The City's minimum thickness for a traffic index of 9 is greater than our recommendation. The minimum thickness of the AC and AB should be equal to or greater than

the City's minimum requirements. Our report listed a recommendation only, and it is the discretion of the project owner to meet or exceed our recommendations. The city that has jurisdiction over the project has the right to specify any requirement equal or greater than our recommendation, and those requirements should be followed as to conform to the local jurisdictions requirements and interpretation of the IBC or CBC or any addendum of said jurisdiction.

Comment 7

City Review Comments: The precise Grading Plan First check submittal to the City of La Quinta was returned to us with Comments to the Krazan Soils Report. Attached with this letter are the Original comments provide to us by the City. Please Address these comments and provide us with a letter that we can submit to the City for 2nd Plan Check. Include with this letter should be city plan check comments.

Response to Comment 7

Attached is the addendum letter to the City of La Quinta Plan Review Comments.

The recommendations and limitations provided in the Geotechnical Engineering Investigation report apply to this letter. If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office at (909) 974-4400.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

Christopher Robinson, PG
Project Geologist
PG No. 8420

PROFESSIONAL GEOLOGIST
CHRISTOPHER ROBINSON
No. 8420
Exp. 10/08
STATE OF CALIFORNIA

James M. Kellogg, PE
Project Manager
RCE No. 65092

CR/JMK:rm
cc: Addressee (4)

DRC Development Resource Consultants, Inc.
Civil Engineering • Land Surveying • Land Planning

May 16, 2008 Job No. C07-304

Mr. James Kellogg
Krazan & Associates, Inc.
4221 Brickell Street
Ontario, CA 91761
Tel. 909-974-4400

RE: Jefferson Square, La Quinta, SWC Jefferson St. & Fred Waring Dr.
Geotechnical Engineering Investigation - Request for Information

Dear Jim:

DRC is requesting clarification of the following items in your Geotechnical Engineering Investigation (Soils Report) dated May 25, 2007 (Krazan Project No. 112-07036):

1. Fill Placement. On Page 8, fill material is called out to be placed at 95% relative compaction. This is often difficult to achieve in the field and exceeds the more common requirement of 90% relative compaction for general fill. Please confirm your recommendation.

2. Floor Slabs. On Page 10 of the Soils Report, the recommendation is for a floor slabs with 3 inches of compacted gravel, ¾-inch maximum size, below a vapor retarder sheeting and 2" to 4" of sand on top. Typical installations use sand, in lieu of the gravel, to avoid puncturing the vapor barrier (2" sand – vapor barrier – 2" sand, is a common section). Please clarify the recommended section.

3. Floor Slabs. The Soils Report does not make a recommendation for the minimum thickness of the concrete floor slab. Please add this to your report.

4. Pavement Design. The Developer would like to use Crushed Miscellaneous Base (CMB) in lieu of Class 2 Aggregate Base. I would recommend using Greenbook Standard Specification Section 200-2.4, 2006 Edition, for CMB, unless an alternative Caltrans Specification is available. Please confirm if this substitution changes the recommended pavement sections shown in the Table on Page 12 of the Soils Report.

5. Pavement Design. What is the life span of the current recommended pavement sections shown in the Table on Page 12 of Soils Report?

6. Pavement Design. The Project will widen Fred Waring Drive as part of the required off-site improvements. The City has assigned a Traffic Index of 9 for this Major Arterial Street with a minimum section 5.5" AC over 6.5" CAB, based on an R-Value of 50. I would like Krazan to confirm that the City's minimum pavement section is appropriate for design purposes. Attached is a copy of the City's "Structural Section for AC Paving" handout.

7. City Review Comments. The Precise Grading Plan first check submittal to the City of La Quinta was returned to us with comments to the Krazan Soils Report. Attached with this letter are the original comments provided to us by the City. Please address these comments and provide us with a letter that we can submit to the City for 2nd plan check. Included with this letter should be city plan check comments.

Please call me if you have any questions.

Sincerely,
Development Resource Consultants, Inc.

Ronald W. Sklepko, P.E.
Vice President

RWS/rws
Kellogg Jim Krazan ltr01.051608.doc

c: Tom Middleton, Regency Centers
Rob Grant, Regency Centers
Mike Flynn, KTGY Architects

Krazan & ASSOCIATES, INC.

GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION

May 30, 2008

KA Project No. 112-07036

Mr. Thomas Middleton
Regency Centers Inc.
36 Executive Park, Suite 100
Irvine, CA 92614

RE: **Addendum Letter # 2**
Proposed Shopping Center
Jefferson Street and Fred Waring Drive
La Quinta, California

Dear Mr. Middleton:

In accordance with your request and authorization, this letter has been prepared in order to respond to comments provided by the city of La Quinta following review of the Geotechnical Engineering Investigation Report prepared for the subject site. The referenced review sheet provided to our office is dated May 30, 2008. These comments were provided to our office by a representative of DRC Engineering. Following are our response to those comments considered applicable to our firm.

Comment No. 6: Krazan Geotech Report and current letter dated March 21, 2008

a. *"Liquefaction historic groundwater elevation is not provided (2nd request). Geo states low but if historic is higher than probably significant. Please address what the historic water table is. Either get it from CVWD (760-398-2661 or Myoma Dunes Mutual Water Co. (760-345-2694), I am not sure which one has authority here."*

According to CVWD, the historic groundwater elevation for the 3 closest wells to the site is listed below:

Township	Range	Section	Quad	Average Depth to Ground Water (2007) Below Ground Surface (BGS)	Historical Ground Water Depth Closest to Ground Surface	Year of Reading for Historical Ground Water
T 5S	R 7E	20	A	177.8 Feet BGS	140.7 Feet BGS	2004
T 5S	R 7E	20	G	201.8 Feet BGS	154.0 Feet BGS	2000
T 5S	R 7E	20	H	185.0 Feet BGS	168.2 Feet BGS	2006

b. *"Subsidence for volume calcs seem very low (0.02 ft). Has this been correlated with developments around the vicinity? Note, Project across Fred Waring had import volumes that increased. (Esplanade back in 2003). It is requested that the soils engineer define "subsidence" which should reflect lowering from the existing."*

Subsidence does not apply to the volume calculation of the imported fill. The Civil engineer should determine the import volume calculations. Subsidence is defined as ground surface or soil material shifting downward relative to the existing datum. In other words, this state's how much the existing soils will consolidate when the imported fill material is compacted on top of these in-situ materials.

c. *"95% compaction requirement is above the typical 90% for this area. It is requested to indicate on the plans that 95% compaction is required for these structural fills within the building areas".*

It is Krazan & Associates recommendation that any fill be compacted to a minimum of 95% relative density. The sandy soils present at the site can be typically compacted to 95% relative density.

d. *"In the March 21 letter from Krazan, the geotech addressed past comment 14 but does not address existing walls, structures, pool....etc as requested. Please address this issue especially near the retention areas like the park and section C area where the existing residential area exist. Also, northeast corner signal poles, sidewalks....etc."*

The proposed development should not impact any existing structures or improvement if the recommendations of the initial geotechnical investigation report (May 25, 2007) and all subsequent addendums and letters are considered in the design and construction of the project.

e. *"The soils report indicates that sulfate containing soils were found to be low on the site but import is required. The soil engineer should provide information on proper import specifications."*

It is recommended that any soils import for use as engineered fill shall be tested for sulfate content. It is recommended that the soils that are to be used for engineered fill contain negligible sulfate content according to ACI 318 Building Code.

If you have any questions, or if we can be of further assistance, please do not hesitate to contact our office at (951) 694-0601.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

Christopher Robinson, PG
Project Geologist
PG No. 8420

James M. Kellogg, PE
Project Manager
RCE No. 65092

CR/JMK:rm
cc: Addressee (4)

PROFESSIONAL GEOLOGIST
CHRISTOPHER ROBINSON
No. 8420
Exp. 12/08
STATE OF CALIFORNIA

Krazan & ASSOCIATES, INC

GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION

September 18, 2008 KA No.: 126-08033

Regency Centers
Mr. Tom Middleton
36 Executive Park, Suite 100
Irvine, CA 92614

RE: Response to City of La Quinta Request For information
Proposed Jefferson Square (Phase I)
Fred Waring & Jefferson
La Quinta, CA

Reference: **Geotechnical Engineering Investigation, Proposed Jefferson Square (Phase I), Jefferson Street and Fred Waring Drive, La Quinta, California, dated May 25, 2007.**

Mr. Middleton:

In accordance with your authorization, we have prepared this letter to response to a request for information by the City of La Quinta. Based on information provided by the project Civil Engineer, DRC Engineering, it is our understanding that the City of La Quinta has requested confirmation that the recommended remedial grading is suitable for the proposed shop buildings to be constructed at the project site. Based on a review of Sheet ST1, General Notes and Details, prepared by KTGY Structural Engineers, a maximum bearing capacity value of 3000 pounds per square foot has been used to design the proposed building foundation. This value is consistent with the recommendations presented in the referenced Geotechnical Engineering Investigation report for the subject site. As a result, the recommended remedial grading provided for the subjects development is considered suitable.

We appreciate the opportunity to assist you on this project. If you have any questions regarding the reported test results or require additional information, please contact our office at (951) 694-0601 for assistance.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

James M. Kellogg, PE
Project Engineer

Distribution: (2) Addressee

JMK/dmw

Krazan & ASSOCIATES, INC.

GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION

September 23, 2008

KA Project No. 112-07036

Mr. Thomas Middleton
Regency Centers Inc.
36 Executive Park, Suite 100
Irvine, CA 92614

RE: Report Update Letter
Proposed Shopping Center
Jefferson Street and Fred Waring Drive
La Quinta, California

Dear Mr. Middleton:

In accordance with your request, we are providing this Addendum to our Geotechnical Engineering Investigation report (KA Project No. 112-07036) dated May 25, 2007 for the above-referenced project site. This addendum provides additional information to conform with seismic design requirements of the 2007 California Building Code (2007 CBC).

The site class, per Table 1613.5.2, 2007 CBC, is based upon the site soil conditions. It is our opinion that a Site Class D is appropriate for building design at this site. For seismic design of the structures, in accordance with the seismic provisions of the 2007 CBC, we recommend the following parameters:

2007 CALIFORNIA BUILDING CODE		
Seismic Item	**Value**	**CBC Reference**
Site Class	D	Table 1613.5.2
Fa	1.00	Table 1613.5.3 (1)
Ss	1.51	Figure 1613.5 (3)
SMS	1.51	Section 1613.5.3
SDS	1.00	Section 1613.5.4
Fv	1.50	Table 1613.5.3 (2)
S1	0.60	Figure 1613.5 (4)
SM1	0.90	Section 1613.5.3
SD1	0.60	Section 1613.5.4

The recommendations and limitations provided in our Geotechnical Engineering Investigation report (KA Project No. 112-07036) dated May 25, 2007 apply to this letter.

If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office at (909) 974-4400.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

Christopher Robinson, CEG
Project Manager
C.E.G. No. 2503

PROFESSIONAL GEOLOGIST
CHRISTOPHER ROBINSON
No. 2503
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James Kellogg, PE
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REGISTERED PROFESSIONAL ENGINEER
JAMES M. KELLOGG
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CIVIL
STATE OF CALIFORNIA

Krazan & ASSOCIATES, INC

GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION

September 25, 2008

KA No.: 126-08033

Regency Centers
Mr. Tom Middleton
36 Executive Park, Suite 100
Irvine, CA 92614

RE: Response to City of La Quinta Request For information
Jefferson Square Retail Center
Proposed Shop Buildings
Fred Waring & Jefferson
La Quinta, CA

Reference: **Geotechnical Engineering Investigation, Proposed Jefferson Square (Phase I), Jefferson Street and Fred Waring Drive, La Quinta, California, dated May 25, 2007.**

Mr. Middleton:

In accordance with your request and authorization, we have prepared this letter to respond to a request for information by the City of La Quinta. Based on information provided by the project Civil Engineer, DRC Engineering, it is our understanding that the City of La Quinta has requested confirmation that the recommended remedial grading is suitable for the proposed shop buildings to be constructed at the project site. In addition, it is our understanding that the city has requested confirmation that the anticipated long term settlement of the proposed structures will be within the anticipated tolerable limits.

Based on a review of Sheet ST1, General Notes and Details, prepared by KTGY Structural Engineers, a maximum bearing capacity value of 3000 pounds per square foot has been used to design the proposed building foundation. This value is consistent with the recommendations presented in the referenced Geotechnical Engineering Investigation report for the subject site. As a result, the recommended remedial grading provided for the subjects development is considered suitable. The long term settlement of the proposed shop buildings is anticipated to be within the limits presented in the referenced Geotechnical Engineering Investigation report as well.

We appreciate the opportunity to assist you on this project. If you have any questions regarding the reported test results or require additional information, please contact our office at (951) 694-0601 for assistance.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

James M. Kellogg, PE
Project Engineer
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Distribution: (1) Addressee
(1) DRC Engineering

JMK/dmw