Attachment E

Geotechnical Evaluation

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OAK VALLEY DEVELOPMENT COMPANY
10410 Roberts Road
Calimesa, California 92320

April 8, 2021
Project No. 1-0366

Attention: Mr. John Ohanian

Subject: **SUPPLEMENTAL GEOTECHNICAL INVESTIGATION**
The Oak Valley Town Center Project,
Parcel Map 37862, In the City of Calimesa, California

References: See Appendix A

Dear Mr. Ohanian:

Alta California Geotechnical, Inc. (Alta) has completed a supplemental geotechnical investigation of the planned development for the Oak Valley Town Center Project, Parcel Map 37862, in the City of Calimesa, County of Riverside, California. The conclusions and recommendations presented in this report are based on Alta's geologic mapping, recent and previous subsurface investigations, laboratory testing, review of the 60-scale Mass Grading Plans (Plates 1 through 9) provided by Proactive Engineering Consultants West, and review of the referenced reports.

The purpose of this supplemental investigation is to better define anticipated removal depths and limits and provide a document that may be utilized for grading contractor estimates. Included in this report are:

- Discussion of the site geotechnical conditions.
- Updated unsuitable soil removal and grading recommendations.

If you have any questions or should you require any additional information, please contact the undersigned at (951) 509-7090. Alta appreciates the opportunity to provide geotechnical consulting services for your project.

Sincerely,
Alta California Geotechnical, Inc.

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SAG: TJM: FR: JBC: 1-0366, April 8, 2021 (Supplemental Geo Report, Oak Valley)

1.0 INTRODUCTION

This report presents Alta's supplemental geotechnical investigation for the Oak Valley Town Center Project, Parcel Map 37862, in the City of Calimesa, County of Riverside, California. Our conclusions and recommendations are based upon the geotechnical data presented in this report, the previous investigations and the proposed development depicted on the enclosed Plates 1 through 9.

1.1 Purpose

The purpose of this report is to examine the existing onsite geotechnical conditions and assess the impacts that the geotechnical conditions may have on the proposed development. This report is suitable for use in developing engineer's and contractor's cost estimates and is intended to supplement the previous geotechnical report prepared by Advanced Geotechnical Solutions (AGS, 2020).

1.2 Scope of Work

Alta's *Scope of Work* for this geotechnical investigation included the following:

- Reviewing the referenced reports (Appendix A).
- Site geologic mapping.
- Excavating, logging, and sampling eleven (11) hollow-stem auger borings to a maximum depth of 51-feet below the existing surface (Appendix B).
- Excavating, logging, and sampling fourteen (14) backhoe test pits to a maximum depth of 18.5-feet below the existing surface (Appendix B).
- Conducting laboratory testing on samples obtained during our investigation (Appendix C).
- Compiling previous subsurface and laboratory data from the referenced reports (Appendices B-1 through B-3 and C-1 through C-3).
- Evaluating engineering geologic and geotechnical engineering data, including laboratory data, to develop recommendations for site remedial grading.
- Preparing this report and accompanying exhibits.

1.3 Report Limitations

The conclusions and recommendations presented in this report are based on the field and laboratory information generated during this investigation, and a review of the referenced reports. The information contained in this report is intended to be used for construction cost estimates in conjunction with the previous report for the site (AGS, 2020).

2.0 PROJECT DESCRIPTION

2.1 Site Location and Existing Conditions

The property consists of an irregular-shaped, approximately 265± -acre parcel located along Roberts Road approximately 0.6 miles northwest of the intersection of Roberts Road and Cherry Valley Boulevard.

The majority of the site was previously used for agricultural purposes. Several abandoned residential and related structures remain onsite in the central and northwestern portions of the site. The site is mostly vacant, although engineered fills, entrance road returns, and powerlines are present. A concrete pipe culvert and associated headwall located beneath Roberts Road near the intersection with Singleton Road that had failed has been repaired within the last year.

The site is partially covered by a moderate to sparse growth of weeds, shrubs and a tree. The terrain ranges from flat to locally steep, while some areas have gentle to moderate inclinations. Several tributaries connect to two large drainage areas that transect the site from northeast to southwest.

2.2 Proposed Development

It is our understanding that the site is to be developed to support the construction of commercial buildings. Four (4) large industrial/commercial warehouse type structures will be constructed on Lots 1 through 4. Locations for the future commercial/retail buildings will be developed at a later date. Wood-framed and concrete tilt-up construction is anticipated. Alta anticipates that

remedial grading will be accomplished with conventional cut-and-fill grading techniques to provide building pads for the support of commercial structures with shallow foundations, reinforced concrete slabs-on-grade, and associated improvements. It is our understanding that foundation design recommendations for the four warehouse structures will be provided by others. The proposed development includes construction of Singleton Road and Roberts Road.

3.0 SITE INVESTIGATIONS

3.1 Current Subsurface Investigation

Alta has conducted a supplemental subsurface investigation consisting of the excavation, logging and sampling of eleven (11) hollow stem auger borings up to a maximum depth of 51 feet below the existing ground surface and fourteen (14) backhoe test pits up to a maximum depth of 18.5 feet. The approximate locations of the borings and test pits are shown on the enclosed mass grading plan (Plates 1 through 9). Logs of the exploratory borings and test pits are presented in Appendix B.

Laboratory testing was performed ring samples obtained during the field investigation. A brief description of the laboratory test procedures and the test results are presented in Appendix C.

3.2 Previous Geotechnical Investigations and Grading Operations

A geotechnical investigation of the site was conducted by Pacific Soils Engineering, Inc. (2004) as a part of the overall Phase I of Summerwind Ranch, Tract 32702. During that investigation, seven (7) bucket auger borings were excavated, logged and sampled within the site at the approximate locations shown on Plates 1 through 9. Laboratory testing was conducted on samples obtained during drilling.

An additional geotechnical investigation was undertaken by Advanced Geotechnical Solutions, Inc. (AGS) in 2020. That study undertook the excavation and sampling of eighteen (18) hollow stem auger borings to a maximum depth of 71.5 feet below the ground surface. Laboratory testing was also performed on collected samples.

Southern California Geotechnical (SCG) also conducted a geotechnical investigation in conjunction with AGS in 2020 consisting of ten (10) hollow stem auger borings to a maximum depth of 55.0 feet below the ground surface.

The approximate locations of test pits, hollow stem auger borings, and bucket auger borings excavation by PSE, AGS, and SCG are presented on Plates 1 through 9. The logs and lab data are presented in Appendices B-1 through B-3 and the laboratory data is presented in Appendices C-1 through C-3.

4.0 GEOLOGY

A full description of the geologic conditions onsite is presented in AGS, 2020. Our supplemental investigation confirmed the geologic descriptions presented in that report.

5.0 ENGINEERING PROPERTIES AND ANALYSIS

5.1 Materials Properties

Presented herein is a general discussion of the engineering properties of the onsite materials that will be encountered during construction of the proposed project. Descriptions of the soil (Unified Soil Classification System) and in-place moisture/density results are presented on the boring logs in Appendices B and B-1 through B-3

5.1.1 Excavation Characteristics

Based on the data provided from the subsurface investigation, it is our opinion that the majority of the on-site materials possess favorable excavation characteristics such that conventional earth moving equipment can be utilized. As noted in Section 6.0, saturated conditions requiring stabilization of removal bottoms may be encountered.

5.1.2 Compressibility

The undocumented artificial fill, alluvium and upper potions of the old alluvium, very old alluvial fan deposits, and the Live Oak Valley Formation onsite are considered compressible and unsuitable to support the proposed improvements. Recommended removal depths are presented in Section 6.1.2.

5.1.3 Earthwork Adjustments

The values presented in Table 5-1 are deemed appropriate for estimating purposes and may be used in an effort to balance earthwork quantities. As is the case with every project, contingencies should be made to adjust the earthwork balance when grading is in-progress and actual conditions are better defined. Soil compacted to 95% relative compaction should be assumed to shrink an additional 2% beyond what is stated in Table 5-1.

A subsidence of 0.1 foot should be assumed in proposed fill areas. It should also be anticipated that areas underlain by saturated alluvium will settle under fill loads. The amount of settlement that can be assumed is approximately 0.1-feet for every 10-feet of fill.

TABLE 5-1 Earthwork Adjustment Factors	
Geologic Unit	**Adjustment Factor**
Alluvium (Qal)	Shrink 14%
Older Alluvium (Qoa)/Very Old Alluvial Fan Deposits (Qvof)	Shrink 0%
Live Oak Canyon (Qlo)	Bulk 2%

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on Alta's findings during our subsurface investigation, the laboratory test results, the previous investigations, and our staff's previous experience in the area, it is Alta's opinion that the development of the site is feasible from a geotechnical perspective. Presented below are updated remedial grading and earthwork recommendations. The improvement design recommendations presented in AGS, 2020 remain applicable at this time, although they may be modified if needed as the project design progresses.

6.1 Site Preparation and Removals

All grading shall be accomplished under the observation and testing of the project geotechnical consultant in accordance with the recommendations contained herein and the City of Calimesa criteria.

6.1.1 Site Preparation

Vegetation, construction debris, and other deleterious materials are unsuitable as structural fill material and should be disposed of offsite prior to commencing grading/construction. Any septic tanks, seepage pits or wells should be abandoned as per the County of Riverside Department of Health Services.

6.1.2 Unsuitable Soil Removals

Presented below are the unsuitable soil removal recommendations for the onsite geologic units. All undocumented artificial fill, partially saturated alluvium, peat deposits, weathered older alluvium, weathered very old alluvial fan deposits, and highly weathered Live Oak Canyon Formation shall be removed and recompacted to project specifications as described below within structural areas. Removals shall extend a minimum of 10-feet outside the building limits or at a 1:1 projection down and away from the building limits until a competent bottom is reached, whichever is greater. Removals shall also be conducted below Singleton Road and Roberts Road. Lesser removals can be considered in non-structural areas such as landscape areas and parking lots (with exception to the areas underlain by peat deposits as discussed below), although this will result in possible future maintenance due to settlement (See Section 6.1.4)

Removal bottoms should be observed by the Project Geotechnical Consultant to make a final determination that suitable, competent soils have been exposed. Removals should be completed as per Plate G-1 and -2 (Appendix E). Estimated depths of recommended removals are shown on the enclosed Plates 1 through 9, based on the closest available data point.

6.1.2.1 Undocumented Artificial Fill (map symbol afu)

All onsite existing undocumented artificial fills are unsuitable to support the proposed engineered fills and/or structures and should be completely removed and recompacted to project specifications. It is anticipated that removal depths in artificial fills will range from 3 to 5 feet.

6.1.2.2 Alluvium (map symbol Qal)

All onsite partially saturated alluvium, and any topsoil, are unsuitable to support the proposed engineered fills and/or structures and should be removed to expose competent saturated alluvium (saturation greater than 80%), older alluvium, very old alluvial fan deposits, or Live Oak Canyon Formation. Alluvial removals are estimated to range in depth from a few feet up to forty feet, with possible deeper localized areas. It is anticipated that the removed alluvium can be utilized as engineered fill material.

Groundwater seepage was encountered below a portion of Lot 3 (AGS-3, AGS-16, and T-2, Appendix B-1). Soils below the groundwater exceed 80% saturation and consolidation data indicates minimal to no potential for hydro-collapse. As such, it is anticipated that alluvial removals in this area will range from 8-feet to 15-feet.

While free groundwater was not encountered below Lot 1, saturated soils were encountered in the western portion of the lot in Borings B-7 and PSE-105 (Appendices B and B-1), typically below 15-feet. In Boring B-7, moisture/density testing indicates that the degree of saturation in these soils exceeds 90% and the potential for hydro-collapse is minimal to nil. As such, due to the minimal potential for hydro-collapse and the difficulty in handling saturated soils during a grading operation, it is recommended to remove the partially saturated alluvium in this area until the degree of saturation

is consistently above 80%. The anticipated depth of removal in this area is on the order of 15-feet.

Settlement monitoring shall be conducted in areas underlain by saturated alluvium, as described in Section 6.2.10. Recommendations for possible removal bottom stabilization are presented in Section 6.2.5.

6.1.2.3 Older Alluvium (map symbol Qoa)

The uppermost portions (2 to 4 feet) of older alluvium are highly weathered and considered to be compressible. As such, the uppermost portion of older alluvium should be removed and recompacted as engineered fill prior to the placement of additional engineered fill.

6.1.2.4 Very Old Alluvial Fan Deposits

The uppermost portions (1 to 3 feet) of very old alluvial fan deposits are highly weathered and considered to be compressible. As such, the uppermost portion of very old alluvial fan deposits should be removed and recompacted as engineered fill prior to the placement of additional engineered fill.

6.1.2.5 Live Oak Canyon Formation (Map Symbol Qlo)

The very highly weathered portions of the Live Oak Canyon Formation are unsuitable to support the proposed fills and/or structures and should be removed and recompacted to project specifications. It is anticipated that the upper 1 to 3-feet of these deposits will require removal and recompaction prior to fill placement.

6.1.2.6 Peat Deposits (No Map Symbol)

Peat deposits have been encountered onsite within the alluvium, primarily within Lot 4. Due to the high potential for settlement, it is recommended to remove the peat deposits during grading. The removal shall extend below both structural and non-structural areas that will receive fill.

6.1.3 Over-excavation of Building Pads

Footings for structures should be underlain by a minimum of two (2) feet of compacted fill. As such, for pads where unsuitable soil removals do not provide the minimum depth of compacted fill, or where design grades and/or remedial grading activities create cut/fill transitions, the cut and shallow fill portions of the building pads should be over-excavated during grading and replaced with compacted fill. Anticipated minimum pad undercut depths are shown on the enclosed Plates 1 through 9. These depths may need to be altered when footing sizes are known, as such, a geotechnical foundation plan review is recommended when plans become available.

For pads underlain by steep cut/fill transitions, additional bedrock undercutting should be performed to provide a minimum amount of fill equal to the height of the proposed fill divided by three (H/3), with a minimum over-excavation of three (3) feet, as per Plate G-16 (Appendix E). Pads where deeper undercuts are recommended are shown on the enclosed Plates 1 through 9.

The final depth and extent of the undercut should be verified in the field during grading when final grading and foundation plans are available. The undercut should extend five (5) feet outside of the perimeter footings. The proposed undercuts should be graded such that a gradient

of at least one (1) percent is maintained toward deeper fill areas or the front of the pad. Replacement fills should be compacted to project specifications as discussed in Section 6.2.

6.1.4 Removals in Non-Structural Areas

Lesser removals can be considered in landscape and parking lot areas. At a minimum, undocumented artificial fill and the upper 2 to 3-feet of alluvium shall be removed and recompacted. If alluvium is left in-place, then additional maintenance of the landscape/parking lot areas may be required.

6.2 General Earthwork Recommendations

6.2.1 Compaction Standards

All fill and processed natural ground shall be compacted to a minimum relative compaction of 90 percent, as determined by ASTM Test Method: D-1557. Fills deeper than 50 feet, or below subdrains, should be compacted to minimum relative compaction of 93 percent, as determined by ASTM Test Method: D-1557, as detailed on Plate G-16 (Appendix E). It is our understanding that the design team for Lots 1 through 4 have requested that fills deeper than 20-feet below these lots be compacted to a minimum relative compaction of 95 percent, extending a minimum of 5-feet outside the building perimeter. It is anticipated this will primarily affect Lots 1 and 4.

Fill material should be moisture conditioned to optimum moisture or above, and as generally discussed in Alta's Earthwork Specification Section presented in Appendix D. Compaction shall be achieved with the use of sheepsfoot rollers or similar kneading type equipment. Mixing and moisture conditioning will be required in order to achieve the recommended moisture conditions.

6.2.2 Groundwater/Seepage

It is anticipated that groundwater will be encountered below Lot 3. It is possible that perched water conditions could be encountered depending on the time of year construction occurs.

6.2.3 Documentation of Removals

All removal/over-excavation bottoms should be observed and approved by the project Geotechnical Consultant prior to fill placement. Consideration should be given to surveying the removal bottoms and undercuts after approval by the geotechnical consultant and prior to the placement of fill. Staking should be provided in order to verify undercut locations and depths.

6.2.4 Treatment of Removal Bottoms

At the completion of removals/over-excavation, the exposed removal bottom should be ripped to a minimum depth of eight (8) inches, moisture-conditioned to above optimum moisture content and compacted in-place to the project standards.

6.2.5 Removal Bottom Stabilization

The intention of the 80% saturation removal recommendations in the alluvium presented in Section 6.1.2.2 is to remove the hydro-collapsible soil, while limiting the amount of removal bottoms that will require stabilization for conventional earthmoving equipment to operate. However, stabilization may still be required prior to fill placement. Crushed rock pushed into the wet material or other options such as rock layers under and overlain by geogrid (Mirafi RS280i, RS580i, or approved equivalent) may be utilized for this purpose. The contractor should evaluate the most cost-effective solution for stabilizing the bottoms.

6.2.6 Fill Placement

After removals, scarification, and compaction of in-place materials are completed, additional fill may be placed. Fill should be placed in eight-inch bulk maximum lifts, moisture conditioned to optimum moisture content or above, compacted and tested as grading/construction progresses until final grades are attained.

6.2.7 Moisture Content

Moisture conditioning will be required during grading to achieve optimum or above conditions. Most soils will require the addition of water and mixing prior to placement as compacted fill.

6.2.8 Mixing

Mixing of materials may be necessary to prevent layering of different soil types and/or different moisture contents. The mixing should be accomplished prior to and as part of compaction of each fill lift.

6.2.9 Import Soils

Import soils, if necessary, should consist of clean, structural quality, compactable materials similar to the on-site soils and should be free of trash, debris or other objectionable materials. The project Geotechnical Consultant should be notified not less than 72 hours in advance of the locations of any soils proposed for import. Import sources should be sampled, tested, and approved by the project Geotechnical Consultant at the source prior to the importation of the soils to the site. The project Civil Engineer should include these requirements on plans and specifications for the project.

6.2.10 Settlement Monitoring

Surface settlement monuments should be constructed on areas underlain by saturated alluvium. Details for the surface settlement plates are presented on Plate G-17 and settlement monuments are presented on Plate G-18 (Appendix E). These settlement-monitoring devices should be surveyed bi-monthly by the project surveyor to an accuracy of 0.001 feet (vertically). Construction can commence after the soil engineer has reviewed the monitoring data and confirmed that sufficient completion of the settlement process has occurred.

6.2.11 Subdrains

Alta anticipates that subdrains will be needed in some areas of the project, as shown on the enclosed plans. Subdrains should be constructed in accordance with Plate G-3 and G-4 in Appendix E.

6.2.12 Fill Slope Construction

Fill slopes should be overfilled to an extent determined by the contractor, but not less than two (2) feet measured perpendicular to the slope face, so that when trimmed back to the compacted core a minimum 90 percent relative compaction is achieved.

Compaction of each fill lift should extend out to the temporary slope face. Back-rolling during mass filling at intervals not exceeding four (4) feet in height is recommended, unless more extensive overfilling is undertaken.

As an alternative to overfilling, fill slopes may be built to the finish slope face in accordance with the following recommendations:

1. Compaction of each fill lift should extend to the face of the slope.
2. Back-rolling during mass grading should be undertaken at intervals not exceeding four (4) feet in height. Back-rolling at more frequent intervals may be required.
3. Care should be taken to avoid spillage of loose materials down the face of any slopes during grading. Spill fill will require complete removal prior to compaction, shaping, and grid rolling.
4. At completion of mass filling, the slope surface should be watered, shaped, and compacted by track walking with a D-8 bulldozer, or equivalent, such that compaction to project standards is achieved to the slope face.

Proper seeding and planting of the slopes should follow as soon as practical to inhibit erosion and deterioration of the slope surfaces. Proper moisture control will enhance the long-term stability of the finish slope surface.

6.2.13 Backcut Stability

Temporary backcuts, if required during unsuitable soil removals, should be made no steeper than 1:1 without review and approval of the geotechnical consultant. Flatter backcuts may be necessary where geologic conditions dictate and where minimum width dimensions are to be maintained.

Care should be taken during remedial grading operations in order to minimize risk of failure. Should failure occur, complete removal of the disturbed material will be required.

In consideration of the inherent instability created by temporary construction backcuts for removals, it is imperative that grading schedules are coordinated to minimize the unsupported exposure time of these excavations. Once started, these excavations and subsequent fill operations should be maintained to completion without intervening delays imposed by avoidable circumstances. In cases where five-day workweeks comprise a normal schedule, grading should be planned to avoid exposing at-grade or near-grade excavations through a non-work weekend. Where improvements may be affected by temporary instability, either on or offsite, further restrictions such as slot cutting, extending workdays, implementing weekend schedules, and/or other requirements considered critical to serving specific circumstances may be imposed.

6.3 Slope Stability

The following is a discussion of slope stability onsite, based on the mass grading plans.

6.3.1 Fill Slopes

Fill slopes on the project have been designed at a slope ratio of 2:1 (horizontal:vertical) or flatter. Fill slopes, when properly constructed with onsite materials, are expected to be grossly stable as designed. Keys should be constructed at the toe of all fill slopes towing on existing or cut grade. Fill keys should have a minimum width equal to fifteen (15) feet or one-half (1/2) the height of the ascending slope, whichever is greater.

Skin-fill slope conditions should be avoided. If these conditions exist or are created during grading, they should be evaluated. Typical remediations for skin fill conditions are shown on Plate G-11 (Appendix E).

6.3.2 Cut Slopes

The grading plans depicts proposed cut slopes at a slope ratio of 2:1 (horizontal:vertical). Alta anticipates that cut slopes will be primarily excavated in the Live Oak Canyon Formation. All cut slopes should be observed during grading by the Project Geotechnical Consultant. If adverse bedding, fracture or joint patterns, or other unstable geological conditions are exposed, then cut slopes may need to be replaced with a drained stabilization fill, as generally depicted on Plates G-8, G-9 and G-10 in Appendix E.

7.0 FUTURE PLAN REVIEWS

This report represents a geotechnical review of the site. As the project design progresses, site specific geologic and geotechnical issues should be considered in the design and construction of the project. Consequently, future plan reviews may be necessary. These reviews may include reviews of:

- Foundation Plans
- Utility Plans

These plans should be forwarded to the project Geotechnical Consultant for review. Specific commercial structure types may require additional subsurface investigation. This recommendation should be reviewed as design of the project progresses.

8.0 CLOSURE

8.1 Geotechnical Review

For the purposes of this report, multiple working hypotheses were established for the project, utilizing the available data and the most probable model is used for the analysis. Future information collected during the proposed grading operations is intended to evaluate the hypothesis and as such, some of the assumptions summarized in this report may need to be changed. Some modifications of the grading recommendations may become necessary, should

the conditions encountered in the field differ from the conditions hypothesized in this report.

Plans and sections of the project specifications should be reviewed by Alta to evaluate conformance with the intent of the recommendations contained in this report. If the project description or final design varies from that described in herein, Alta must be consulted regarding the applicability of the recommendations contained herein and whether any changes are required. Alta accepts no liability for any use of its recommendations if the project description or final design varies and Alta is not consulted regarding the alterations.

8.2 Limitations

This report is based on the following: 1) the project as presented on the attached plans; 2) the information obtained from Alta's laboratory testing included herein; and 3) from the information presented in the referenced reports. The findings and recommendations are based on the results of the subsurface investigations, laboratory testing, and office analysis combined with an interpolation and extrapolation of conditions between and beyond the subsurface excavation locations. However, the materials adjacent to or beneath those observed may have different characteristics than those observed and no precise representations are made as to the quality or extent of the materials not observed. The results reflect an interpretation of the direct evidence obtained. Work performed by Alta has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the geotechnical profession currently practicing in the same locality under similar conditions. No other representation, either expressed or implied, and no warranty or guarantee is included or intended.

The recommendations presented in this report are based on the assumption that an appropriate level of field review will be provided by a geotechnical consultant who is familiar with the design and site geologic conditions. That field review shall be sufficient to confirm that geotechnical and geologic conditions exposed during grading are consistent with the geologic representations and corresponding recommendations presented in this report.

The conclusions and recommendations included in this report are applicable to the specific design of this project as discussed in this report. They have no applicability to any other project or to any other location and any and all subsequent users accept any and all liability resulting from any use or reuse of the data, opinions, and recommendations without the prior written consent of Alta.

Alta has no responsibility for construction means, methods, techniques, sequences, procedures, safety precautions, programs in connection with the construction, acts or omissions of the CONTRACTOR or any other person performing any of the construction, or for the failure of any of them to carry out the construction in accordance with the final design drawings and specifications.

APPENDIX A

REFERENCES

APPENDIX A

Selected References

Advanced Geotechnical Solutions, Inc., Geotechnical Investigation and Review of Mass Grading Plans, Parcel Map 37862, City of Calimesa, County of Riverside, California, December 23, 2020, Report No. 2004-01-B-5.

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USGS, 2013, Seismic Design Maps. http://earthquake.usgs.gov/hazards/designmaps/usdesign.php

APPENDIX B

Logs of Borings

Alta California Geotechnical, Inc. (this report)

APPENDIX B

Subsurface Investigation

Alta's subsurface investigation consisted of excavating, logging, and sampling eleven (11) hollow-stem auger borings and fourteen (14) backhoe test pits. Details of the subsurface investigation are presented in Table B-1. The approximate location of the exploratory excavation is shown on the accompanying mass grading plan (Plates 1 through 9) and the Geotechnical Logs are attached.

TABLE B-1
SURFACE INVESTIGATION DETAILS

Equipment	Range of Depths	Sampling Methods	Sample Locations
Hollow-Stem Auger	Up to 51 feet	1. Bulk 2. Ring Samples	1. Bulk-Select Depth 2. Rings-Every 5-feet
Backhoe	Up to 18.5 feet	none	none

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions		grf	ltr	Description
Coarse Grained Soils: More than 50% retained on No. 200 sieve	Gravel and Gravelly Soils: More than 50% of coarse fraction retained on No. 4 sieve		GW	Well-graded gravels or gravel sand mixtures, little or no fines
			GP	Poorly-graded gravels or gravel sand mixture, little or no fines
			GM	Silty gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand-clay mixtures
	Sand and Sandy Soils: More than 50% of coarse fraction passes on No. 4 sieve		SW	Well-graded sands or gravelly sands, little or no fines
			SP	Poorly-graded sands or gravelly sands, little or no fines
			SM	Silty sands, sand-silt mixtures
			SC	Clayey sands, and-clay mixtures

Major Divisions		grf	ltr	
Fine Grained Soils: More than 50% passes on No. 200 sieve	Silts And Clays LL,<50		ML	Inorganic silts and very fine sands, rock flour, silty or 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 silt-clays of low plasticity
	Silts And Clays LL,<50		MH	Inorganic silts, micaceous or diatomaceous fine or silty soils, elastic silts
			VH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity
Highly Organic Soils			PT	Peat and other highly organic soils

BOUNDARY CLASSIFICATION: Soils possessing characteristics of two groups are designated by combinations of group symbols.

PARTICLE SIZE LIMITS

U.S. STANDARD SERIES SIEVE				CLEAR SQUARE SIEVE OPENINGS			
200	40	10	4	3/4"	3"	12"	
Silts and Clays	Sand			Gravel		Cobbles	Boulders
	Fine	Medium	Coarse	Fine	Coarse		

RELATIVE DENSITY

Sands and Gravels	Blows/Foot (SPT)
Very Loose	<4
Loose	4-10
Medium Dense	11-30
Dense	31-50
Very Dense	>50

CONSISTENCY CLASSIFICATION

Silts and Clays	Criteria
Very Soft	Thumb penetrates soil >1 in.
Soft	Thumb penetrates soil 1 in.
Firm	Thumb penetrates soil 1/4 in.
Stiff	Readily indented with thumbnail
Very Stiff	Thumbnail will not indent soil

HARDNESS

Bedrock
Soft
Moderately Hard
Hard
Very Hard

LABORATORY TESTS

Symbol	Test
DS	Direct Shear
DSR	Direct Shear (Remolded)
CON	Consolidation
SA	Sieve Analysis
MAX	Maximum Density
RV	Resistance (R) Value
EI	Expansion Index
SE	Sand Equivalent
AL	Atterberg Limits
CHEM	Chemical Analysis
HY	Hydrometer Analysis

SOIL MOISTURE

Increasing Visual Moisture Content

Dry - Dry to touch

Moist - Damp, but no visible free water

wet - Visible free water

SIZE PROPORTIONS

Trace - <5%

Few - 5 to 10%

Some - 15 to 25%

KEY TO EXPLORATORY BORING LOGS

ALTA CALIFORNIA GEOTECHNICAL INC.

PLATE B

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0366	PROJECT NAME	Oak Valley		
DATE STARTED	2/25/21	GROUND ELEV.		BORING DESIG.	B-01
DATE FINISHED	2/25/21	GW DEPTH (FT)		LOGGED BY	JC
DRILLER	2R Drilling Inc.	DRIVE WT.	140lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**ALLUVIUM**(Qal): SILTY SAND, very fine grained, brown, dry, loose to medium dense, some roots.				
5		R	24			@6.0ft. very fine to fine grained, tan, dry, medium dense.	11.8	112	66	
10		R	10		SP PT	@10.0ft. SAND, very fine to fine grained, yellow tan, moist, loose. @10.5ft. PEAT, dark grayish black, moist, soft.	31.2	82	81	
15		R	14		SP	@15.0ft. SAND, very fine to fine grained, slightly reddish brown, moist, medium dense.	13.9	93	47	
20		R	12		SM	@20.5ft. SANDY SILT, very fine grained, dark gray, moist.	24.6	93	85	
25		R	15		PT	@25.0ft. PEAT, dark gray, moist, medium dense, some very fine to fine grained sand.	80.5	44	76	CON, HY, CHEM, ORGAN
30		R	35		SP	**OLDER ALLUVIUM**(Qoa): SAND, very fine to fine grained, slightly reddish tan, moist, dense.	24.5	100	98	
35		R	87 for 11"			@35.0ft. very dense	8.2	119	55	
						Continued.				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

▼ GROUNDWATER
► SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0366 PLATE B-1

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0366	PROJECT NAME	Oak Valley		
DATE STARTED	2/25/21	GROUND ELEV.		BORING DESIG.	B-01
DATE FINISHED	2/25/21	GW DEPTH (FT)		LOGGED BY	JC
DRILLER	2R Drilling Inc.	DRIVE WT.	140lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
		R	82 for 11"			**OLDER ALLUVIUM**(Qoa): Continued; fine to coarse grained trace fine gravel <3/4".	7.7	114	46	
45		R	85 for 11"		SM	@45.0ft. SILTY SAND, very fine to fine grained, slightly reddish tan, dry, very dense.	8.8	112	49	
50		R	62		SP	@50.0ft. SAND, fine to medium grained, slightly reddish tan, moist, very dense.	15.8	101	66	
						TOTAL DEPTH 51.0 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0366 PLATE B-1

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0366	PROJECT NAME	Oak Valley		
DATE STARTED	2/25/21	GROUND ELEV.		BORING DESIG.	B-02
DATE FINISHED	2/25/21	GW DEPTH (FT)		LOGGED BY	JC
DRILLER	2R Drilling Inc.	DRIVE WT.	140lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**ALLUVIUM**(Qal): SILTY SAND, very fine grained, brown, dry, loose to medium dense, some roots. @0.5ft. dark brown.				
5		R	23			@5ft. tannish brown, medium dense.	10.1	105	46	
10		R	19			@10.0ft. some orange mottling, moist.	18.8	97	71	
15		R	19		ML	@15.0ft. SANDY SILT, very fine grained, slightly orange tan, moist, stiff.	21.7	97	81	
20		R	6		PT	@20.0ft. PEAT, dark grayish black, moist, firm, some silt and clay	93.0	48	99	
25		R	51		SP	@25.0ft. SAND, very fine to fine grained, dark gray, moist, dense.	10.3	114	60	
30		R B	9		ML	@30.0ft. CLAYEY SILT with PEAT, dark gray, moist, firm	49.1	69	93	
35		R	11			@35.0ft. stiff, few roots, some peat	82.4	51	96	
						Continued.				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

▼ GROUNDWATER
► SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0366 PLATE B-2

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0366	PROJECT NAME	Oak Valley		
DATE STARTED	2/25/21	GROUND ELEV.		BORING DESIG.	B-02
DATE FINISHED	2/25/21	GW DEPTH (FT)		LOGGED BY	JC
DRILLER	2R Drilling Inc.	DRIVE WT.	140lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
		R	17		SM	**OLDER ALLUVIUM**(Qoa): SILTY SAND, very fine grained, dark gray, moist, medium dense, trace clay.	17.5	113	100	
45		R	34			@45.0ft. fine to coarse grained, dense.	7.7	115	46	
50		R	21		SC	@50.0ft. CLAYEY SAND, very fine to medium grained, tannish brown, moist, medium dense, some silt.	8.7	114	52	
						TOTAL DEPTH 51.0 FEET NO GROUNDWATER ENCOUNTERED NO OBSERVED BELOW 28.0 FEET				

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
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S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0366 PLATE B-2

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0366	PROJECT NAME	Oak Valley		
DATE STARTED	2/25/21	GROUND ELEV.		BORING DESIG.	B-03
DATE FINISHED	2/25/21	GW DEPTH (FT)		LOGGED BY	JC
DRILLER	2R Drilling Inc.	DRIVE WT.	140lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**ALLUVIUM**(Qal): SILTY SAND, very fine to fine grained, dark brown, dry, loose to medium dense, some clay, some fine gravel <3/4", some roots. @0.5ft. brown.				
5		R	12			@5.0ft. dark brown, moist, medium dense. @6.0ft. tan, very fine to fine grained.	28.7	88	87	
10		R	16		SC	@10.0ft. CLAYEY SAND, fine to medium grained, dark brown, moist, medium dense, some peat.	17.7	106	84	
15		R	36		SC	**OLDER ALLUVIUM** (Qoa): CLAYEY SAND, fine to medium grained, light gray with orange mottling, dark brown, moist, dense.	16.9	112	95	
20		R	57		SM	**LIVE OAK CANYON FORMATION**(Qlo): SILTY SAND, very fine to medium grained, tan with orange mottling, moist, very dense.	11.7	123	91	
25		R	50 for 5"		SP	@25.0ft. SAND, medium to coarse grained, orange tan, dry, very dense.	3.3	111	18	
						TOTAL DEPTH 26.0 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
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Alta California Geotechnical, Inc.

P.N. 1-0366 PLATE B-3

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0366	PROJECT NAME	Oak Valley		
DATE STARTED	2/25/21	GROUND ELEV.		BORING DESIG.	B-04
DATE FINISHED	2/25/21	GW DEPTH (FT)		LOGGED BY	JC
DRILLER	2R Drilling Inc.	DRIVE WT.	140lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**ALLUVIUM**(Qal): SILTY SAND, very fine grained, tan, dry, loose to medium dense, some roots.				
5		R	9			@5.0ft. loose, moist.	20.3	95	73	
10		R	11			@10.0ft. medium dense.	18.8	89	57	
15		R	8		ML	@15.0ft. CLAYEY SILT, dark gray, moist, firm, few roots, some peat.	113.0	38	89	
20		R	11		PT	@20.0ft. PEAT, dark gray black, moist, firm.	16.3	31	10	CON, HY, CHEM, ORGAN
25		R	9		ML	25.0ft. SANDY SILT w/CLAY, dark gray, moist, firm, some fine grained sand.	23.9	99	95	CON, HY
30		R	18			@30.0ft. stiff.	16.6	115	99	
35		R	25		SC	**OLDER ALLUVIUM** (Qoa): CLAYEY SAND, fine to coarse grained, tan, moist, medium dense.	11.5	116	71	
						Continued.				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

▼ GROUNDWATER
► SEEPAGE
J: JOINTING C: CONTACT
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S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0366 PLATE B-4

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0366	PROJECT NAME	Oak Valley		
DATE STARTED	2/25/21	GROUND ELEV.		BORING DESIG.	B-04
DATE FINISHED	2/25/21	GW DEPTH (FT)		LOGGED BY	JC
DRILLER	2R Drilling Inc.	DRIVE WT.	140lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
		R	26			**OLDER ALLUVIUM** (Qoa): Continued; very fine to medium dense.	17.7	112	98	
45		R	74		SM	**LIVE OAK CANYON FORMATION**(Qlo): SILTY SAND, fine to coarse grained, slightly reddish tan, moist, very dense, few fine to coarse gravel <3".	8.7	125	72	
50		R	50 for 6"		SP	@50.0ft. SAND, fine to coarse grained, tan, slightly moist, very dense, few fine to coarse gravel <3".	5.3			
						TOTAL DEPTH 51.0 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

▼ GROUNDWATER
► SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0366 PLATE B-4

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0366	PROJECT NAME	Oak Valley		
DATE STARTED	2/26/21	GROUND ELEV.		BORING DESIG.	B-05
DATE FINISHED	2/26/21	GW DEPTH (FT)		LOGGED BY	JC
DRILLER	2R Drilling Inc.	DRIVE WT.	140lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**ALLUVIUM**(Qal): SILTY SAND, very fine to fine grained, dark brown, dry, loose, some roots.				
5		R	24			@5.0ft. very fine to medium grained, grayish tan with orange mottling, moist, medium dense, some pores.	8.7	109	45	
10		R	16		PT	@10.0ft. PEAT, dark gray, moist, firm, some silt and clay	29.4	85	82	
15		R	13		ML	@15.0ft. SANDY SILT, fine grained, grayish brown, moist, stiff, trace clay.	20.9	106	99	CON, HY
20		R	15			@20.0ft. brown.	18.0	110	96	
25		R	15		SP	@25.0ft. SAND, fine to coarse grained, tan, moist, medium dense.	13.2	112	73	
						TOTAL DEPTH 26.0 FEET NO GROUNDWATER ENCOUNTERED CAVING OBSERVED BELOW 19.0 FEET				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
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Alta California Geotechnical, Inc.

P.N. 1-0366 PLATE B-5

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0366	PROJECT NAME	Oak Valley		
DATE STARTED	2/26/21	GROUND ELEV.		BORING DESIG.	B-06
DATE FINISHED	2/26/21	GW DEPTH (FT)		LOGGED BY	JC
DRILLER	2R Drilling Inc.	DRIVE WT.	140lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SP	**ALLUVIUM**(Qal): SAND, fine grained, brown, dry, loose to medium dense, some roots.				
5		R	14			@5.0ft. fine to medium grained, tan, dry, medium dense, few fine gravel <3/4".	3.1	99	12	
10		R	10			@10.0ft. very fine to fine grained, loose, moist, trace roots.	7.2	88	22	
15		R	12		SP	@15.0ft. SAND, black, moist, firm, trace fine to medium grained sand, few roots, organics	19.5	101	80	CON, HY
20		R	28		SM	**OLDER ALLUVIUM**(Qoa): SILTY SAND, fine to medium grained, tannish brown, moist, medium dense, some pores.	7.7	114	46	
25		R	61		SP	@25.0ft. SAND, fine to coarse grained, slightly orange tan, slightly moist, very dense.	6.0	114	36	
						TOTAL DEPTH 26.0 FEET NO GROUNDWATER ENCOUNTERED CAVING OBSERVED BELOW 15.0 FEET				

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE T TUBE SAMPLE

▼ GROUNDWATER
► SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0366 PLATE B-6

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0366	PROJECT NAME	Oak Valley		
DATE STARTED	2/26/21	GROUND ELEV.		BORING DESIG.	B-07
DATE FINISHED	2/26/21	GW DEPTH (FT)		LOGGED BY	JC
DRILLER	2R Drilling Inc.	DRIVE WT.	140lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SP	**ALLUVIUM**(Qal): SAND, very fine to fine grained, brown, dry, medium dense, trace silt, some roots.				
5		R	17		SC	@5.0ft. CLAYEY SAND, very fine to fine grained, brown, moist, medium dense, trace silt.	15.4	115	93	
10		R	18		SP	@10.0ft. SAND, very fine to fine grained, slightly orange brown, moist, medium dense.	8.9	116	55	
15		R	10		ML	@15.0ft. SANDY SILT w/ CLAY, brown, moist, firm, trace very fine grained sand.	17.9	112	99	CON, HY
20		R	21		SM	@20.0ft. SILTY SAND, very fine to fine grained, brown, moist, very stiff, trace clay.	12.6	124	99	CON, HY
25		R	15		SP	@25.0ft. SILTY SAND, fine to coarse grained, brown, moist, medium dense, trace clay.	16.0	115	97	
						TOTAL DEPTH 26.0 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
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Alta California Geotechnical, Inc.

P.N. 1-0366 PLATE B-7

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0366	PROJECT NAME	Oak Valley		
DATE STARTED	2/26/21	GROUND ELEV.		BORING DESIG.	B-08
DATE FINISHED	2/26/21	GW DEPTH (FT)		LOGGED BY	JC
DRILLER	2R Drilling Inc.	DRIVE WT.	140lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SP	**ALLUVIUM**(Qal): SAND, very fine grained, brown, dry, loose to medium dense, trace silt, some roots.				
5		R	12			@5.0ft. slightly moist, medium dense.	6.9	104	31	
10		R	22		SM	**OLDER ALLUVIUM**(Qoa): SILTY SAND, very fine to fine grained, tan, dry, medium dense, trace fine gravel <3/4".	4.8	103	21	CON, HY
15		R	27			@15.0ft. some silt	6.2	117	40	
20		R	23		ML	@20.0ft. SANDY SILT, very fine grained, light brown, moist, very stiff.	17.2	111	93	
25		R	43		SP	@25.0ft. SAND, fine to coarse grained, brownish gray, slightly moist, dense.	7.4	114	43	
						TOTAL DEPTH 26.0 FEET NO GROUNDWATER ENCOUNTERED CAVING OBSERVED BELOW 18.0 FEET				

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
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S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0366 PLATE B-8

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0366	PROJECT NAME	Oak Valley		
DATE STARTED	2/26/21	GROUND ELEV.		BORING DESIG.	B-09
DATE FINISHED	2/26/21	GW DEPTH (FT)		LOGGED BY	JC
DRILLER	2R Drilling Inc.	DRIVE WT.	140lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**ALLUVIUM**(Qal): SILTY SAND, very fine grained, brown, dry, loose to medium dense, abundant pores, some roots.				
5		R	20			@5.0ft. moist, medium dense, some porosity.	9.4	104	42	
10		R	21			@10.0ft. trace clay.	9.8	108	49	
15		R	15		ML	**OLDER ALLUVIUM**(Qoa): SANDY SILT, very fine grained, brown, moist, stiff.	16.9	110	89	CON, HY
20		R	21		SP	@20.0ft. SAND, very fine to fine grained, tan, moist, medium dense.	17.8	110	93	
25		R	12		ML	@25.0ft. SILT, brown, moist, stiff.	12.9	110	68	
						TOTAL DEPTH 26.0 FEET NO GROUNDWATER ENCOUNTERED CAVING OBSERVED BELOW 20.0 FEET				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
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Alta California Geotechnical, Inc.

P.N. 1-0366 PLATE B-9

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0366	PROJECT NAME	Oak Valley		
DATE STARTED	2/26/21	GROUND ELEV.		BORING DESIG.	B-10
DATE FINISHED	2/26/21	GW DEPTH (FT)		LOGGED BY	JC
DRILLER	2R Drilling Inc.	DRIVE WT.	140lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					ML	**ALLUVIUM**(Qal): SANDY SILT, very fine grained, brown, dry, soft, abundant porosity, some roots.				
5		R	14			@5.0ft. moist, very stiff.	12.6	103	55	
10		R	23		SM	**OLDER ALLUVIUM**(Qoa): SANDY SILT, very fine to medium grained, tan, slightly moist, firm, trace fine to coarse gravel <3", some porosity.	7.3	100	30	CON, HY
15		R	44		SP	@15.0ft. SAND, very fine to medium grained, tan, dry, dense.	6.4	118	42	
20		R	24		SM	@20.0ft. SILTY SAND, very fine grained, brown, moist, medium dense.	13.8	115	83	
25		R	22		SP	@25.0ft. SAND, very fine to fine grained, slightly orange brown, dry, medium dense.	5.5	105	26	
						TOTAL DEPTH 26.0 FEET NO GROUNDWATER ENCOUNTERED CAVING OBSERVED BELOW 20.5 FEET				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

▼ GROUNDWATER
► SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0366 PLATE B-10

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0366	PROJECT NAME	Oak Valley		
DATE STARTED	2/26/21	GROUND ELEV.		BORING DESIG.	B-11
DATE FINISHED	2/26/21	GW DEPTH (FT)		LOGGED BY	JC
DRILLER	2R Drilling Inc.	DRIVE WT.	140lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**ALLUVIUM**(Qal): SILTY SAND, very fine to fine grained, tan, dry, loose to medium dense, trace fine gravel <3/4", some roots. @0.5ft. brown				
5		R	11				10.4	111	56	
10		R	16			@10.0ft. some porosity.	15.7	113	90	
15		R	6		ML	**OLDER ALLUVIUM**(Qoa): SANDY SILT w/ Clay, brown, moist, firm.	22.8	103	99	CON, HY
20		R	20		SM	@20.0ft. SILTY SAND, very fine to fine grained, brown, moist, medium dense.	15.1	112	85	
25		R	51		SP	@25.0ft. SAND, medium to coarse grained, orange brown, dry, very dense.	4.4	120	31	
						TOTAL DEPTH 26.0 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

▼ GROUNDWATER
► SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0366 PLATE B-11

APPENDIX B-1

Logs of Borings

Pacific Soils Engineering, Inc. (2004)

GEOTECHNICAL BORING LOG

PROJECT NO. 700065-J
DATE STARTED 4/8/04
DATE FINISHED 4/9/04
DRILLER San Diego Drilling
TYPE OF DRILL RIG 30" Bucket Auger

PROJECT NAME Summerwind
GROUND ELEV. 2268
GW DEPTH (FT)
DRIVE WT. SEE NOTE
DROP 12 in.

BORING DESIG. B-037
LOGGED BY DMP
NOTE 0-30'=49911b.
30-60'=38411b.
60-90'=24461b.

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					ML	**ALLUVIUM** (Qal): SANDY SILT, fine grained, light brown, slightly moist, firm, trace coarse grains, visible porosity.				
	2265									
5		R	Push			@ 4.0 ft. color change to yellow brown.	5.4	100	22	
	2260					@ 8.0 ft. trace gravel.				
10		R	3		SM	@ 10.0 ft. SILTY SAND, fine grained, yellow brown, slightly moist to moist, medium dense, visible porosity, trace coarse grains, gravel.	4.4	115	27	
	2255	B								
						SAN TIMOTEO FORMATION (QTst): SANDY SILTSTONE, fine grained, yellow brown, moist, moderately hard to hard.				
15		R	9				8.6	131	85	CON, HY
						TOTAL DEPTH 16.0 FT NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
[R] RING (DRIVE) SAMPLE
[S] SPT (SPLIT SPOON) SAMPLE
[B] BULK SAMPLE [T] TUBE SAMPLE

▼ GROUNDWATER
► SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

PACIFIC SOILS ENGINEERING, INC.

PLATE B-3

GEOTECHNICAL BORING LOG

PROJECT NO.	700065-J	PROJECT NAME	Summerwind	BORING DESIG.	B-043
DATE STARTED	4/13/04	GROUND ELEV.	2275	LOGGED BY	DMP
DATE FINISHED	4/14/04	GW DEPTH (FT)		NOTE	0-30'=4991lb.
DRILLER	San Diego Drilling	DRIVE WT.	SEE NOTE		30-60'=3941lb.
TYPE OF DRILL RIG	30" Bucket Auger	DROP	12 in.		60-90'=2446lb.

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT. URATION (%)	OTHER TESTS
	2275				CL	TOPSOIL (No Map Symbol): SANDY CLAY, sand is fine to coarse grained, dark red brown, moist, stiff, trace gravel, secondary clay development.				
						SAN TIMOTEO FORMATION (QTst): CONGLOMERATE, matrix supported, mostly granule sized clasts in a fine to coarse grained sand matrix, yellow brown, moist, moderately hard some secondary clay, calcium carbonate cementation.				
5	2270					@ 3.0 ft. SANDY SILTSTONE, fine grained, light yellow brown, dry, moderately hard, pinches out, interfingered contact with below.				
						@ 4.0 ft. PEBBLE CONGLOMERATE, matrix supported, 1/4-3" clasts in a fine to coarse grained sand matrix, yellow brown, moist, moderately hard, clasts are igneous and metamorphic, subrounded, occasional 4-5" clasts.				
						@ 6.0 ft. low cohesion, slight caving.				
10	2265					@ 8.0 ft. SILTY SAND matrix, greater cohesion, fewer clasts.				
						@ 11.0 ft. coarser grained, mostly medium to coarse grained SAND and granules, visible porosity, low cohesion.				
						@ 13.0 ft. occasional interfingered lenses of SANDY SILTSTONE, and SILTY SANDSTONE, fine grained, yellow brown, moist, moderately hard.				
15	2260									
						@ 17.0 ft. gradational change to SILTY SANDSTONE, fine to coarse grained, (coarse grained locally), yellow brown to reddish brown, moist, moderately hard, trace pebbles and granules.				
20	2255					@ 20.0 ft. 1.5' thick CONGLOMERATE bed, clast supported, up to 9" clasts.				
						@ 22.0 ft. N78W , 10NE-approximate attitude of bedding on coarse grained SANDSTONE bed, 6" thick.				
25	2250									
						@ 28.0 ft. SANDY SILTSTONE, fine grained, yellow brown, moist, moderately hard, trace granules and pebbles, locally SILTY SANDSTONE.				
30	2245	R B	6				11.3	123	87	
						@ 33.0 ft 2' thick SANDSTONE bed, fine to coarse grained, light gray, moist, moderately hard, trace pebbles and granules.				
35	2240									
	2235					Continued.				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

PACIFIC SOILS ENGINEERING, INC.

PLATE B-9

GEOTECHNICAL BORING LOG

PROJECT NO.	700065-J	PROJECT NAME	Summerwind		
DATE STARTED	4/13/04	GROUND ELEV.	2275	BORING DESIG.	B-043
DATE FINISHED	4/14/04	GW DEPTH (FT)		LOGGED BY	DMP
DRILLER	San Diego Drilling	DRIVE WT.	SEE NOTE	NOTE	0-30'=4991lb.
TYPE OF DRILL RIG	30" Bucket Auger	DROP	12 in.		30-60'=3841lb.
					60-90'=2446lb.

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
	2235					**SAN TIMOTEO FORMATION** (QTst): Continued. @ 38.0 ft. interfingered contact with below, gradational change, alternating SANDY SILTSTONE and PEBBLE CONGLOMERATE, 3"-1' thick.				
45	2230	R	19			@ 43.0 ft. PEBBLE CONGLOMERATE, matrix supported, mostly 1/2-2" in diameter clasts in a fine to coarse grained sand matrix, yellow brown to yellow gray, moist, hard.	3.9	132	41	
						@ 46.0 ft. faint biotite rich laminations in sandy lenses, cross bedded, discontinuous, overall decrease in clast size to mostly granules for 3'.				
50	2225	R	22				2.3	128	21	
55	2220	B				@ 56.0 ft. increased cohesion/cementation, hard.				
						@ 57.0 ft. greater abundance of clasts, mostly 1/2-1" in diameter, subangular to subrounded, igneous and metamorphic.				
60	2215									
65	2210					TOTAL DEPTH 65.0 FT NO GROUNDWATER ENCOUNTERED CAVING OBSERVED @ 6.0 FT				

SAMPLE TYPES:
[R] RING (DRIVE) SAMPLE
[S] SPT (SPLIT SPOON) SAMPLE
[B] BULK SAMPLE [T] TUBE SAMPLE

▼ GROUNDWATER
► SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

PACIFIC SOILS ENGINEERING, INC.

PLATE B-9

GEOTECHNICAL BORING LOG

PROJECT NO. 700065-J
DATE STARTED 7/22/04
DATE FINISHED 7/22/04
DRILLER Al Roy Drilling
TYPE OF DRILL RIG 18" Bucket Auger

PROJECT NAME Summerwind
GROUND ELEV. 2280
GW DEPTH (FT)
DRIVE WT. SEE NOTE
DROP 12 in.

BORING DESIG. B-081
LOGGED BY SJD
NOTE 0-24'=2150 lb
25-44'=1350 lb
45-65=6501b/65+=11501b

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
	2280				SM	ALLUVIUM (Qal): SILTY SAND, fine to coarse-grained, trace gravel, reddish brown, dry to slightly moist.				
5	2275	R	4			@ 5 ft. slightly moist, medium dense.	5.2	96	19	
10	2270	R	3				5.0	110	26	
15	2265	R	5				5.5	112	31	CON, HY
						@ 17 ft. slightly moist to moist, fine-grained.				
20	2260	R/B	3			@ 20 ft. moist.	6.1	110	32	
25	2255	R	30 for 11"		SM	OLDER ALLUVIUM (QTst): SILTY SAND, fine-grained, trace medium to coarse-grained, reddish brown to yellowish brown, moist, dense.	6.8	128	61	
30	2250	R	32 for 8"			@ 30 ft. coarse-grained, reddish brown.	5.6	119	38	
					ML	@ 32 ft. SANDY SILT, fine-grained SAND, yellowish brown to reddish brown, moist, stiff.				
35	2245	R	30 for 8"		SM	@ 35 ft. SILTY SAND, fine to coarse-grained, some GRAVEL, reddish brown, slightly moist, dense.	5.3	118	35	
						TOTAL DEPTH 36 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
[R] RING (DRIVE) SAMPLE
[S] SPT (SPLIT SPOON) SAMPLE
[B] BULK SAMPLE [T] TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

PACIFIC SOILS ENGINEERING, INC.

PLATEB-47

GEOTECHNICAL BORING LOG

PROJECT NO.	700065-J	PROJECT NAME	Summerwind	BORING DESIG.	B-095
DATE STARTED	9/15/04	GROUND ELEV.	2225	LOGGED BY	FE
DATE FINISHED	9/15/04	GW DEPTH (FT)	15	NOTE	0-22'=2400lb.
DRILLER	Ledezma	DRIVE WT.	SEE NOTE		22-42'=
TYPE OF DRILL RIG	30" Bucket Auger	DROP	12 in.		1200lb.43-65'=850lb.

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT. URATION (%)	OTHER TESTS
	2225				SP	ARTIFICIAL FILL-UNDOCUMENTED (afu): SAND, light yellow brown, dry, loose.				
5	2220	R	1				3.0			
					SM	ALLUVIUM (Qal): SILTY SAND, medium gray brown, moist, moderately dense, fine to medium grained.				
10	2215	R B	1			@ 10.0 ft. moist to very moist.	13.2	113	75	CON, HY MAX. CHEM HY
15	2210	R	2		SM	INTERMEDIATE-AGE ALLUVIUM (Qia): SILTY SAND, fine grained, dense, very moist to wet, some clay, brown and olive gray, slightly mottled, water entering boring @ 15.0 ft and 24.0 ft.	14.6	121	95	
20	2205	R	Push		ML	@ 20.0 ft. SANDY SILT to CLAYEY SILT, brown, very moist, soft, some fine grained sand.	19.1	110	95	
25	2200	R B	1			@ 25.0 ft. interlensed SAND and CLAYEY SILT, light gray to brown, soft, very moist to wet, sand is fine to coarse grained.	21.0	105	92	
30	2195	R	1				22.4	104	94	
35	2190					@ 34.0 ft. dark blueish gray.				
40	2185					TOTAL DEPTH 40.0 FT GROUNDWATER ENCOUNTERED @ 15.0 & 20.0 FT CAVING @ 40.0 FT				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

▼ GROUNDWATER
► SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

PACIFIC SOILS ENGINEERING, INC.

PLATEB-54

GEOTECHNICAL BORING LOG

PROJECT NO. 700065-J
DATE STARTED 9/16/04
DATE FINISHED 9/16/04
DRILLER Ledezma
TYPE OF DRILL RIG 30" Bucket Auger

PROJECT NAME Summerwind
GROUND ELEV. 2232
GW DEPTH (FT)
DRIVE WT. SEE NOTE
DROP 12 in.

BORING DESIG. B-096
LOGGED BY FE
NOTE 0-22'=2400lb.
23-42'=
1200lb. 43-65'=850lb.

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM/SP	**ALLUVIUM** (Qal): interlensed SAND and SILTY SAND, light brown to light gray, fine to coarse grained, dry to slightly moist, abundant visible porosity, some clay, trace of gravel, loose, trace gravel.				
	2230									
5		R	Push				3.9	103	17	CON, HY
	2225									
10						@ 10.0 ft. subrounded metamorphic clasts to 2" in diameter.				
	2220	R	1			@ 11.0 ft. sharp contact, dark gray to black, moist, firm, some visible porosity.	14.4	112	79	CON, HY
		B			SM	**INTERMEDIATE-AGE ALLUVIUM** (Qia): SILTY SAND, light brown and olive gray, slightly mottled, moist, moderately dense, fine to medium gray, iron oxide, some clay, weathered.				DSR, MAX, HY, CHEM
15		R	1				12.3	115	75	
	2215					@ 16.0 ft. less weathered, dense.				
20		R	4			@ 20.0 ft. brown and olive gray, mottled, moist, very dense, fine to coarse grained.	6.6	123	50	
	2210				SP	@ 22.0 ft. SAND, light yellow brown, fine to coarse grained, slightly moist, dense, some gravel to 1/8" in diameter.				
25		B								
					SM	@ 26.0 ft. SILTY SAND, light yellow brown, fine to coarse grained, slightly moist, dense.				
	2205					@ 26.0 ft. N35E, 20SE - erosional surface.				
30		R	3				12.5	118	82	
	2200					**SAN TIMOTEO FORMATION** (QTst): fine SANDY SILTSTONE, light yellow brown, moist to very moist, moderately hard, massive, trace gravel.				
						@ 31.0 ft. N30E, 15SE - contact.				
35						@ 33.0 ft. CLAYEY SILTSTONE, light olive gray, moist to very moist, very stiff, massive, some fine grained SAND.				
	2195									
		B								
40		R	10				12.5	118	82	
						TOTAL DEPTH 41.0 FT NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

PACIFIC SOILS ENGINEERING, INC.

PLATEB-55

GEOTECHNICAL BORING LOG

PROJECT NO.	700065-J	PROJECT NAME	Summerwind	BORING DESIG.	B-105
DATE STARTED	7/17/07	GROUND ELEV.	2243	LOGGED BY	FE
DATE FINISHED	7/17/07	GW DEPTH (FT)		NOTE	0-24'=35481b.
DRILLER	Ledezma	DRIVE WT.	SEE NOTE		25-47'=25771b.
TYPE OF DRILL RIG	30" Bucket Auger	DROP	12 in.		48-73'=16481b.

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**ALLUVIUM** (Qal): SILTY SAND, dark brown, slightly moist, loose, fine grained				
	2240									
5		R	push		ML	@ 5.0 ft. SANDY SILT, moist, brown, soft, some clay	14.7	113	85	
	2235									
10		R	1		SM	@ 10.0 ft. SILTY SAND, fine to medium grained, very moist, moderately dense, slightly mottled, grayish brown to reddish brown, evidence of higher groundwater	11.4	122	84	
	2230									
15		R	push		ML	@ 15.0 ft. CLAYEY SILT, dark yellow brown, very moist, soft	16.1	111	88	
	2225									
20		R	1		SM	@ 20.0 ft. SILTY SAND, brown, very moist, moderately dense, fine to medium grained	10.0	115	61	CON, HY
	2220									
25		R	2			@ 25.0 ft. traces of coarse grained sand, some iron oxide stains along cobbles faces	11.2	121	81	
	2215									
30						**SAN TIMOTEO FORMATION** (QTst): CONGLOMERATE, subrounded to rounded granitic and metamorphic clasts up to 2 inch diameter in gray-brown silty sandstone matrix, some iron oxide				
	2210					@ 33.0 ft. clasts to 12 inches in diameter				
						TOTAL DEPTH=34.0 FT. NO GROUNDWATER ENCOUNTERED NO CAVING				

SAMPLE TYPES:
- [R] RING (DRIVE) SAMPLE
- [S] SPT (SPLIT SPOON) SAMPLE
- [B] BULK SAMPLE [T] TUBE SAMPLE

▼ GROUNDWATER
► SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

PACIFIC SOILS ENGINEERING, INC.

PLATEB-62

GEOTECHNICAL BORING LOG

PROJECT NO.	700065-J	PROJECT NAME	Summerwind	BORING DESIG.	B-112
DATE STARTED	7/18/07	GROUND ELEV.	2235	LOGGED BY	FE
DATE FINISHED	7/18/07	GW DEPTH (FT)		NOTE	0-24'=35481b.
DRILLER	Ledezma	DRIVE WT.	SEE NOTE		25-47'=25771b.
TYPE OF DRILL RIG	30" Bucket Auger	DROP	12 in.		48-73'=16481b.

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
	2235				SM	**ALLUVIUM** (Qal): SILTY SAND, grayish brown, slightly moist, loose, fine to medium grained				
5	2230									
10	2225	R	1		SM/ML	@ 10.0 ft. SILTY SAND to SANDY SILT, brown with some grayish brown mottling, moist, moderately dense, some visible porosity	10.7	113	62	CON, HY
15	2220	R	1			@ 15.0 ft. some clay	15.5	119	95	CON, HY
					SM	**INTERMEDIATE-AGE ALLUVIUM** (Qia): SILTY SAND, brown, moist, dense, fine to coarse grained, no visible porosity				
20	2215	R	3							
		R	2				9.3	122	70	CON, HY
25	2210	R	2			@ 25.0 ft. yellowish brown, slightly mottled, moist to very moist, some clay	13.4	109	69	CON, HY
30	2205	R	3			@ 30.0 ft. dense	7.2	122	53	CON, HY
35	2200	R	2			@ 35.0 ft. fine to medium grained	12.5	120	89	CON, HY
						Continued				
	2195									

SAMPLE TYPES:
- [R] RING (DRIVE) SAMPLE
- [S] SPT (SPLIT SPOON) SAMPLE
- [B] BULK SAMPLE
- [T] TUBE SAMPLE

▼ GROUNDWATER
► SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

PACIFIC SOILS ENGINEERING, INC.

PLATEB-69

GEOTECHNICAL BORING LOG

PROJECT NO. 700065-J
DATE STARTED 7/18/07
DATE FINISHED 7/18/07
DRILLER Ledezma
TYPE OF DRILL RIG 30" Bucket Auger

PROJECT NAME Summerwind
GROUND ELEV. 2235
GW DEPTH (FT)
DRIVE WT. SEE NOTE
DROP 12 in.

BORING DESIG. B-112
LOGGED BY FE
NOTE 0-24'=35481b.
25-47'=25771b.
48-73'=16481b.

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT. URATION (%)	OTHER TESTS
	2195					**INTERMEDIATE-AGE ALLUVIUM** (Qia): continued; @ 40.0 ft. some quartzite clasts up to 3 inches in diameter @ 42.0 ft. brown, moist, dense, fine to medium grained, some silt				
45	2190	R	4		SP/SM	**OLDER ALLUVIUM** (Qoa): SAND to SILTY SAND, light yellowish brown, moist, very dense, fine to coarse grained	5.4	115	33	
50	2185	R	5		SM	@ 50.0 ft. SILTY SAND, yellowish brown, fine to medium gravel, moist, very dense, traces of course sand	9.8	111	53	CON, HY
55	2180	R	5				11.3	120	80	
60	2175									
65	2170	R	12			**SAN TIMOTEO FORMATION** (QTst): SANDSTONE, light reddish brown, moderately hard, fine to coarse grained, iron oxide staining	12.9	121	92	
70	2165					@ 69.0 ft. reddish brown, fine grained, hard TOTAL DEPTH=70.0 FT. NO GROUNDWATER ENCOUNTERED NO CAVING				

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

PACIFIC SOILS ENGINEERING, INC.

PLATEB-69

APPENDIX B-2

Logs of Borings

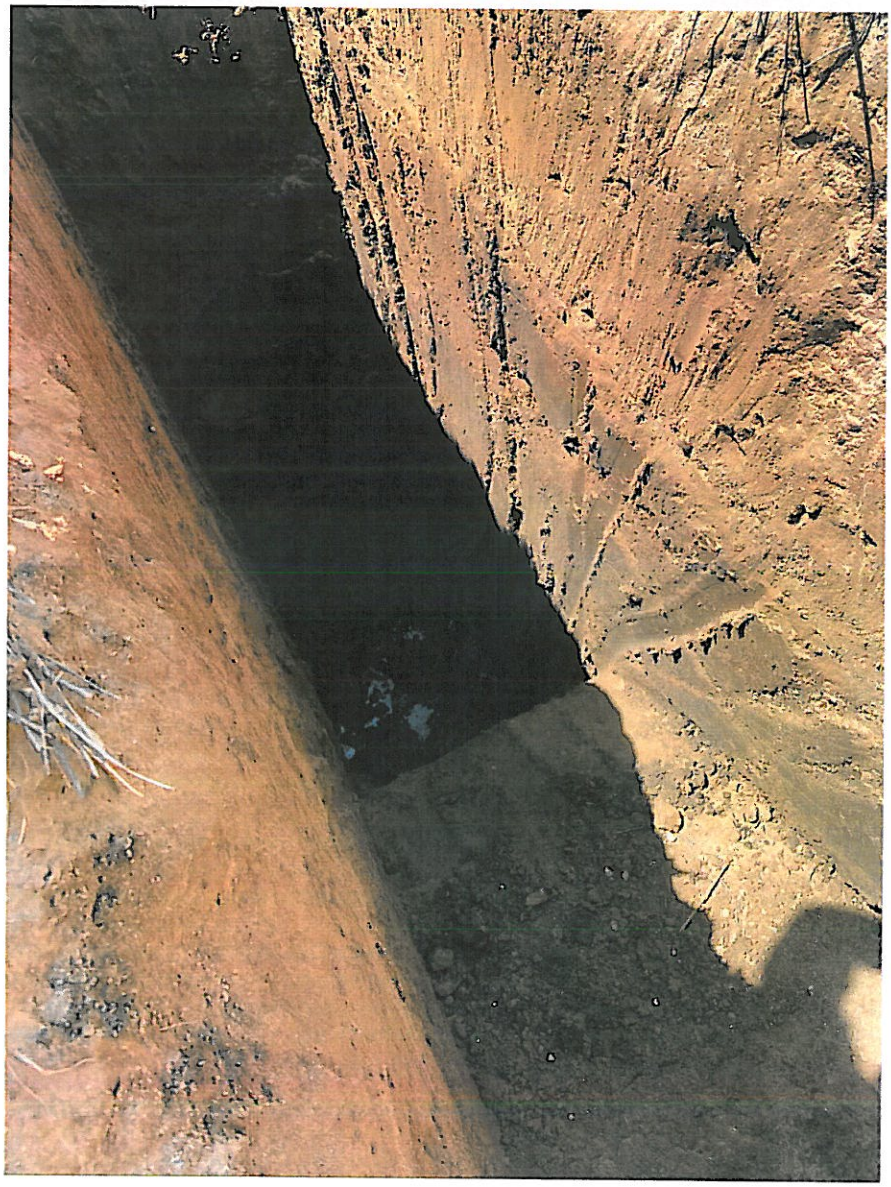
AGS. (2020)

Date Excavated 5/6/2020, 5/7/2020 & 8/5/2020
Logged by SS
Equipment: JCB 3CX Backhoe

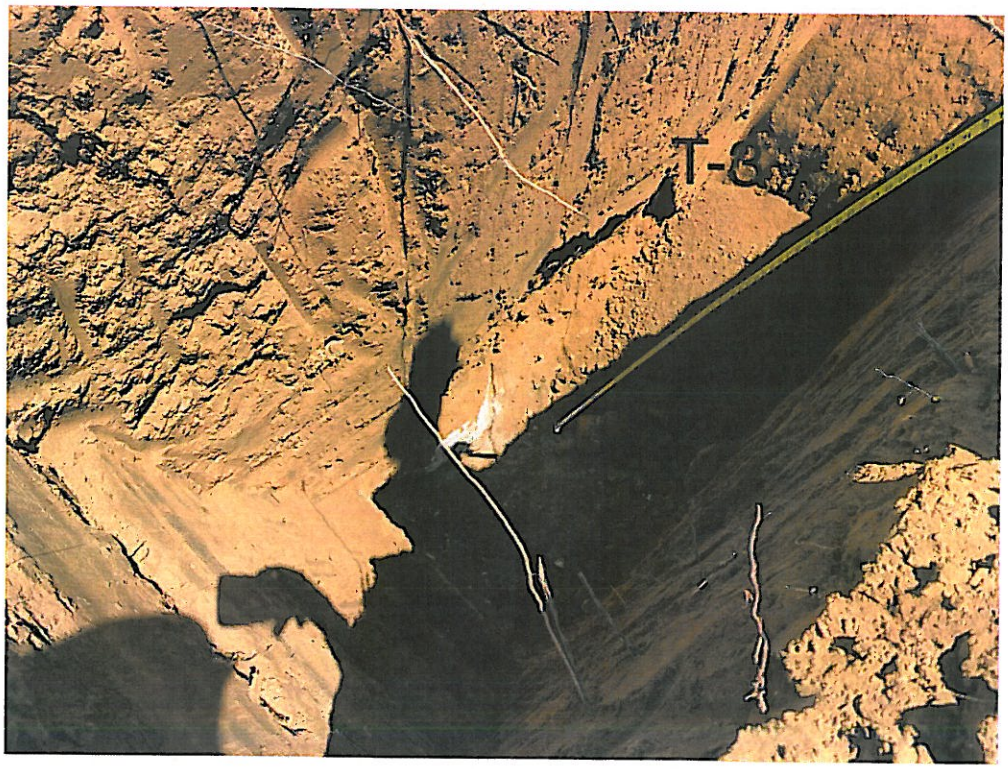
LOG OF TEST PITS

Excavation No.	Depth	USCS	Description
T-1	0.0 – 6.5 ft.	SM	**Alluvium (Qal)** Silty fine- to medium-grained SAND, dark gray brown, slightly moist, loose to medium dense @1.0 ft., moist; occasional gravel
	6.5 – 11.0 ft.	SM	**Very Old Alluvial Fan Deposits, Unit 3 ($Qvof_3$)** Silty fine-grained SAND, dark yellow brown to orange brown, slightly moist, dense; some gravel, weakly cemented @11.0 ft., increased density TOTAL DEPTH = 11.0 ft. NO WATER, NO CAVING

Excavation No.	Depth	USCS	Description
T-2	0.0 – 4.5 ft.	SM	**Alluvium (Qal)** Silty fine- to medium-grained SAND, dark yellow brown, moist, loose; micaceous
	4.5 – 11.5 ft.	SM/CL	@4.5 ft., Clayey SAND to Sandy CLAY, fine- to medium-grained, dark gray brown, very moist, loose to firm; micaceous @6.0 ft., wet @10.0 ft., Seepage, caving TOTAL DEPTH = 11.5 ft. SEEPAGE @ 10 ft., CAVING BELOW 10 ft.

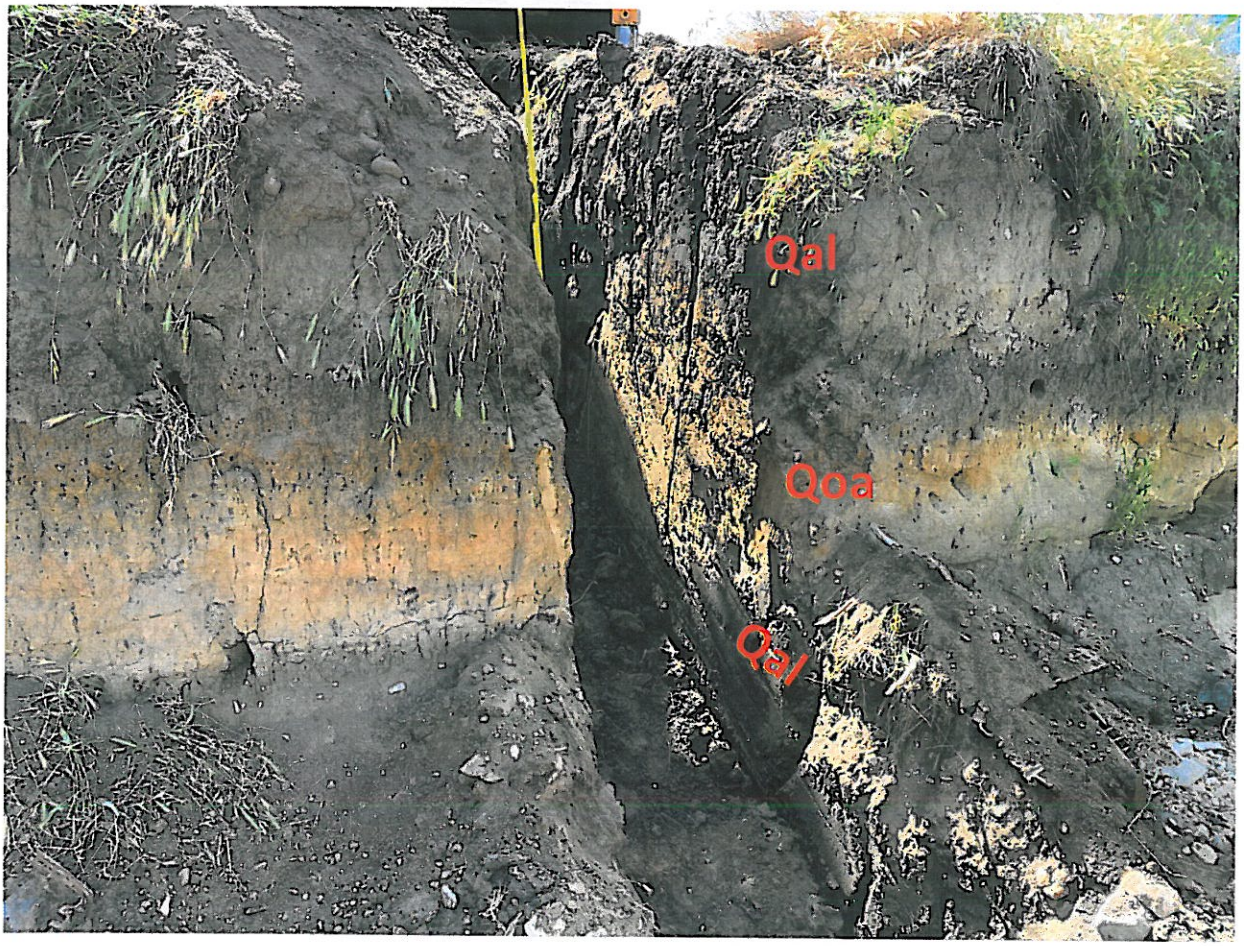


Excavation No.	Depth	USCS	Description
T-3	0.0 – 1.0 ft.	SM	**Topsoil (No map symbol)** Silty fine- to medium-grained SAND, brown, slightly moist, loose; roots
	1.0 – 8.0 ft.	SM	**Alluvium (Qal)** Silty fine-grained SAND, dark yellow brown, moist, medium dense; occasional gravel @6.0 ft., Silty fine- to coarse-grained SAND, yellow brown to orange brown, slightly moist, medium dense; abundant sub-rounded to sub-angular gravel to cobble
	8.0 – 13.0 ft.	GM	@8.0 ft., Sandy sub-rounded GRAVEL layer, yellow brown to orange brown, slightly moist, medium dense; 2-3-foot boulder in sidewall
	13.0 – 14.0 ft.	SM	**Older Alluvium (Qoa)** Silty fine-grained SAND, dark yellow brown, slightly moist, medium dense to dense; micaceous, iron oxide staining
			TOTAL DEPTH = 14.0 ft. NO WATER, NO CAVING

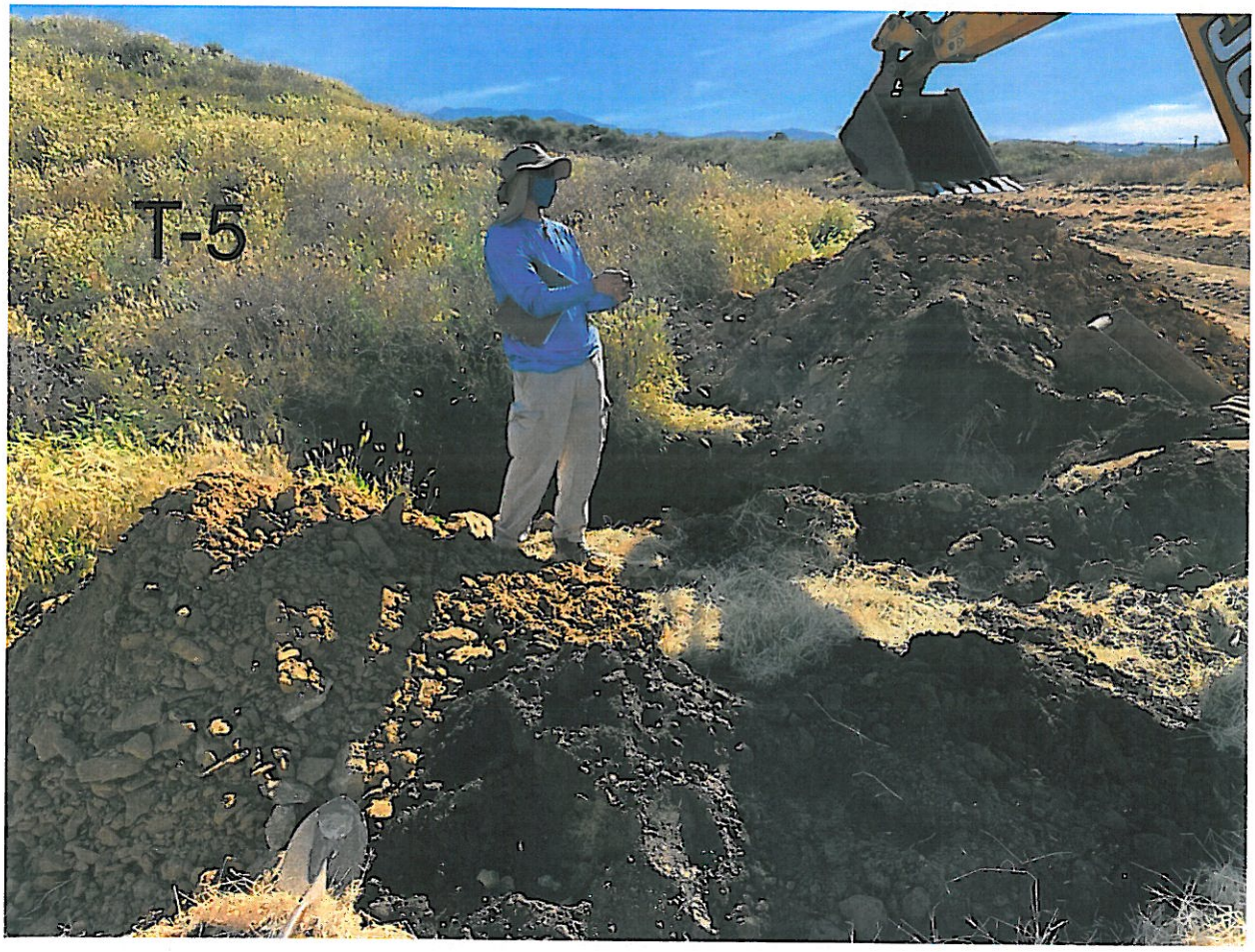


Excavation No.	Depth	USCS	Description
T-4	0.0 – 4.0 ft.	SM	**Alluvium (Qal)** Clayey fine- to coarse-grained SAND, dark gray brown, moist, loose
	4.0 – 8.0 ft.	SM	**Older Alluvium (Qoa)** Silty fine- to coarse-grained SAND, yellow brown to orange brown, slightly moist, medium dense to dense; micaceous, iron oxide staining, weakly cemented @6.0 ft., Silty fine-grained SAND
	8.0 – 12.0 ft.	SM/SC	**Alluvium (Qal)** Silty SAND to Clayey SAND, fine- to coarse-grained, dark gray brown, moist, loose; rounded to sub-rounded gravel to cobble. (Channel deposits undermining the side wall of channel)

TOTAL DEPTH = 12.0 ft.
NO WATER, NO CAVING



Excavation No.	Depth	USCS	Description
T-5	0.0 – 2.5 ft.	SM	**Topsoil (No map symbol)** Silty fine- to coarse-grained SAND, dark brown to dark gray brown, slightly moist to moist, loose; roots
	2.5 – 11.5 ft.	SM	**Very Old Alluvial Fan Deposits, Unit 3 ($Qvof_3$)** Silty fine-grained SAND, yellow brown, moist, medium dense to dense; minor porosity, weakly cemented @4.0 ft., Yellow brown to orange brown; occasional sub-rounded gravel @8.0 ft., no longer porous @10.0 ft., increased density; occasional sub-angular gravel to cobble TOTAL DEPTH = 11.5 ft. NO WATER, NO CAVING



Excavation No.	Depth	USCS	Description
T-6	0.0 – 0.5 ft.	SM	**Topsoil (No map symbol)** Silty fine-grained SAND, dark gray brown, slightly moist to moist, loose; micaceous, roots
	0.5 – 6.5 ft.	SM	**Alluvium (Qal)** Silty fine-grained SAND, yellow brown, slightly moist to moist, loose to medium dense
	6.5 – 11.0 ft.	SM	**Older Alluvium (Qoa)** Silty fine-grained SAND, yellow brown, moist, medium dense to dense; weakly cemented, micaceous, minor porosity, trace coarse-grained sand to fine gravel @9.0 ft., Dense; no longer porous
	11.0 – 12.0 ft.	GM	Fine- to coarse-grained Sandy GRAVEL to COBBLE, yellow brown, slightly moist, dense
			TOTAL DEPTH = 12.0 ft. NO WATER, NO CAVING

Excavation No.	Depth	USCS	Description
T-7	0.0 – 0.5 ft.	SM	**Topsoil (No map symbol)** Silty fine- to coarse-grained SAND, dark brown to dark gray brown, slightly moist to moist, loose; roots
	0.5 – 14.0 ft.	SM	**Very Old Alluvial Fan Deposits, Unit 3 ($Qvof_3$)** Silty fine- to coarse grained SAND, dark yellow brown, slightly moist, medium dense to dense; occasional gravel @3.0 ft., moist; weakly cemented @8.0 ft., trace clay
			TOTAL DEPTH = 14.0 ft. NO WATER, NO CAVING

Excavation No.	Depth	USCS	Description
T-8	0.0 – 0.5 ft.	SM	**Topsoil (No map symbol)** Silty fine- to coarse-grained SAND, dark brown to dark gray brown, slightly moist to moist, loose; roots
	0.5 – 7.0 ft.	SM	**Alluvium (Qal)** Silty fine-grained SAND, dark gray brown, moist, loose; micaceous @2.0 ft., occasional gravel @4.5 ft., increased moisture; minor porosity
	7.0 – 14.0 ft.	SM	**Older Alluvium (Qoa)** Silty fine- to coarse grained SAND, yellow brown to gray brown, moist, medium dense to dense; some gravel to cobble @9.0 ft., trace clay; weakly cemented, minor porosity, micaceous @10.0 ft., trace clay TOTAL DEPTH = 14.0 ft. NO WATER, NO CAVING

Excavation No.	Depth	USCS	Description
T-9	0.0 – 0.5 ft.	SM	**Topsoil (No map symbol)** Silty fine- to coarse-grained SAND, dark brown to dark gray brown, slightly moist to moist, loose; roots
	0.5 – 8.0 ft.	SM	**Alluvium (Qal)** Silty fine-grained SAND, dark gray brown, slightly moist to moist, loose; micaceous @6.0 ft., yellow brown to gray brown, medium dense
	8.0 – 12.0 ft.	SM	**Older Alluvium (Qoa)** Silty fine-grained SAND, yellow brown, moist, medium dense to dense; occasional fine gravel, minor porosity, weakly cemented @11.0 ft., no longer porous TOTAL DEPTH = 12.0 ft. NO WATER, NO CAVING

Excavation No.	Depth	USCS	Description
T-10	0.0 – 1.0 ft.	SM	**Topsoil (No map symbol)** Silty fine- to coarse-grained SAND, dark brown to dark gray brown, slightly moist to moist, loose; roots
	1.0 – 12.0 ft.	SM	**Alluvium (Qal)** Silty fine-grained SAND, dark gray brown, moist, loose; micaceous @3.0 ft., occasional sub-rounded gravel @7.0 ft., yellow brown to gray brown, increased moisture, loose to medium dense; porous @11.0 ft., with clay, moist to very moist
	12.0 – 13.0 ft.	ML/CL	Sandy SILT to Sandy CLAY, wet; occasional sub-rounded gravel to cobble
			TOTAL DEPTH = 13.0 ft. NO WATER, NO CAVING

Excavation No.	Depth	USCS	Description
T-11	0.0 – 0.5 ft.	SM	**Topsoil (No map symbol)** Silty fine- to coarse-grained SAND, dark brown to dark gray brown, slightly moist to moist, loose; roots
	0.5 – 3.0 ft.	SM	**Alluvium (Qal)** Silty fine- to coarse-grained SAND, dark yellow brown, slightly moist, loose; occasional gravel
	3.0 – 7.5 ft.	ML/SM	Sandy SILT to Silty SAND, fine-grained, dark gray brown, moist, firm to medium dense; micaceous
	7.5 – 13.0 ft.	ML	**Older Alluvium (Qoa)** Sandy Silt, fine-grained, yellow brown to gray brown, moist, medium dense to dense; occasional fine gravel, minor porosity, weakly cemented
	8.0 – 13.0 ft.	SM	Silty fine-grained SAND, gray brown to yellow brown, moist, dense; trace clay, micaceous, manganese oxide nodules
			TOTAL DEPTH = 13.0 ft. NO WATER, NO CAVING

Excavation No.	Depth	USCS	Description
T-12	0.0 – 1.0 ft.	SM	**Topsoil (No map symbol)** Silty fine- to coarse-grained SAND, dark brown to dark gray brown, slightly moist to moist, loose; roots
	1.0 – 3.0 ft.	SM	**Alluvium (Qal)** Silty fine-grained SAND, dark yellow brown to dark gray brown, slightly moist, loose; micaceous
	3.0 – 7.0 ft.	SW	Fine- to coarse-grained SAND with Silt with sub-rounded gravel
	7.0 – 14.0 ft.	SM	**Older Alluvium (Qoa)** Silty fine-grained SAND, yellow brown, moist, medium dense to dense; micaceous, weakly cemented
			TOTAL DEPTH = 14.0 ft. NO WATER, CAVING FROM 0 to 7 ft.

Excavation No.	Depth	USCS	Description
T-13	0.0 – 0.5 ft.	SM	**Topsoil (No map symbol)** Silty fine- to coarse-grained SAND, dark brown to dark gray brown, slightly moist to moist, loose; roots
	0.5 – 7.5 ft.	SM	**Alluvium (Qal)** Silty fine- to medium-grained SAND, dark gray brown, slightly moist, loose to medium dense @2.0 ft., moist; occasional gravel, micaceous
	7.5 – 12.0 ft.	SM	**Older Alluvium (Qoa)** Silty fine-grained SAND, dark yellow brown to orange brown, slightly moist, dense; some gravel, weakly cemented @10.0 ft., increased density TOTAL DEPTH = 12.0 ft. NO WATER, NO CAVING

Excavation No.	Depth	USCS	Description
T-14	0.0 – 2.0 ft.	SM	**Topsoil (No map symbol)** Silty fine- to coarse-grained SAND, dark brown to dark gray brown, slightly moist to moist, loose; roots
	2.0 – 11.0 ft.	SM	**Alluvium (Qal)** Silty fine- to medium-grained SAND, dark yellow brown, moist, loose; micaceous @5.0 ft., abundant sub-rounded gravel to cobble TOTAL DEPTH = 11.0 ft. NO WATER, NO CAVING

Excavation No.	Depth	USCS	Description
T-15	0.0 – 4.0 ft.	SW	**Alluvium (Qal)** Fine- to coarse-grained SAND, yellow brown to gray brown, dry to slightly moist, loose; with sub-angular gravel
	4.0 – 9.5 ft.	SM	**Very Old Alluvial Fan Deposits, Unit 3 ($Qvof_3$)** Fine- to coarse-grained SAND with Silt, dark yellow brown to gray brown, moist, medium dense to dense; micaceous

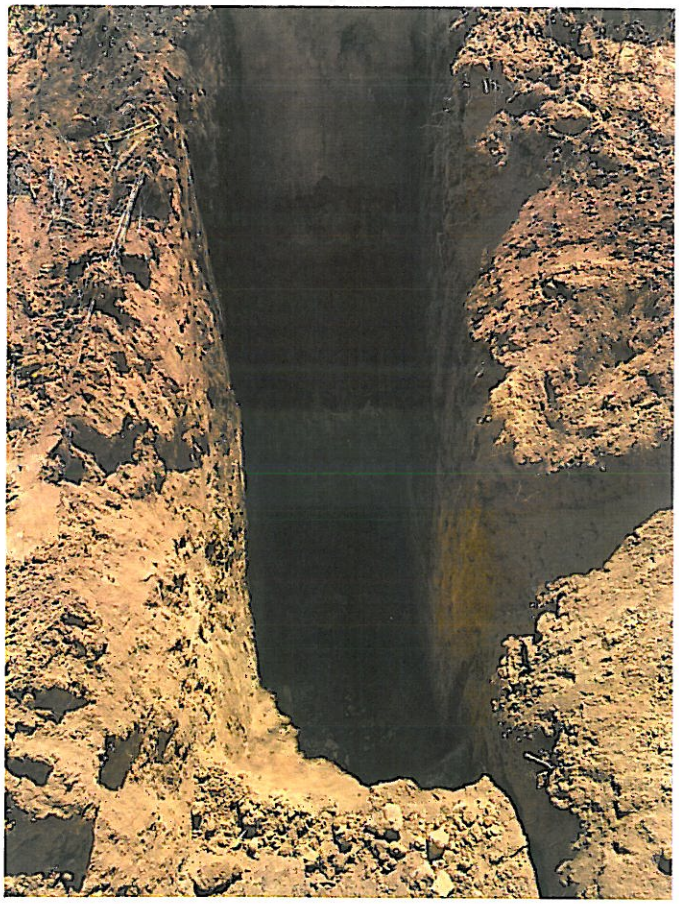
TOTAL DEPTH = 9.5 ft.
NO WATER, NO CAVING

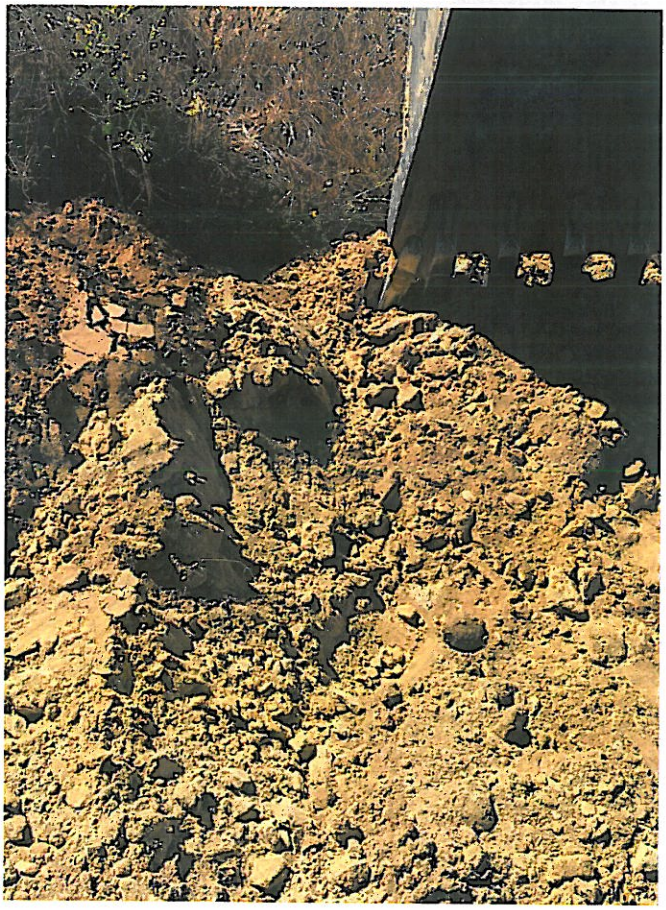
Excavation No.	Depth	USCS	Description
T-16	0.0 – 2.5 ft.	SM/ML	**Topsoil (No map symbol)** Silty SAND to Sandy SILT, very fine-grained, gray brown, moist, loose; roots
	2.5 – 7.0 ft.	SM	**Alluvium (Qal)** Silty fine- to medium-grained SAND, dark gray brown, slightly moist, loose to medium dense; trace clay
	7.0 – 11.0 ft.	SM	**Older Alluvium (Qoa)** Silty fine-grained SAND, dark yellow brown, moist, dense; weakly cemented, minor porosity
	11.0 – 14.0 ft.	SM/ML	Silty SAND to Sandy SILT, fine-grained, yellow brown to gray brown, moist, dense to moderately hard; trace clay, micaceous TOTAL DEPTH = 14.0 ft. NO WATER, NO CAVING

Excavation No.	Depth	USCS	Description
T-17	0.0 – 2.5 ft.	SM/ML	**Topsoil (No map symbol)** Silty SAND to Sandy SILT, very fine-grained, gray brown, moist, loose; roots
	2.5 – 7.0 ft.	SM	**Alluvium (Qal)** Silty fine- to coarse-grained SAND, dark gray brown, slightly moist, loose to medium dense; occasional sub-angular gravel to cobble
	7.0 – 11.0 ft.	SM	**Older Alluvium (Qoa)** Silty fine-grained SAND, dark yellow brown, moist, dense; weakly cemented, micaceous, manganese oxide
	11.0 – 14.0 ft.	SM/ML	Silty SAND to Sandy SILT, fine-grained, dense to moderately hard; trace clay and gravel @13.0 becomes fine- to coarse-grained TOTAL DEPTH = 14.0 ft. NO WATER, NO CAVING

Excavation No.	Depth	USCS	Description
T-18	0.0 – 1.0 ft.	SM	**Topsoil (No map symbol)** Silty fine- to coarse-grained SAND, dark brown to dark gray brown, slightly moist to moist, loose; roots
	1.0 – 6.0 ft.	SM	**Alluvium (Qal)** Silty fine- to medium-grained SAND, red brown, slightly moist, medium dense
	6.0 – 12.0 ft.	SM	**Older Alluvium (Qoa)** Silty fine- to coarse-grained SAND, dark yellow brown to orange brown, slightly moist, dense; occasional sub-angular gravel, weakly cemented, minor porosity @11.0 ft., decreasing moisture TOTAL DEPTH = 12.0 ft. NO WATER, NO CAVING

Excavation No.	Depth	USCS	Description
T-19	0.0 – 0.5 ft.	SM	**Topsoil (No map symbol)** Silty fine- to coarse-grained SAND, dark brown to dark gray brown, slightly moist to moist, loose; roots
	0.5 – 6.5 ft.	SM	**Alluvium (Qal)** Silty fine- to medium-grained SAND, dark yellow brown, moist, medium dense; trace clay
	6.5 – 11.0 ft.	SM	**Sedimentary Deposits of Live Oak Canyon (Qlo)** Silty fine- to medium-grained SAND, light yellow brown to light gray brown, very dense; iron oxide staining
			TOTAL DEPTH = 11.0 ft. NO WATER, NO CAVING





Excavation No.	Depth	USCS	Description
T-20	0.0 – 1.0 ft.	SM	**Topsoil (No map symbol)** Silty fine- to coarse-grained SAND, dark brown to dark gray brown, slightly moist to moist, loose; roots
	1.0 – 10.0 ft.	SM	**Alluvium (Qal)** Silty fine- to medium-grained SAND, dark yellow brown to dark gray brown, slightly moist, medium dense; trace gravel
	10.0 – 14.0 ft.	SM	**Older Alluvium (Qoa)** Silty fine- to coarse-grained SAND, dark yellow brown to orange brown, slightly moist, dense; occasional sub-angular gravel, weakly cemented, minor iron oxide staining
			TOTAL DEPTH = 14.0 ft. NO WATER, NO CAVING

Excavation No.	Depth	USCS	Description
T-21	0.0 – 1.0 ft.	SM	**Topsoil (No map symbol)** Silty fine-grained SAND, dark gray brown, slightly moist, loose; roots
	1.0 – 3.5 ft.	SM	**Alluvium (Qal)** Silty fine- to medium-grained SAND, dark yellow brown to dark gray brown, moist, medium dense; minor porosity
	3.5.0 – 11.0 ft.	SM	**Older Alluvium (Qoa)** Silty fine-grained SAND, dark yellow brown to gray brown, moist, dense; minor iron oxide staining, manganese oxide nodules TOTAL DEPTH = 11.0 ft. NO WATER, NO CAVING

Excavation No.	Depth	USCS	Description
T-22	0.0 – 9.0 ft.	SM	**Alluvium (Qal)** Silty fine- to coarse-grained SAND, dark yellow brown, slightly moist, loose; occasional gravel
	9.0 – 13.0 ft.	SM	**Older Alluvium (Qoa)** Sandy Silt, fine-grained, yellow brown to gray brown, moist, stiff; occasional fine gravel, minor porosity, weakly cemented TOTAL DEPTH = 13.0 ft. NO WATER, NO CAVING

BORING NUMBER AGS-1

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company
PROJECT NUMBER 2004-01
DATE STARTED 8/6/20 COMPLETED 8/6/20
DRILLING CONTRACTOR 2R-Drilling
DRILLING METHOD Hollow Stem Auger
LOGGED BY SS CHECKED BY PJD
NOTES

PROJECT NAME Oak Valley Town Center
PROJECT LOCATION Calimesa, CA
GROUND ELEVATION 2270 ft HOLE SIZE 8
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SM	**Topsoil** Silty fine-grained SAND, dark yellow brown to gray brown, dry to slightly moist, loose										
		SM	**Alluvium (Qal)** Silty fine-grained SAND, dark yellow brown to orange brown, moist, medium dense; trace coarse sand, micaceous										
5				SPT	5-7-9 (16)								
		SM	**Older Alluvium (Qoa)** Silty fine- to coarse-grained SAND, dark yellow brown to orange brown, slightly moist, dense; iron oxide staining, micaceous										
10			@10.0 ft., very dense	MC	24-38-50/3"	112	2.9	16	Consol				
15			@15.0 ft., Silty fine-grained SAND, orange brown to red brown, moist, very dense; trace clay, iron oxide staining, micaceous	SPT	40-47-50/5"								
20				MC	47-50/3"	124	6.1	46					
25			@25.0 ft., Silty fine- to coarse-grained, orange brown, slightly moist, very dense; iron oxide staining, micaceous	SPT	37-50/5"								

Total depth = 25.9 feet
No groundwater encountered
Backfilled with soil cuttings

BORING NUMBER AGS-2

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company
PROJECT NUMBER 2004-01
DATE STARTED 8/12/20 COMPLETED 8/12/20
DRILLING CONTRACTOR 2R-Drilling
DRILLING METHOD Hollow Stem Auger
LOGGED BY SS CHECKED BY PJD
NOTES

PROJECT NAME Oak Valley Town Center
PROJECT LOCATION Calimesa, CA
GROUND ELEVATION 2270 ft HOLE SIZE 8
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SM	**Alluvium (Qal)** Silty fine-grained SAND, dark yellow brown to brown, moist, medium dense; trace coarse sand, micaceous										
5				MC	4-4-5 (9)								
10		SM	**Sedimentary Deposits of Live Oak Canyon (Qlo)** Silty fine- to coarse-grained SAND, yellow brown, slightly moist, dense; iron oxide staining, calcium carbonate development, micaceous	SPT	8-12-16 (28)								
15			@15.0 ft., occasional gray brown to blue gray siltstone fragments	MC	50								
20				SPT	25-50								
25		SM	@25.0 ft., Silty fine-grained SAND to fine-grained Sandy SILT, dark yellow brown to gray brown, moist, very dense; trace clay, occasional quartz fragments, iron oxide development, micaceous	MC	50	117	10.2	62	Shear				

Total depth = 25.5 feet
No groundwater encountered
Backfilled with soil cuttings

BORING NUMBER AGS-3

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company
PROJECT NUMBER 2004-01
DATE STARTED 8/7/20 COMPLETED 8/11/20
DRILLING CONTRACTOR 2R-Drilling
DRILLING METHOD Hollow Stem Auger
LOGGED BY SS CHECKED BY PJD
NOTES

PROJECT NAME Oak Valley Town Center
PROJECT LOCATION Calimesa, CA
GROUND ELEVATION 2228 ft HOLE SIZE 8
GROUND WATER LEVELS:
AT TIME OF DRILLING 11.00 ft / Elev 2217.00 ft
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SM	**Alluvium (Qal)** Silty fine- to medium-grained SAND, gray brown, slightly moist, loose; trace fine gravel, micaceous										
5				MC	3-3-5 (8)	105	7.5	33					
10		ML	▽ @10.0 ft., Fine-grained Sandy SILT with Clay, dark gray brown, wet, soft; micaceous, mottled, minor iron oxide development	SPT	1-1-1 (2)								74
15			@15.0 ft., becomes gray brown	MC	3-4-6 (10)	106	16.9	77	Consol				
20			@20.0 ft., increased clay content; minor iron oxide development	SPT	3-3-3 (6)					46	29	17	71
25		CL	@25.0 ft., Silty CLAY with fine-grained Sand, brown to gray brown, wet, soft; minor iron oxide development	MC	5-7-9 (16)	95	25.6	89	Consol				
30		SC	@30.0 ft., Clayey SAND, blue gray to gray brown; occasional fine quartz fragments, trace root fibers	SPT	2-3-7 (10)					32	22	10	36
35													

(Continued Next Page)

BORING NUMBER AGS-3

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company **PROJECT NAME** Oak Valley Town Center

PROJECT NUMBER 2004-01 **PROJECT LOCATION** Calimesa, CA

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
35		ML	@35.0 ft., Clayey SILT grades down to Silty fine-grained SAND, dark gray to dark olive brown, wet, stiff to medium dense	MC	6-9-12 (21)	89	17.0	51					
40		CL	@40.0 ft., Silty to Sandy CLAY, dark gray, wet, stiff	SPT	3-5-8 (13)								
45		SM	@45 ft., Silty fine-grained SAND with clay, blue gray to gray brown, wet, medium dense	MC	6-12-20 (32)	121	12.4	86					
50			@50.0 ft., Interbedded: from Silty fine- to coarse-grained SAND with fine quartz fragments to Clayey SILT with fine-grained Sand	SPT	4-4-7 (11)								59
55			@55.0 ft., Silty fine- to coarse-grained SAND, dark yellow brown, wet, medium dense	SPT	6-5-11 (16)								
60		SC-SM	**Older Alluvium (Qoa)** Silty fine-grained SAND to Clayey fine-grained SAND, dark yellow brown, wet, dense; iron oxide staining, micaceous	MC	11-22-35 (57)								
65			@65.0 ft., Sand becomes fine- to coarse-grained	SPT	8-10-10 (20)								
70		SP	@70.0 ft., Coarse-grained SAND with rock fragments	MC	30-20-26 (46)	115	13.3	78					
		SM	@71.0 ft., Silty fine-grained SAND with Clay										

Total depth = 71.5 feet
Groundwater encountered at 11 feet
Backfilled with soil cuttings

BORING NUMBER AGS-4

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company
PROJECT NAME Oak Valley Town Center
PROJECT NUMBER 2004-01
PROJECT LOCATION Calimesa, CA
DATE STARTED 8/12/20 COMPLETED 8/12/20
GROUND ELEVATION 2197 ft HOLE SIZE 8
DRILLING CONTRACTOR 2R-Drilling
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
AT TIME OF DRILLING ---
LOGGED BY SS CHECKED BY PJD
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SM	**Alluvium (Qal)** Silty fine-grained SAND with Clay, dark gray brown, dry to slightly moist, loose										
5			@5.0 ft., Silty fine-grained SAND to fine-grained Sandy SILT, dark yellow brown to gray brown to olive, moist, medium dense to firm; micaceous	MC	10-12-14 (26)	103	19.4	83	Consol				
10		CL	@10.0 ft., Silty CLAY with fine-grained Sand, yellow brow to gray brown to black, moist, soft; abundant decomposing organic matter, minor iron oxide staining, micaceous	SPT	2-2-3 (5)								
15		CL-ML	@15.0 ft., Fine-grained Sandy SILT, yellow brown to gray brown with Silty CLAY, black, moist, medium dense to stiff; abundant decomposing organic matter, iron oxide staining, micaceous	MC	3-5-10 (15)	93	18.3	61	Consol				
20		OL	@20.0 ft., Organic SILT/PEAT, blue gray to black, moist, soft; abundant decomposing organic matter	SPT	1-2-4 (6)								
25			@25.0 ft., Silty CLAY to Clayey SILT with Peat layers, dark gray to blue gray to black, moist, soft; abundant decomposing organic matter	MC	4-5-6 (11)	60	37.8	57	Consol				
30		CL-ML	@30.0 ft., With fine-grained sand, very moist; trace fine root fibers	SPT	3-5-5 (10)								
35													

(Continued Next Page)

BORING NUMBER AGS-4

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company **PROJECT NAME** Oak Valley Town Center

PROJECT NUMBER 2004-01 **PROJECT LOCATION** Calimesa, CA

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
35		ML	**Older Alluvium (Qoa)** Fine- to coarse-grained Sandy SILT with Clay, yellow brown to gray brown to olive, moist, very stiff; iron oxide staining, micaceous	MC	7-10-13 (23)	121	12.2	84					
40		SM	@40.0 ft., Silty fine- to coarse-grained SAND, dark yellow brown to gray brown to orange brown, slightly moist, very dense; trace fine gravel, iron oxide staining, micaceous	SPT	17-21-21 (42)								
45				MC	50	110	4.8	24					

Total depth = 45.5 feet
No groundwater encountered
Backfilled with soil cuttings

BORING NUMBER AGS-5

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company
PROJECT NUMBER 2004-01
DATE STARTED 8/14/20 COMPLETED 8/14/20
DRILLING CONTRACTOR 2R-Drilling
DRILLING METHOD Hollow Stem Auger
LOGGED BY SS CHECKED BY PJD
NOTES

PROJECT NAME Oak Valley Town Center
PROJECT LOCATION Calimesa, CA
GROUND ELEVATION 2223 ft HOLE SIZE 8
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SM	**Alluvium (Qal)** Silty fine-grained SAND, dark yellow brown to dark gray brown, dry to slightly moist, loose										
5		SM	**Older Alluvium (Qoa)** Silty fine-grained SAND, light yellow brown to light gray brown, slightly moist, dense; minor iron oxide staining, micaceous, weakly cemented	MC	25-34-35 (69)	103	5.1	21	Consol				
10		SM	@10.0 ft., Silty fine-grained SAND to fine-grained Sandy SILT, dark yellow brown to olive brown, moist, medium dense to very stiff; iron oxide staining, micaceous	SPT	5-7-9 (16)								
15			@15.0 ft., becomes dark yellow brown to orange brown, increased fines and moisture content	MC	9-13-16 (29)	119	9.5	62	Shear				
20		SM	@20.0 ft., Silty fine- to coarse-grained SAND with Clay, dark yellow brown to orange brown, moist, dense; trace gravel, iron oxide staining, micaceous	SPT	9-14-11 (25)								
25				MC	18-50	126	6.5	52					

Total depth = 26.0 feet
No groundwater encountered
Backfilled with soil cuttings

BORING NUMBER AGS-6

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company
PROJECT NUMBER 2004-01
DATE STARTED 8/13/20 COMPLETED 8/13/20
DRILLING CONTRACTOR 2R-Drilling
DRILLING METHOD Hollow Stem Auger
LOGGED BY SS CHECKED BY PJD
NOTES

PROJECT NAME Oak Valley Town Center
PROJECT LOCATION Calimesa, CA
GROUND ELEVATION 2190 ft HOLE SIZE 8
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SM	**Alluvium (Qal)** Silty fine-grained SAND, dark yellow brown to olive brown, slightly moist, medium dense; micaceous										
5				MC	15-13-20 (33)								
		SM	**Older Alluvium (Qoa)** Silty fine- to coarse-grained SAND with gravel, yellow brown to gray brown, slightly moist, dense; iron oxide staining, micaceous										
10				SPT	4-8-14 (22)								
15		ML	@15.0 ft., Clayey SILT with fine-grained Sand, gray brown to olive, moist, hard; iron oxide staining, manganese oxide nodules, micaceous	MC	9-15-26 (41)	120	11.7	24	Shear				
20		ML	@20.0 ft., Fine-grained Sandy SILT, blue green to gray, moist, very stiff; minor iron oxide staining, micaceous	SPT	5-5-8 (13)								
25				MC	17-22-30 (52)	122	8.6	61	Shear				
30		ML	@30.0 ft., with Clay, very moist; occasional quartz fragments	SPT	8-8-7 (15)								
35													

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ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company
PROJECT NAME Oak Valley Town Center
PROJECT NUMBER 2004-01
PROJECT LOCATION Calimesa, CA

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
35		SM	@35.0 ft., Silty fine-grained SAND, blue gray, slightly moist to moist, dense; iron oxide staining, micaceous	MC	9-19-24 (43)	110	11.4	58					
40		CL-ML	@40.0 ft., Silty CLAY to Clayey SILT with fine-grained Sand, blue gray, moist to very moist, very stiff; micaceous, trace root fibers	SPT	3-5-9 (14)								
45		SM	@45.0 ft., Silty fine-grained SAND	MC	20-36-50 (86)	127	7.6	63					
50		CL-ML	@50.0 ft., Silty CLAY to Clayey SILT	SPT	4-4-5 (9)								

Total depth = 51.5 feet
No groundwater encountered
Backfilled with soil cuttings

BORING NUMBER AGS-8

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company
PROJECT NUMBER 2004-01
DATE STARTED 8/6/20 COMPLETED 8/6/20
DRILLING CONTRACTOR 2R-Drilling
DRILLING METHOD Hollow Stem Auger
LOGGED BY SS CHECKED BY PJD
NOTES

PROJECT NAME Oak Valley Town Center
PROJECT LOCATION Calimesa, CA
GROUND ELEVATION 2238 ft HOLE SIZE 8
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SM	**Topsoil** Silty fine-grained SAND, dark gray brown, dry to slightly moist, loose										
5		SM	**Alluvium (Qal)** Silty fine- to medium-grained SAND with Clay, dark gray brown to black, moist, medium dense; micaceous	MC	5-7-14 (21)	120	7.1	47					
10		SM	**Older Alluvium (Qoa)** Silty fine- to medium-grained SAND, dark yellow brown to olive brown, slightly moist, dense; iron oxide staining, carbonate, micaceous	SPT	5-11-12 (23)								
15		SM	@15.0 ft., Silty fine-grained SAND to fine-grained SILT, olive, moist, dense to hard; trace clay, iron oxide staining, micaceous	MC	10-26-49 (75)	122	11.4	81	Shear Consol				
20			@20.0 ft., becomes yellow brown to orange brown to olive, increased clay content	SPT	8-11-25 (36)								
25				MC	18-40-50/4"	115	11.6	68					

Total depth = 26.3 feet
No groundwater encountered
Backfilled with soil cuttings

BORING NUMBER AGS-9

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company
PROJECT NUMBER 2004-01
DATE STARTED 8/14/20 COMPLETED 8/14/20
DRILLING CONTRACTOR 2R-Drilling
DRILLING METHOD Hollow Stem Auger
LOGGED BY SS CHECKED BY PJD
NOTES

PROJECT NAME Oak Valley Town Center
PROJECT LOCATION Calimesa, CA
GROUND ELEVATION 2258 ft HOLE SIZE 8
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SM	**Topsoil** Silty fine-grained SAND, dark yellow brown to dark gray brown, dry to slightly moist, loose										
		SM	**Alluvium (Qal)** Silty fine-grained SAND, dark yellow brown to gray brown, slightly moist, loose; micaceous										
5				SPT	1-1-0 (1)								
10			@10.0 ft., trace coarse sand, trace fine gravel, micaceous	MC	10-15-15 (30)								
15		ML	Silty fine-grained SAND to fine-grained Sandy SILT, dark yellow brown to orange brown, moist, loose to stiff; trace coarse sand, trace fine gravel, micaceous	SPT	3-3-4 (7)								
20		ML	**Older Alluvium (Qoa)** Silty fine-grained SAND to fine-grained Sandy SILT, dark yellow brown to orange brown, moist, dense to hard; trace coarse sand, trace fine gravel, iron oxide staining, micaceous	MC	12-19-26 (45)	128	8.5	71	Consol				
25		SM	@25.0 ft., Silty fine- to coarse-grained SAND, yellow brown to gray brown, slightly moist, medium dense; trace fine gravel, iron oxide staining, micaceous	SPT	9-7-8 (15)								

Total depth = 26.5 feet
No groundwater encountered
Backfilled with soil cuttings

BORING NUMBER AGS-10

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company
PROJECT NUMBER 2004-01
DATE STARTED 8/14/20 COMPLETED 8/14/20
DRILLING CONTRACTOR 2R-Drilling
DRILLING METHOD Hollow Stem Auger
LOGGED BY SS CHECKED BY PJD
NOTES

PROJECT NAME Oak Valley Town Center
PROJECT LOCATION Calimesa, CA
GROUND ELEVATION 2258 ft HOLE SIZE 8
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SM	**Topsoil** Silty fine-grained SAND, dark yellow brown to dark gray brown, dry to slightly moist, loose										
		SM	**Alluvium (Qal)** Silty fine-grained SAND, dark yellow brown to gray brown, slightly moist, loose; micaceous										
5				SPT	5-6-7 (13)								
10		SM	**Older Alluvium (Qoa)** Silty fine-gained SAND with gravel, yellow brown to gray brown, slightly moist, dense; trace fine sand, iron oxide staining, micaceous	MC	20-20-30 (50)	126	2.0	16	Consol				
15			@15.0 ft., becomes dark yellow brown to orange brown, moist, trace clay	SPT	7-11-11 (22)								
20		ML	@20.0 ft., Silty fine-grained SAND to fine-grained Sandy SILT, dark yellow brown to olive brown, moist, dense to hard; trace clay, trace fine gravel, iron oxide staining, micaceous	MC	21-25-29 (54)	120	7.2	48					
25		SW	@25.0 ft., Fine- to coarse-grained SAND with gravel, light yellow brown to light gray brown, dry to slightly moist, very dense; iron oxide staining, micaceous	SPT	11-16-17 (33)								

Total depth = 26.5 feet
No groundwater encountered
Backfilled with soil cuttings

BORING NUMBER AGS-11

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company
PROJECT NUMBER 2004-01
DATE STARTED 8/12/20 COMPLETED 8/12/20
DRILLING CONTRACTOR 2R-Drilling
DRILLING METHOD Hollow Stem Auger
LOGGED BY SS CHECKED BY PJD
NOTES

PROJECT NAME Oak Valley Town Center
PROJECT LOCATION Calimesa, CA
GROUND ELEVATION 2220 ft HOLE SIZE 8
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SM	**Topsoil** Silty fine-grained SAND, dark yellow brown to dark gray brown, dry to slightly moist, loose										
		ML	**Sedimentary Deposits of Live Oak Canyon (Qlo)** Silty fine-grained SAND to fine-grained Sandy SILT, yellow brown to orange brown, slightly moist, medium dense to very stiff; iron oxide staining, micaceous										
5				SPT	7-7-8 (15)								
10		SM	@10.0 ft., Silty fine-grained SAND, dark yellow brown to gray brown, dry to slightly moist, very dense; iron oxide staining, micaceous	MC	22-50/5"	113	9.3	51					
15		ML	@15.0 ft., Clayey SILT with fine-grained SAND, dark yellow brown to gray brown to olive, moist, hard; iron oxide, micaceous	SPT	9-16-18 (34)								
20		SW	@20.0 ft., Fine- to coarse-grained SAND with fine Gravel, yellow brown to gray, dry to slightly moist, very dense; iron oxide staining, micaceous	MC	20-34-50/5"	115	3.1	18					
25				SPT	20-27-33 (60)								

Total depth = 26.5 feet
No groundwater encountered
backfilled with soil cuttings

BORING NUMBER AGS-12

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company
PROJECT NUMBER 2004-01
DATE STARTED 8/11/20 COMPLETED 8/11/20
DRILLING CONTRACTOR 2R-Drilling
DRILLING METHOD Hollow Stem Auger
LOGGED BY SS CHECKED BY PJD
NOTES

PROJECT NAME Oak Valley Town Center
PROJECT LOCATION Calimesa, CA
GROUND ELEVATION 2320 ft HOLE SIZE 8
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SM	**Sedimentary Deposits of Live Oak Canyon (Qlo)** Silty fine- to coarse-grained SAND with gravel to cobble, yellow brown, dry to slightly moist, dense										
5			@5.0 ft., Sand becomes fine-grained, minor iron oxide staining	SPT	16-22-26 (48)								
10				MC	50/4"	99	2.4	9					
15			@15.0 ft., quartz fragments	SPT	50/5"								
20		SW	@20.0 ft., Fine- to coarse-grained SAND with gravel, light gray brown to yellow brown, dry to slightly moist, very dense; iron oxide staining, micaceous	MC	50	113	2.5	14					
25		SP	@25.0 ft., Fine-grained SAND with Silt, dark yellow brown to gray brown to olive, moist, dense; trace clay, iron oxide staining, micaceous	SPT	12-17-20 (37)								
30		SW	@30.0 ft., Fine- to coarse-grained SAND with gravel, light gray brown to yellow brown, dry to slightly moist, very dense; iron oxide staining, micaceous	MC	50/5"	111	1.7	9					
35													

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ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company
PROJECT NAME Oak Valley Town Center
PROJECT NUMBER 2004-01
PROJECT LOCATION Calimesa, CA

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
35		SW		SPT	50/5"								
40		SM	@40.0 ft., Silty fine-grained SAND, yellow brown to orange brown to gray brown, moist very dense; trace clay, iron oxide staining, micaceous	MC	50	105	12.8	58					
45			@45.5 ft., occasional quartz fragments	SPT	11-26-36 (62)								
50			@50.0 ft., increased clay content, manganese oxide nodules	MC	50/5"	115	9.5	55					

Total depth = 50.4 feet
No groundwater encountered
Backfilled with soil cuttings

BORING NUMBER AGS-13

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company
PROJECT NUMBER 2004-01
DATE STARTED 8/7/20 COMPLETED 8/7/20
DRILLING CONTRACTOR 2R-Drilling
DRILLING METHOD Hollow Stem Auger
LOGGED BY SS CHECKED BY PJD
NOTES

PROJECT NAME Oak Valley Town Center
PROJECT LOCATION Calimesa, CA
GROUND ELEVATION 2235 ft HOLE SIZE 8
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SM	**Topsoil** Silty fine- to medium-grained SAND, gray brown, slightly moist, loose; trace fine gravel, micaceous										
		SM	**Alluvium (Qal)** Silty fine- to medium-grained SAND, dark yellow brown, slightly moist, loose; trace fine gravel, micaceous										
5		SP	@5.0 ft., Coarse-grained SAND, dark yellow brown to gray brown, dry to slightly moist, loose; trace fine gravel	SPT	3-2-5 (7)								
10				MC	11-19-29 (48)	122	2.4	17	Consol				
15		SM	@15.0 ft., Silty fine- to coarse-grained SAND, dark gray brown, moist, loose; trace clay, trace fine gravel, micaceous	SPT	1-2-4 (6)								
20		SM	**Older Alluvium (Qoa)** Silty fine- to coarse-grained SAND, dark yellow brown to gray brown to olive, dense; trace fine gravel, iron oxide staining, micaceous	MC	11-21-31 (52)	129	9.0	79	Consol				
25				SPT	8-10-14 (24)								
30		SM	@30.0 ft., becomes dark yellow brown to orange brown, moist, very dense; iron oxide staining, micaceous, weakly cemented	MC	30-50/5"	131	6.2	59					
35													

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ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company
PROJECT NAME Oak Valley Town Center
PROJECT NUMBER 2004-01
PROJECT LOCATION Calimesa, CA

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
35		SW	@35.0 ft., Fine- to coarse-grained SAND with Silt, dark yellow brown to gray brown, slightly moist, dense; trace gravel	SPT	15-16-17 (33)								
40				MC	25-47-50/5"	120	4.3	28					
45				SPT	10-13-23 (36)								
50				MC	50	115	3.9	22					

Total depth = 50.5 feet
No groundwater encountered
Backfilled with soil cuttings

BORING NUMBER AGS-14

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company
PROJECT NUMBER 2004-01
DATE STARTED 8/14/20 COMPLETED 8/14/20
DRILLING CONTRACTOR 2R-Drilling
DRILLING METHOD Hollow Stem Auger
LOGGED BY SS CHECKED BY PJD
NOTES

PROJECT NAME Oak Valley Town Center
PROJECT LOCATION Calimesa, CA
GROUND ELEVATION 2275 ft HOLE SIZE 8
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SM	**Topsoil** Silty fine-grained SAND, dark yellow brown to dark gray brown, dry to slightly moist, loose										
		SM	**Alluvium (Qal)** Silty fine-grained SAND, dark yellow brown to gray brown, slightly moist, loose; trace fine gravel, micaceous										
5				SPT	1-1-3 (4)								
10			@10.0 ft., medium dense	MC	9-11-13 (24)	102	3.5	14					
15		SM	**Older Alluvium (Qoa)** Silty fine- to coarse-gained SAND with gravel, yellow brown to gray brown, slightly moist, medium dense; minor iron oxide staining, micaceous	SPT	6-9-9 (18)								
20		ML	@20.0 ft., Silty fine-grained SAND to fine-grained Sandy SILT, dark yellow brown to orange brown, moist, very stiff; trace clay, minor iron oxide, micaceous	MC	8-11-12 (23)	128	5.1	43	Consol				
25			@25.0 ft., with gravel	SPT	7-8-12 (20)								

Total depth = 26.5 feet
No groundwater encountered
Backfilled with soil cuttings

BORING NUMBER AGS-15

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company
PROJECT NUMBER 2004-01
DATE STARTED 8/14/20 COMPLETED 8/14/20
DRILLING CONTRACTOR 2R-Drilling
DRILLING METHOD Hollow Stem Auger
LOGGED BY SS CHECKED BY PJD
NOTES

PROJECT NAME Oak Valley Town Center
PROJECT LOCATION Calimesa, CA
GROUND ELEVATION 2254 ft HOLE SIZE 8
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SM	**Topsoil** Silty fine-grained SAND, dark yellow brown to dark gray brown, dry to slightly moist, loose										
		SM	**Alluvium (Qal)** Silty fine-grained SAND, dark yellow brown to gray brown, slightly moist, medium dense; micaceous										
5				MC	10-6-9 (15)	107	6.7	32					
10		SM	**Older Alluvium (Qoa)** Silty fine- to coarse-gained SAND with gravel, yellow brown to gray brown, slightly moist, medium dense; minor iron oxide staining, micaceous	SPT	6-10-8 (18)								
15				MC	13-21-23 (44)	108	5.7	28					
20		ML	@20.0 ft., Silty fine-grained SAND to fine-grained Sandy SILT, dark yellow brown to orange brown, moist, very stiff; trace clay, minor iron oxide, micaceous	SPT	6-8-8 (16)								
25			@25.0 ft., with gravel	MC	11-17-20 (37)	126	9.8	79	Consol				

Total depth = 26.5 feet
No groundwater encountered
Backfilled with soil cuttings

BORING NUMBER AGS-16

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company
PROJECT NUMBER 2004-01
DATE STARTED 8/11/20 COMPLETED 8/11/20
DRILLING CONTRACTOR 2R-Drilling
DRILLING METHOD Hollow Stem Auger
LOGGED BY SS CHECKED BY PJD
NOTES

PROJECT NAME Oak Valley Town Center
PROJECT LOCATION Calimesa, CA
GROUND ELEVATION 2223 ft HOLE SIZE 8
GROUND WATER LEVELS:
AT TIME OF DRILLING 15.00 ft / Elev 2208.00 ft
AT END OF DRILLING ---
AFTER DRILLING 22.25 ft / Elev 2200.75 ft

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SP	**Alluvium (Qal)** Coarse-grained SAND with fine gravel, light yellow brown to light gray brown, slightly moist, loose; trace fine gravel, micaceous @0.5 ft., becomes fine-grained, dark gray brown to dark yellow brown, moist										
5		ML	@5.0 ft., Silty fine-grained SAND to Sandy SILT with Clay, gray brown to olive to dark yellow brown, moist, loose to soft; micaceous	SPT	3-1-2 (3)								
10		CL-ML	@10.0 ft., Silty CLAY to Clayey SILT with fine-grained Sand, dark gray brown, moist, stiff; micaceous	MC	3-6-8 (14)	92	21.2	68	Consol				
15		CL	@15.0 ft., Silty CLAY with fine-grained Sand, gray brown, wet, stiff	SPT	1-2-4 (6)								78
20			@20.0 ft., brown to dark gray brown, mottled	MC	4-5-6 (11)	93	25.3	84	Consol				
25				SPT	3-3-5 (8)					43	23	20	54
30		SC	@30.0 ft., Clayey fine- to coarse-grained SAND, gray brown to dark olive, saturated, medium dense; minor iron oxide staining, micaceous, trace organics	MC	10-8-13 (21)	122	12.3	88	Consol				
35													

(Continued Next Page)

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company
PROJECT NAME Oak Valley Town Center
PROJECT NUMBER 2004-01
PROJECT LOCATION Calimesa, CA

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
35		SC	**Older Alluvium (Qoa)** Clayey fine- to coarse-grained SAND to fine- to coarse-grained Sandy CLAY	SPT	5-5-6 (11)								
40		SM	@40.0 ft., Silty fine- to coarse-grained SAND with Clay, dark yellow brown to gray brown, mottled, saturated, medium dense; trace fine gravel, iron oxide development	MC	6-8-12 (20)	118	14.9	95					
45		SC-SM	@45.0 ft., becomes Silty fine- to coarse-grained SAND to Clayey fine- to coarse-grained SAND; manganese oxide nodules	SPT	4-6-8 (14)								
50				MC	13-17-20 (37)	123	9.8	72					
55				SPT	9-11-13 (24)								

Total depth = 56.5 feet
Seepage @ 15 feet
groundwater measured at 22.25 feet
Backfilled with soil cuttings

BORING NUMBER AGS-17

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company
PROJECT NUMBER 2004-01
DATE STARTED 8/6/20 COMPLETED 8/6/20
DRILLING CONTRACTOR 2R-Drilling
DRILLING METHOD Hollow Stem Auger
LOGGED BY SS CHECKED BY PJD
NOTES

PROJECT NAME Oak Valley Town Center
PROJECT LOCATION Calimesa, CA
GROUND ELEVATION 2252 ft HOLE SIZE 8
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SM	**Alluvium (Qal)** Silty fine- to coarse-grained SAND, dark red brown, slightly moist, loose										
5				MC	4-10-12 (22)	111	4.5	23					
10			@8.0 ft., becomes dark red brown to dark yellow brown, minor porosity	SPT	4-5-7 (12)								
15		SM	**Older Alluvium (Qoa)** Silty fine- to coarse-grained SAND, dark yellow brown, slightly moist, dense; iron oxide staining	MC	21-27-41 (68)	127	4.5	37	Consol				
20			@20.0 ft., trace clay	SPT	7-9-10 (19)								
25				MC	18-50/5"	123	4.1	30					
30		SM	@30.0 ft., becomes yellow brown to orange brown, slightly moist, dense; iron oxide staining, minor carbonate development	SPT	13-17-18 (35)								
35													

(Continued Next Page)

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company
PROJECT NAME Oak Valley Town Center
PROJECT NUMBER 2004-01
PROJECT LOCATION Calimesa, CA

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
35		SM	@35.0 ft., Sand becomes more fine-grained; weakly cemented, micaceous	MC	12-24-35 (59)	120	3.2	21					
40			@40.0 ft., becomes dark yellow brown to gray brown, dry to slightly moist, very dense; occasional gravel, micaceous	SPT	13-29-50/3"								
45				MC	50/5"	110	1.6	8					
50			Total depth = 50.1 feet No groundwater encountered Backfilled with soil cuttings	SPT	50/1"								

BORING NUMBER AGS-18

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Oak Valley Development Company
PROJECT NUMBER 2004-01
DATE STARTED 8/13/20 COMPLETED 8/13/20
DRILLING CONTRACTOR 2R-Drilling
DRILLING METHOD Hollow Stem Auger
LOGGED BY SS CHECKED BY PJD
NOTES

PROJECT NAME Oak Valley Town Center
PROJECT LOCATION Calimesa, CA
GROUND ELEVATION 2219 ft HOLE SIZE 8
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SM	**Alluvium (Qal)** Silty fine-grained SAND, brown to gray brown, slightly moist, loose										
5		SW	@5.0 ft., Fine- to coarse-grained SAND with Gravel, light yellow brown, light gray brown, dry to slightly moist, medium dense	SPT	4-7-7 (14)								
10		SM	**Older Alluvium (Qoa)** Silty fine-grained SAND to fine-grained Sandy SILT with Clay, gray brown to olive, moist, medium dense to very stiff; occasional gravel, iron oxide staining, micaceous	MC	13-16-21 (37)	124	8.9	67					
15				SPT	6-12-21 (33)								
20		CL-ML	@20.0 ft., Silty CLAY to Clayey SILT with fine-grained SAND, blue green to blue gray, moist, very stiff; occasional fine quartz fragments, iron oxide staining, micaceous	MC	3-7-15 (22)	117	12.3	75	Consol				
25		SM	@25.0 ft., Silty fine- to coarse-grained SAND with Gravel, blue gray, moist, very dense; micaceous	SPT	32-40-15 (55)								

Total depth = 26.5 feet
No groundwater encountered
Backfilled with soil cuttings

APPENDIX B-3

Logs of Borings

SGC (2020)

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. SCG-1

JOB NO.: 20G144-1
PROJECT: Proposed C/I Development
LOCATION: Calimesa, California

DRILLING DATE: 8/12/20
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: ---
CAVE DEPTH: 45 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					OLDER ALLUVIUM: Red Brown Silty fine Sand, trace medium Sand, trace fine root fibers, slightly porous, medium dense-damp							
5		15				106	6					
10		15			@ 8.5', little medium to coarse Sand, trace fine Gravel, medium dense-damp		4					
15		34			Light Red Brown Silty fine to coarse Sand, trace fine to coarse Gravel, medium dense-dry to damp	112	3			27		
20		81			Light Gray Brown Silty fine Sand, trace medium Sand, very dense-damp		5					
25		50/5"			Light Gray Brown fine to coarse Sand, trace fine Gravel, trace Silt, very dense-dry	105	2					
30		89			Light Gray Brown fine Sandy Silt, trace medium Sand, very dense-damp		7					
		50/5"			Light Red Brown fine to coarse Sand, trace fine to coarse Gravel, trace Silt, very dense-damp	108	4					

TBL 20G144-1.GPJ SOCALGEO.GDT 11/3/20

TEST BORING LOG

PLATE B-1a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. SCG-1

JOB NO.: 20G144-1
PROJECT: Proposed C/I Development
LOCATION: Calimesa, California

DRILLING DATE: 8/12/20
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: ---
CAVE DEPTH: 45 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Red Brown fine Sandy Silt, trace to little Clay, trace medium to coarse Sand, very dense-moist							
40		50/4"					12					
45		50/3"				118	11					
					Light Gray Silty fine to coarse Sand, trace fine Gravel, very dense-dry to damp							
50		50/4"					3					
					Boring Terminated at 50'							

TBL 20G144-1.GPJ SOCALGEO.GDT 11/3/20

TEST BORING LOG

PLATE B-1b

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. SCG-2

JOB NO.: 20G144-1
PROJECT: Proposed C/I Development
LOCATION: Calimesa, California

DRILLING DATE: 8/12/20
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: ---
CAVE DEPTH: 18 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
5		54			ALLUVIUM: Orange Brown fine Sandy Silt, trace Clay, very dense-moist		14					
10		50/5"			OLDER ALLUVIUM: Red Brown Silty fine Sand, trace medium to coarse Sand, very dense-moist	126	12					
15		50/5"					10					
20		50/5"			Red Brown Silty fine Sand, trace Clay, trace medium to coarse Sand, very dense-damp	124	10					
25		67			Red Brown fine Sandy Silt, trace Clay, very dense-moist		15					
					Boring Terminated at 25'							

TBL 20G144-1.GPJ SOCALGEO.GDT 11/3/20

TEST BORING LOG

PLATE B-2

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. SCG-3

JOB NO.: 20G144-1
PROJECT: Proposed C/I Development
LOCATION: Calimesa, California

DRILLING DATE: 8/12/20
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: —
CAVE DEPTH: 28 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					COLLUVIUM: Dark Gray Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, slightly porous, trace fine root fibers, medium dense-damp							
5		16				81	4					
					ALLUVIUM: Brown Silty fine Sand, trace medium to coarse Sand, medium dense-damp							
10		10					5					
15		39			@ 13.5', trace Clay	108	4					
20		18					4			33		
					OLDER ALLUVIUM: Orange Brown Silty fine to medium Sand, trace coarse Sand, very dense-dry to damp							
25		50/6"				92	3					
					LIVE OAK CANYON FORMATION: Light Gray Silty fine-grained Sandstone to fine-grained Siltstone, highly weathered, friable, weakly cemented, very dense-damp							
30		67					6			51		
					Gray Brown Silty fine to coarse-grained Conglomeratic Sandstone, little fine to coarse Gravel, highly weathered, friable, weakly cemented, very dense-dry to damp							
		50/3"					2					

TBL 20G144-1.GPJ SOCALGEO.GDT 11/3/20

TEST BORING LOG

PLATE B-3a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. SCG-3

JOB NO.: 20G144-1
PROJECT: Proposed C/I Development
LOCATION: Calimesa, California

DRILLING DATE: 8/12/20
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: ---
CAVE DEPTH: 28 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
40		50/6"					5					
					Light Gray Brown Silty fine-grained Sandstone, some Iron Oxide staining, highly weathered, friable, weakly cemented, very dense-damp							
45		50/6"				103	5					
		50/5"					3					
50					Boring Terminated at 50'							

TBL 20G144-1.GPJ SOCALGEO.GDT 11/3/20

TEST BORING LOG

PLATE B-3b

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. SCG-4

JOB NO.: 20G144-1
PROJECT: Proposed C/I Development
LOCATION: Calimesa, California

DRILLING DATE: 8/14/20
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: ---
CAVE DEPTH: 22 feet
READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					ALLUVIUM: Dark Gray Brown Silty fine to medium Sand, trace to little coarse Sand, trace to little fine Gravel, trace Clay, medium dense-damp							
5		16				107	6					
					Gray Brown Silty fine to coarse Sand, trace fine Gravel, medium dense-dry							
10		17					2					
					Brown Silty fine Sand, trace medium to coarse Sand, trace Clay, medium dense-damp							
15		39				117	4					
					Light Gray Brown Gravelly fine to coarse Sand, trace Silt, dense to very dense-dry to damp							
20		26					4					
25		50/6"				116	3					
					Boring Terminated at 25'							

TBL 20G144-1.GPJ SOCALGEO.GDT 11/3/20

TEST BORING LOG

PLATE B-4

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. SCG-5

JOB NO.: 20G144-1
PROJECT: Proposed C/I Development
LOCATION: Calimesa, California

DRILLING DATE: 8/12/20
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: ---
CAVE DEPTH: 23 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					POSSIBLE FILL: Black to Dark Brown Clayey Silt, trace fine to medium Sand, slightly organic, very stiff-damp to moist							
5		17	3.5			111	9					
		13	3.5		ALLUVIUM: Light Gray Clayey Silt to Silty Clay, trace fine Sand, stiff-damp		8					
10												
15		50/6"			OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace clay, very dense-damp	124	7					
20		14			Brown Silty fine Sand, little medium to coarse Sand, medium dense-moist		13			44		
25		50			Gray Brown Silty Clay, little fine to medium Sand, abundant Calcareous veining, hard-moist to very moist	116	17			72		
30		50/6"			Light Gray Brown Gravelly fine to coarse Sand, little Silt, very dense-damp		6					
		59			Gray Brown Clayey Silt, trace fine Sand, hard-moist	115	16					

TBL 20G144-1.GPJ SOCALGEO.GDT 11/3/20

TEST BORING LOG

PLATE B-5a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. SCG-5

JOB NO.: 20G144-1
PROJECT: Proposed C/I Development
LOCATION: Calimesa, California

DRILLING DATE: 8/12/20
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: ---
CAVE DEPTH: 23 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Brown Silty fine Sand, trace medium to coarse Sand, dense-damp							
40		40					6			30		
					Light Gray Brown Gravelly fine to coarse Sand, very dense-damp							
45		50/4"				114	4					
		56					5					
50					Boring Terminated at 50'							

TBL 20G144-1.GPJ SOCALGEO.GDT 11/3/20

TEST BORING LOG

PLATE B-5b

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. SCG-6

JOB NO.: 20G144-1
PROJECT: Proposed C/I Development
LOCATION: Calimesa, California

DRILLING DATE: 8/13/20
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: ---
CAVE DEPTH: 12 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					ALLUVIUM: Light Gray Clayey Silt, trace fine Sand, stiff-moist							
5		13	4.5				18					
					Dark Brown Silty Clay, trace fine Sand, stiff-moist							
10		17	4.5			107	15					
					Gray Brown Clayey Silt, trace fine Sand, stiff-moist							
15		12	4.5				16					
					Light Brown Silty fine Sand, medium dense-damp to moist							
20		22				94	11					
					Dark Brown Silty fine Sand, trace medium to coarse Sand, medium dense-damp							
25		22					8					
					Boring Terminated at 25'							

TBL 20G144-1.GPJ SOCALGEO.GDT 11/3/20

TEST BORING LOG

PLATE B-6

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. SCG-7

JOB NO.: 20G144-1
PROJECT: Proposed C/I Development
LOCATION: Calimesa, California

DRILLING DATE: 8/13/20
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: ---
CAVE DEPTH: 41 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					ALLUVIUM: Dark Brown Clayey Silt, trace fine to coarse Sand, trace Iron Oxide staining, loose-moist							
5		13	4.5			113	14					
					Dark Brown fine Sandy Silt, trace medium to coarse Sand, trace Calcareous nodules, trace fine Gravel, loose-very moist							
10		7					17					
					Light Brown to Dark Brown Clayey Silt, trace fine Sand, trace fine root fibers, loose-moist							
15		13	4.5			112	15			74		
20		10	1.0				19	29	17	66		
25		21	3.0			110	20	27	14	77		
					Dark Gray fine Sandy Silt interbedded with 5" Dark Gray Silty Clay lenses, medium dense-moist							
30		16					16			76		
		28				116	16			57		

TBL 20G144-1.GPJ SOCALGEO.GDT 11/3/20

TEST BORING LOG

PLATE B-7a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. SCG-7

JOB NO.: 20G144-1
PROJECT: Proposed C/I Development
LOCATION: Calimesa, California

DRILLING DATE: 8/13/20
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: --
CAVE DEPTH: 41 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Light Brown to Brown fine Sandy Silt interbedded with Brown Silty fine to coarse Sand with trace fine Gravel and 3" lenses of Dark Gray Silty Clay, medium dense to very stiff-wet							
40		19					32			48		
					Gray Brown Silty fine to coarse Sand, trace Silt, trace fine Gravel, dense-dry to damp							
45		61				111	3			10		
					Dark Gray Silty Clay with lenses of Dark Gray Silty fine Sand, very stiff-very moist							
50		16	1.5				26	40	24	73		
					Dark Gray Clayey fine Sand, trace medium to coarse Sand, trace fine root fibers, very stiff-moist to very moist							
		43	4.5			113	16					
55					Boring Terminated at 55'							

TBL 20G144-1.GPJ SOCALGEO.GDT 11/3/20

TEST BORING LOG

PLATE B-7b

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. SCG-8

JOB NO.: 20G144-1
PROJECT: Proposed C/I Development
LOCATION: Calimesa, California

DRILLING DATE: 8/13/20
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: ---
CAVE DEPTH: 12 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					ALLUVIUM: Brown Silty fine Sand, trace to little medium to coarse Sand, trace fine Gravel, loose to medium dense-damp							
5		9					7					
10		36				118	13					
15		15			@ 13.5,' trace Iron Oxide staining		9					
20		24			Dark Brown Clayey fine Sand, trace medium to coarse Sand, little Silt, little Iron Oxide staining, medium dense-damp to moist	114	14					
25		18			Dark Gray fine Sandy Silt with 3" lenses of Dark Gray Silty fine Sand, trace to little fine to coarse Sand, trace to little fine Gravel, medium dense-damp to moist		13					
					Boring Terminated at 25'							

TBL 20G144-1.GPJ SOCALGEO.GDT 11/3/20

TEST BORING LOG

PLATE B-8

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. SCG-9

JOB NO.: 20G144-1
PROJECT: Proposed C/I Development
LOCATION: Calimesa, California

DRILLING DATE: 8/13/20
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: ---
CAVE DEPTH: 11 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					ALLUVIUM: Brown Silty fine Sand, trace fine root fibers, trace Clay, trace Calcareous nodules and veining, medium dense-damp to moist							
5		21				115	9					
10		29					9					
15		38				122	8					
20		20					11					
25		56				122	13					
					Boring Terminated at 25'							

TBL 20G144-1.GPJ SOCALGEO.GDT 11/3/20

TEST BORING LOG

PLATE B-9

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. SCG-10

JOB NO.: 20G144-1
PROJECT: Proposed C/I Development
LOCATION: Calimesa, California

DRILLING DATE: 8/14/20
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: ---
CAVE DEPTH: 22 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
5		7			ALLUVIUM: Brown Silty fine Sand, trace medium to coarse Sand, trace fine root fibers, loose-damp		6					
10		58			Brown Silty fine Sand, trace medium Sand, trace Iron oxide staining, dense-damp	126	10			40		
15		14			Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel, trace Clay, medium dense-damp to moist		14					
20		50/6"			OLDER ALLUVIUM: Brown Silty fine Sand, little medium to coarse Sand, trace Calcareous nodules, trace to little fine Gravel, dense to very dense-damp	130	8					
25		34					7					
30		41			@ 28.5', medium dense-very moist	114	17					
		28			Brown Silty fine Sand, trace medium Sand, medium dense-damp		5					

TBL 20G144-1.GPJ SOCALGEO.GDT 11/3/20

TEST BORING LOG

PLATE B-10a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. SCG-10

JOB NO.: 20G144-1
PROJECT: Proposed C/I Development
LOCATION: Calimesa, California

DRILLING DATE: 8/14/20
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: ---
CAVE DEPTH: 22 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
40		24			Brown Silty fine Sand, trace medium Sand, medium dense-damp	105	10					
45		25			Dark Gray Silty fine Sand, trace to little medium to coarse Sand, trace Clay, trace fine Gravel, medium dense-very moist		24					
50		34				116	14					
					Boring Terminated at 50'							

TBL 20G144-1.GPJ SOCALGEO.GDT 11/3/20

TEST BORING LOG

PLATE B-10b

APPENDIX C

Laboratory Testing

Alta California Geotechnical, Inc. (this report)

LABORATORY TESTING

The following laboratory tests were performed on a representative sample in accordance with the applicable latest standards or methods from the ASTM, California Building Code (CBC) and California Department of Transportation.

Classification

Soils were classified with respect to the Unified Soil Classification System (USCS) in accordance with ASTM D-2487 and D-2488.

Particle Size Analysis

Modified hydrometer testing was conducted to aid in classification of the soil. The results of the particle size analysis are presented in Table C.

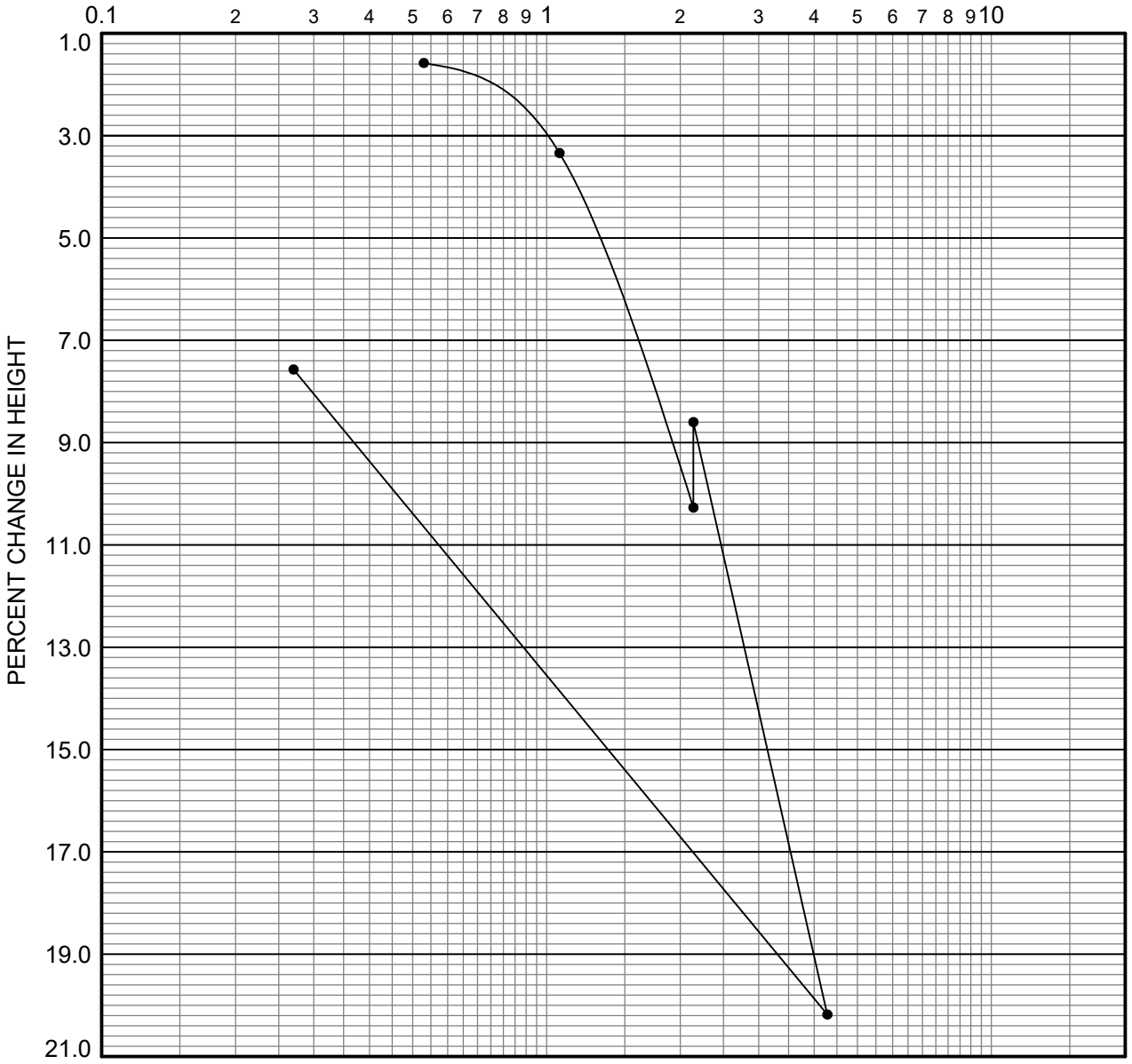
Consolidation Tests

Consolidation testing was performed on eight (8) relatively "undisturbed" soil samples at their natural moisture content in accordance with procedures outlined in ASTM D-2435. The samples were placed in a consolidometer and loads were applied incrementally in geometric progression. The samples (2.42-inches in diameter and 1-inch in height) were permitted to consolidate under each load increment until the slope of the characteristic linear secondary compression portion of the thickness versus log of time plot was apparent. The percent consolidation for each load cycle was recorded as the ratio of the amount of vertical compression to the original 1-inch height. The consolidation test results are shown on Plates C-1 through C-8.

Organic Analyses

Organic testing was performed on two select samples to determine the percent of organics within the soil. The results of this test are presented on Plate C-9.

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-01	25.0	44	80.5	76	52	PT	Peat (Qal)

REMARKS: WATER ADDED AT 2.14 TSF

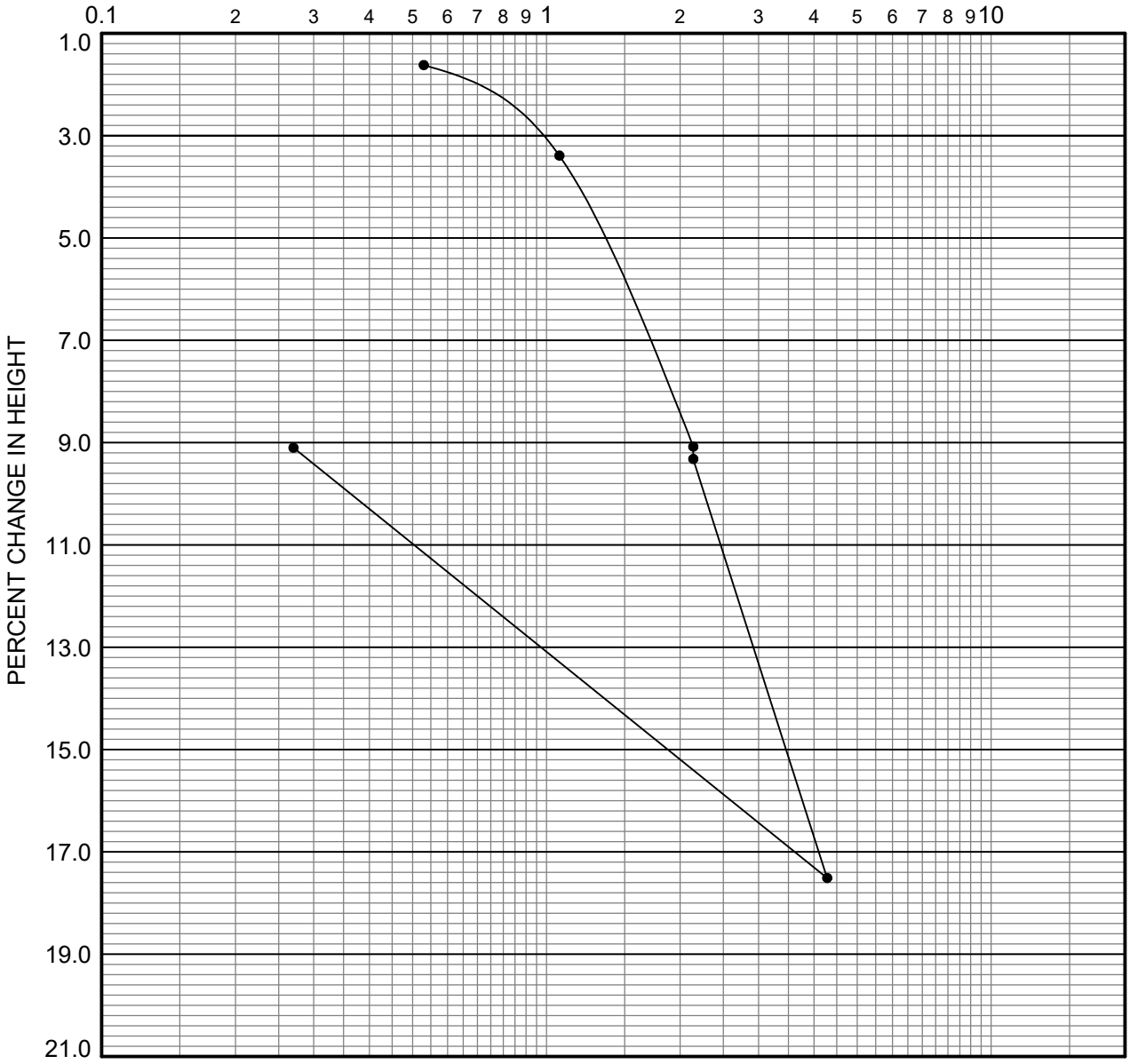
CONSOLIDATION CURVE

Alta California Geotechnical, Inc.

P.N. 1-0366

PLATE C-1

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-04	20.0	31	16.3	10	63	PT	Peat (Qal)

REMARKS: WATER ADDED AT 2.14 TSF

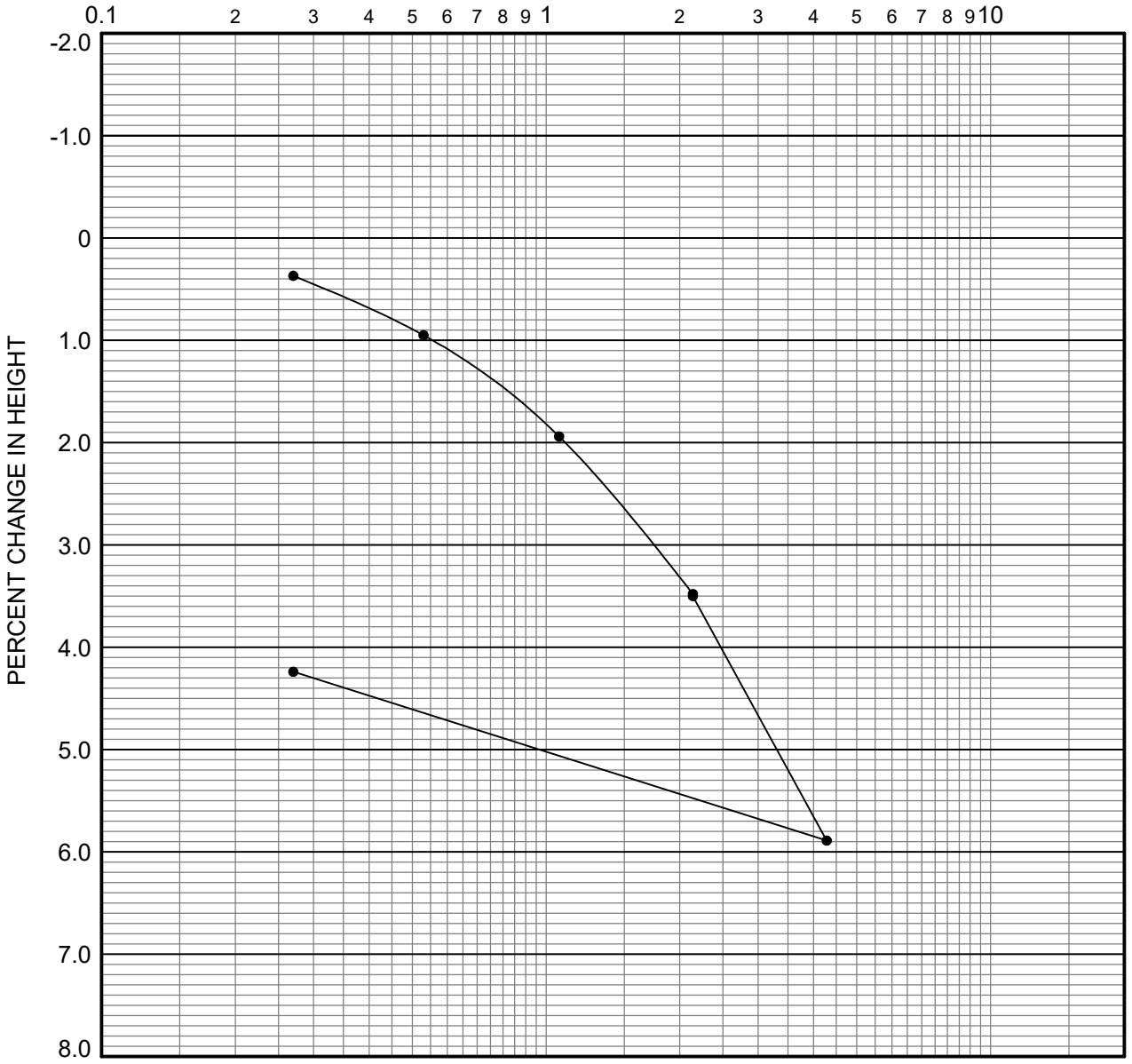
CONSOLIDATION CURVE

Alta California Geotechnical, Inc.

P.N. 1-0366

PLATE C-2

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-04	25.0	99	23.9	95	62	ML	Sandy Silt w/Clay (Qal)

REMARKS: WATER ADDED AT 2.14 TSF

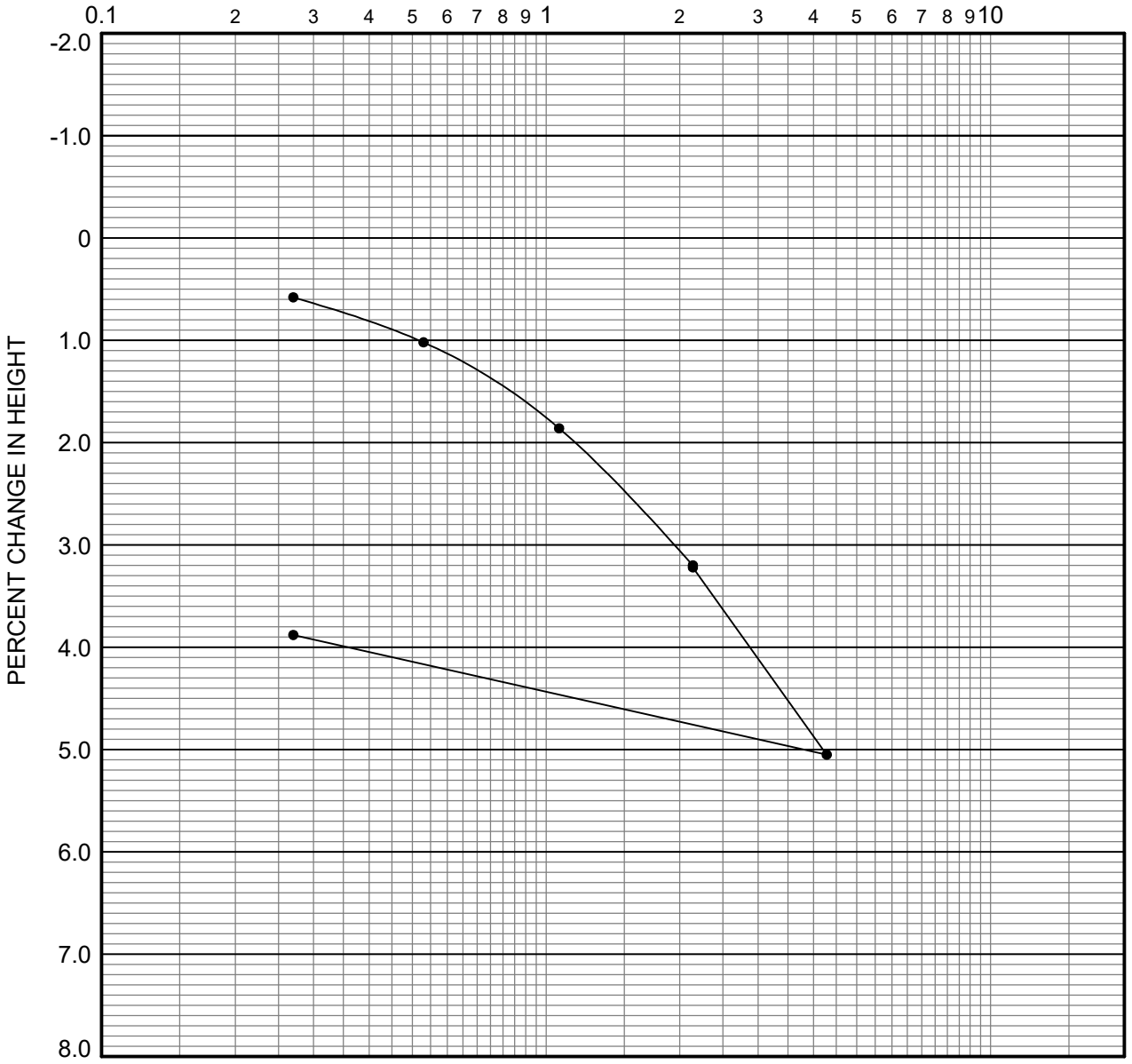
CONSOLIDATION CURVE

Alta California Geotechnical, Inc.

P.N. 1-0366

PLATE C-3

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-05	15.0	106	20.9	99	62	ML	Sandy Silt (Qal)

REMARKS: WATER ADDED AT 2.14 TSF

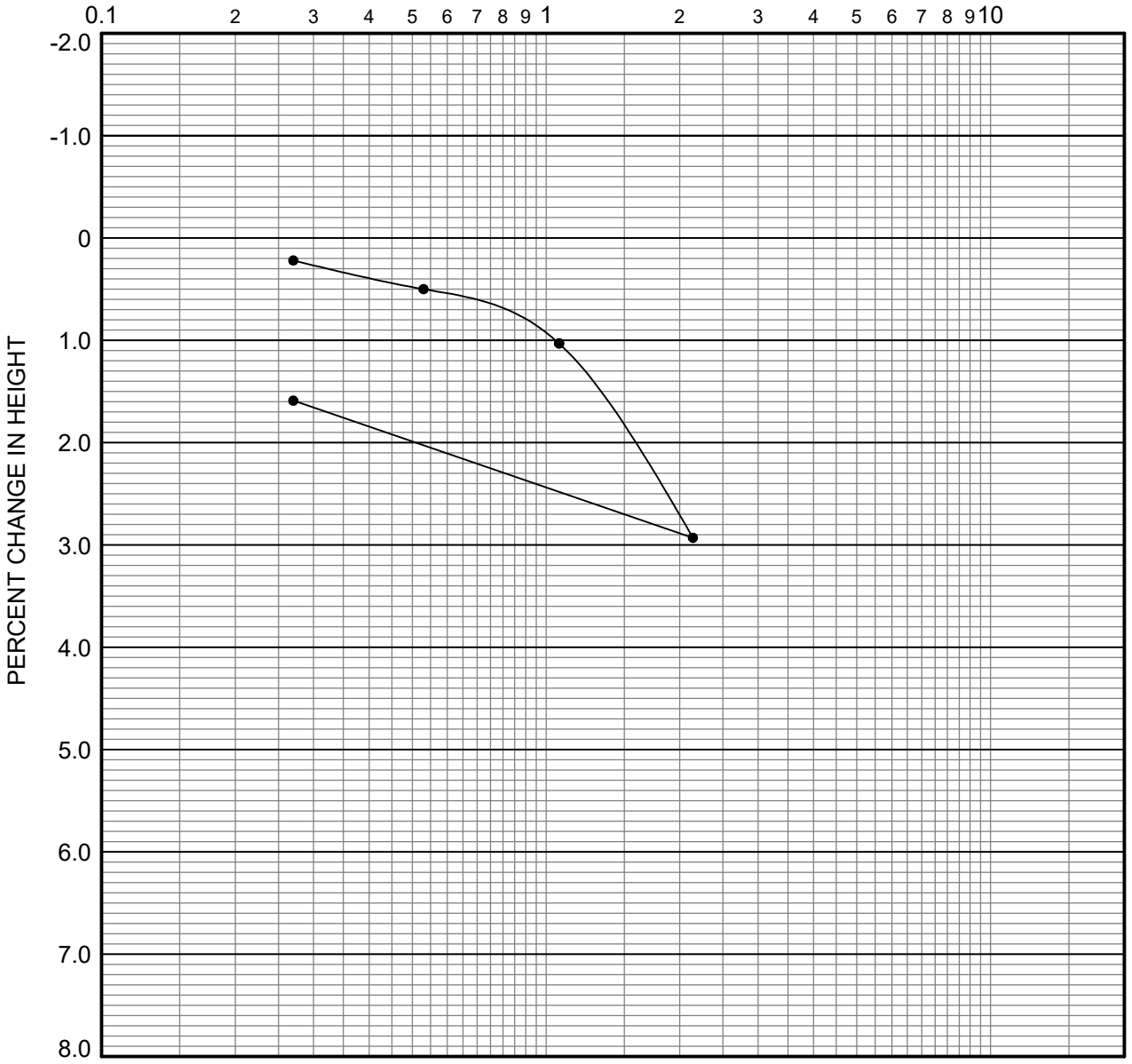
CONSOLIDATION CURVE

Alta California Geotechnical, Inc.

P.N. 1-0366

PLATE C-4

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-06	15.0	101	19.5	80	61	SP	Sand (Qal)

REMARKS: WATER ADDED AT 1.07 TSF

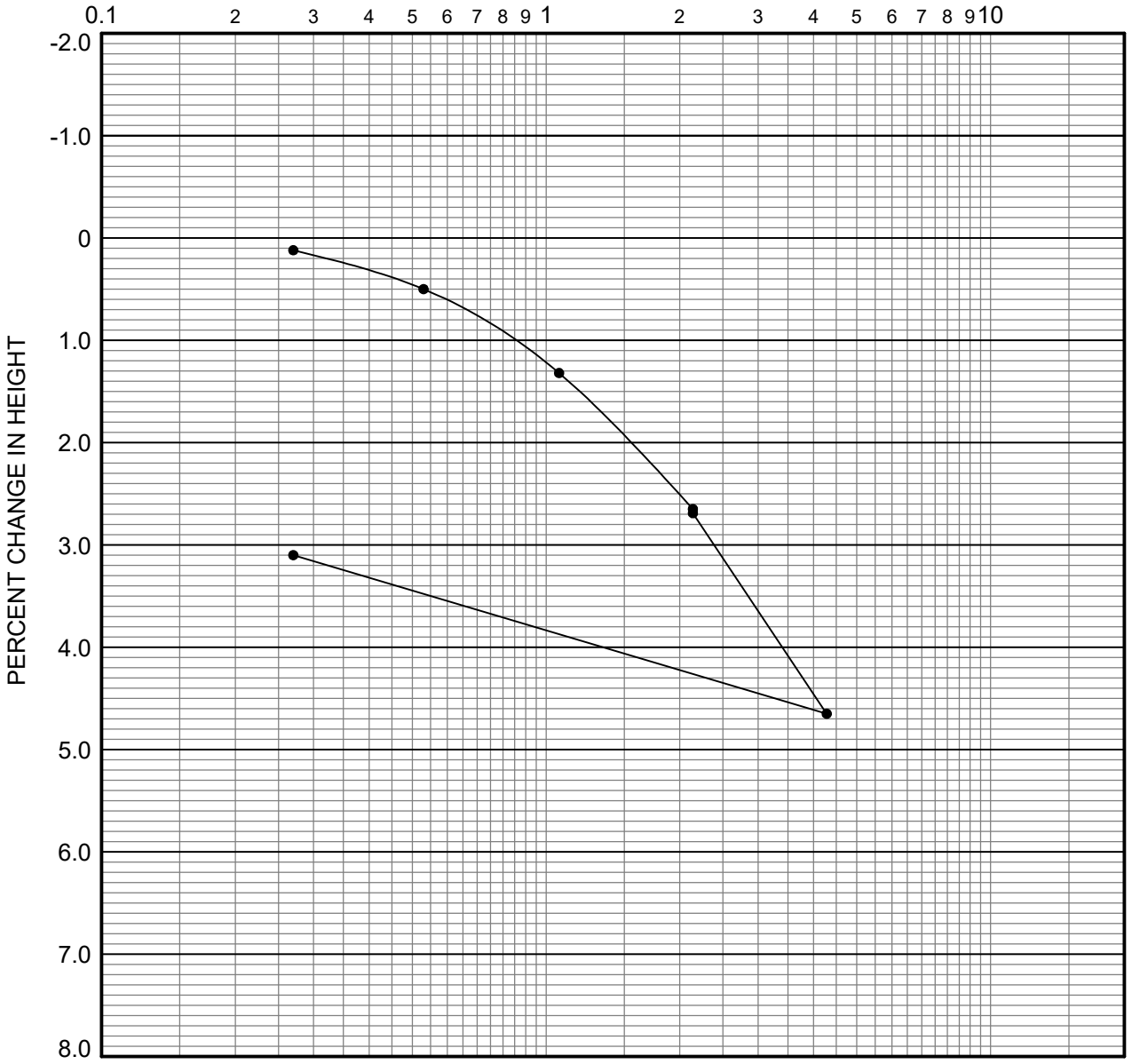
CONSOLIDATION CURVE

Alta California Geotechnical, Inc.

P.N. 1-0366

PLATE C-5

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-07	15.0	112	17.9	99	66	ML	Sandy Silt w/Clay (Qal)

REMARKS: WATER ADDED AT 2.14 TSF

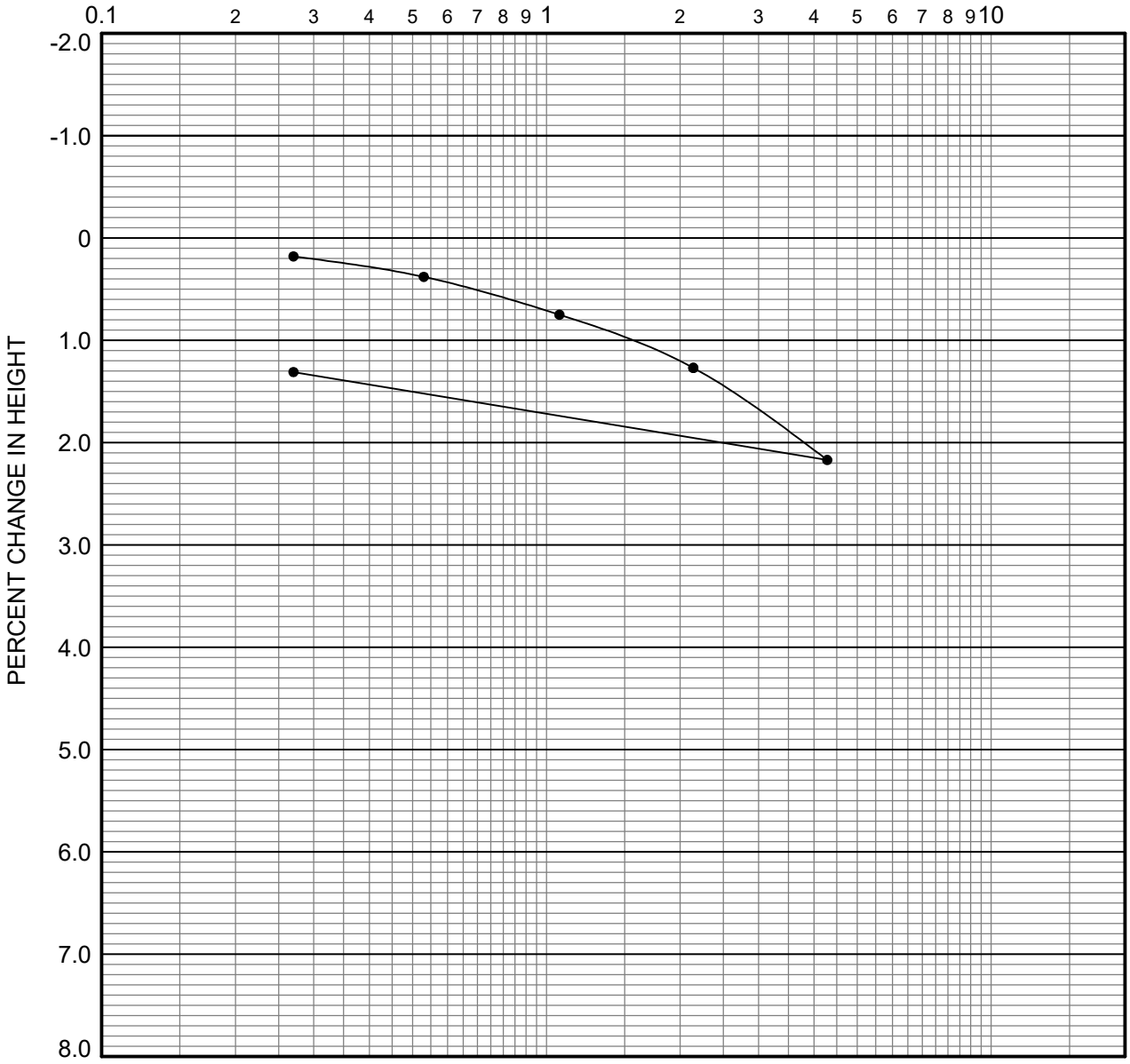
CONSOLIDATION CURVE

Alta California Geotechnical, Inc.

P.N. 1-0366

PLATE C-6

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-07	20.0	124	12.6	99	44	SM	Silty Sand (Qal)

REMARKS: WATER ADDED AT 2.14 TSF

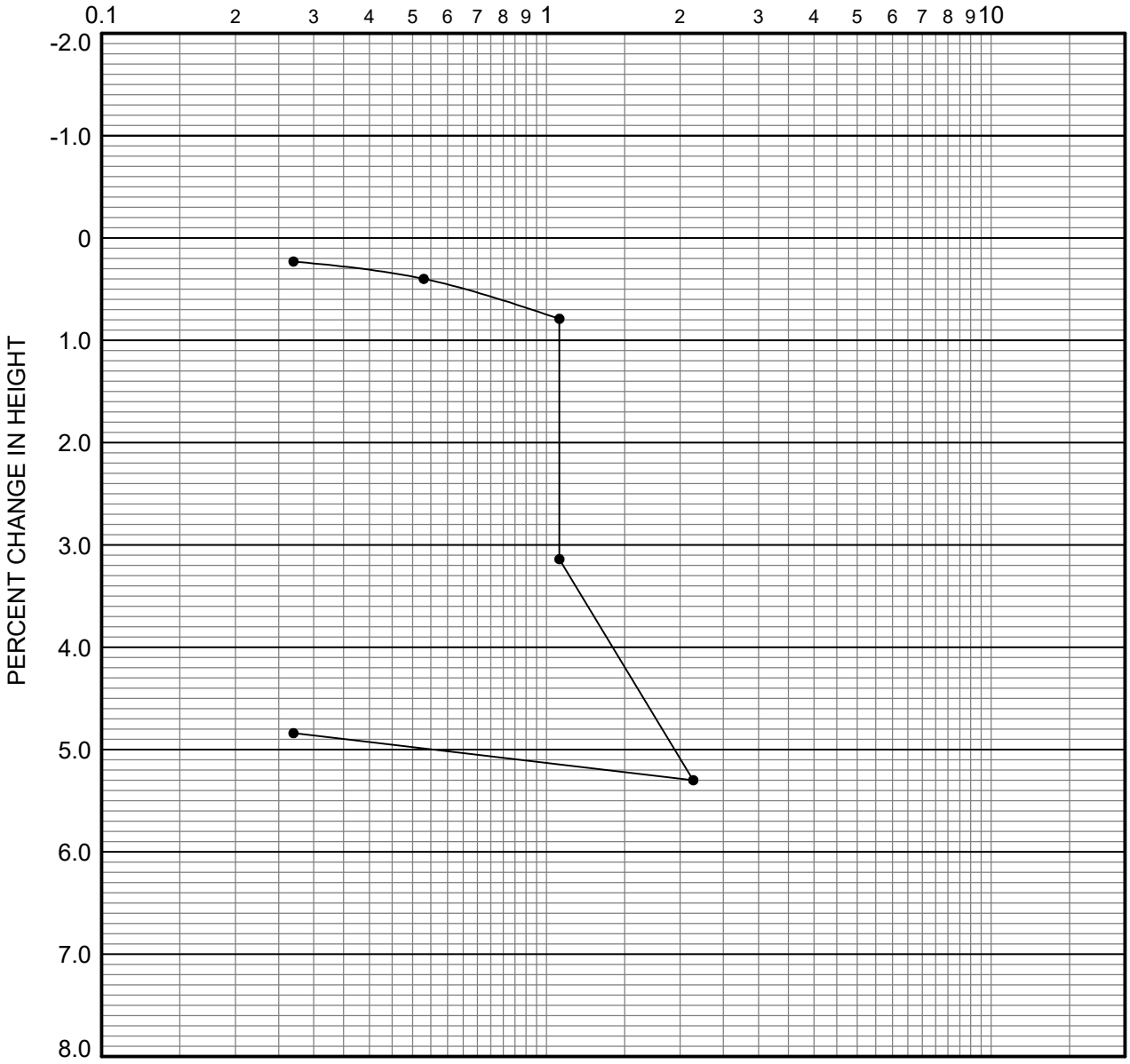
CONSOLIDATION CURVE

Alta California Geotechnical, Inc.

P.N. 1-0366

PLATE C-7

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-08	10.0	103	4.8	21	41	SM	Silty Sand (Qoa)

REMARKS: WATER ADDED AT 1.07 TSF

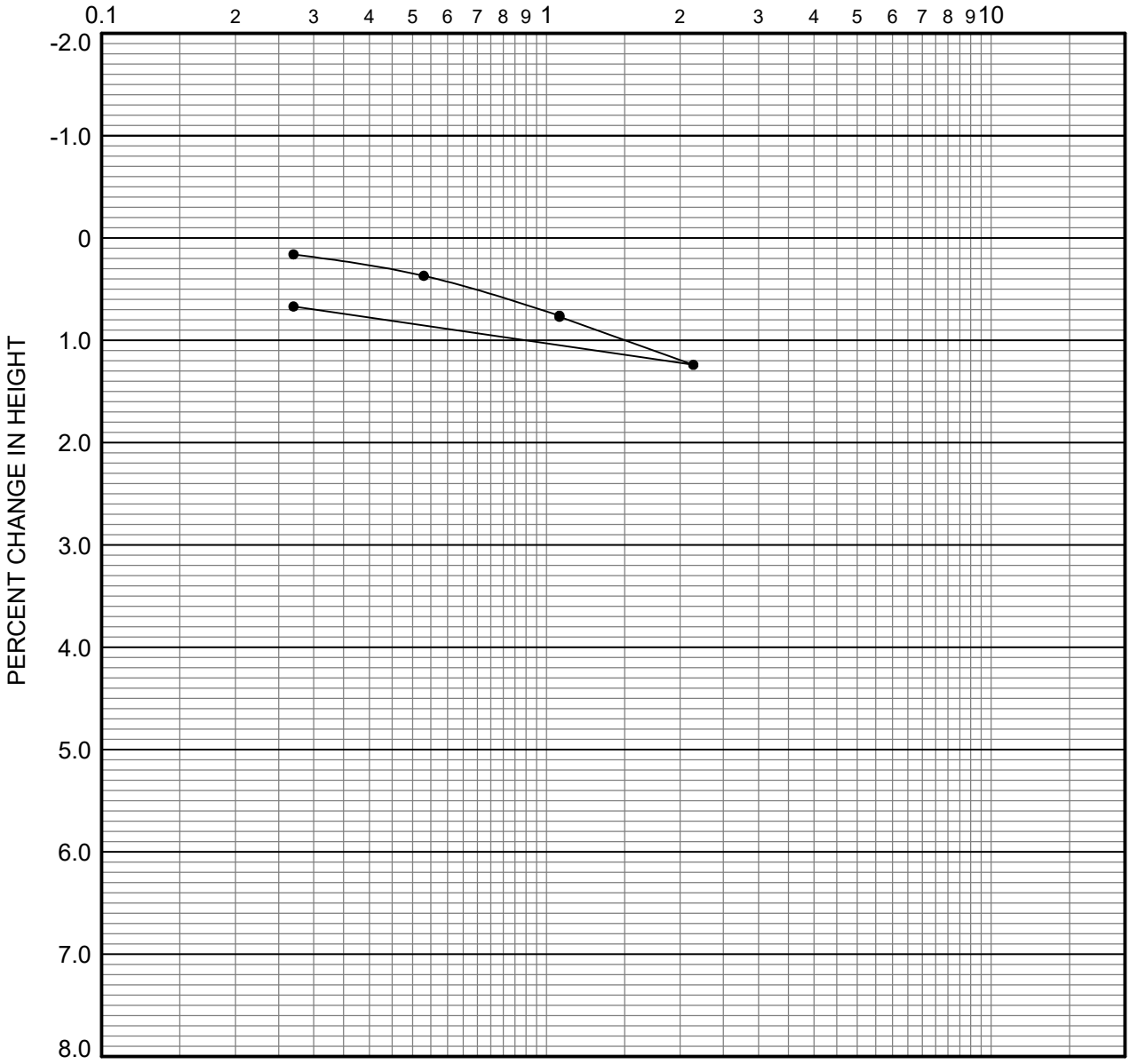
CONSOLIDATION CURVE

Alta California Geotechnical, Inc.

P.N. 1-0366

PLATE C-8

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-09	15.0	110	16.9	89	63	ML	Sandy Silt (Qoa)

REMARKS: WATER ADDED AT 1.07 TSF

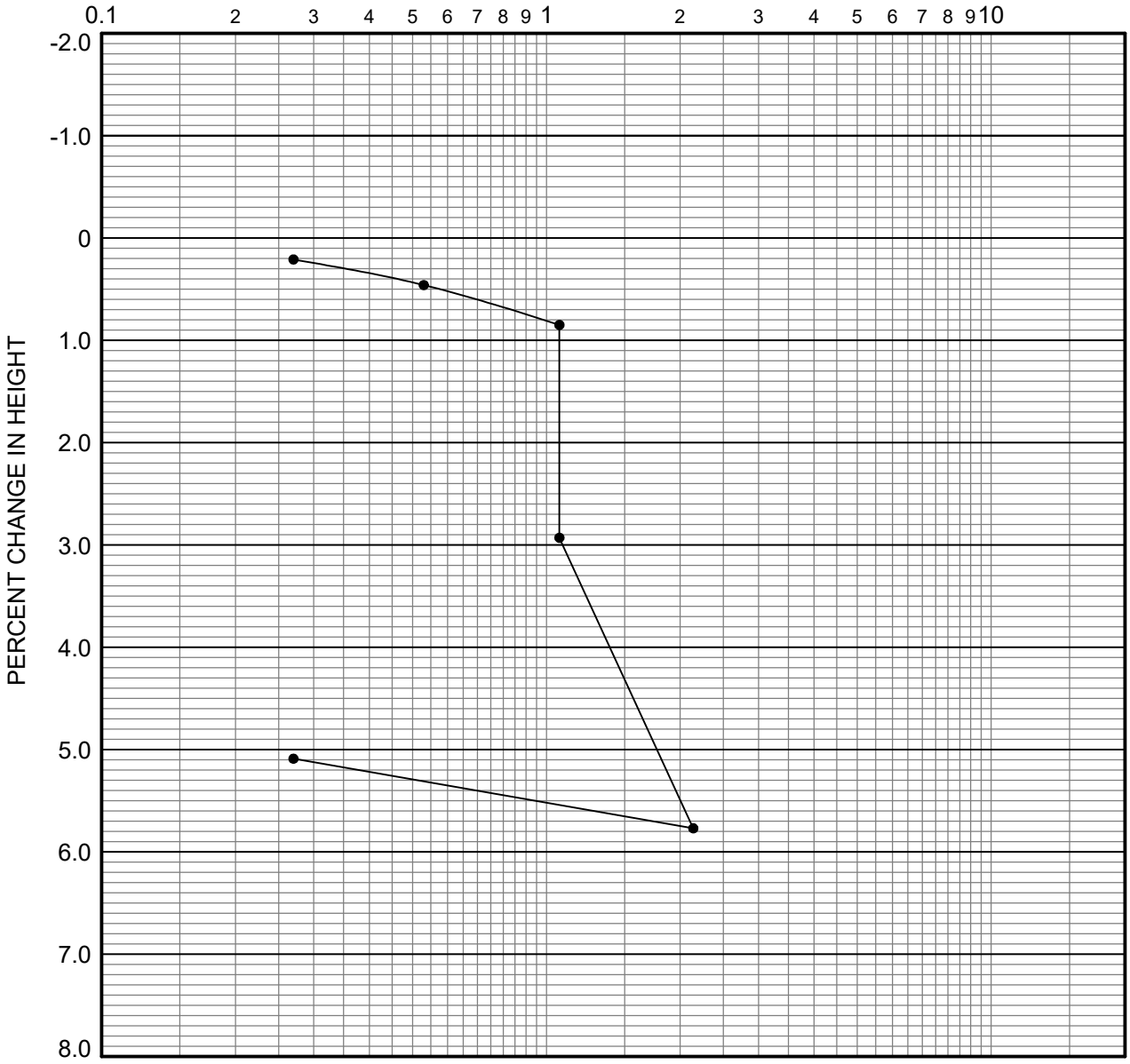
CONSOLIDATION CURVE

Alta California Geotechnical, Inc.

P.N. 1-0366

PLATE C-9

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-10	10.0	100	7.3	30	53	ML	Sandy Silt (Qoa)

REMARKS: WATER ADDED AT 1.07 TSF

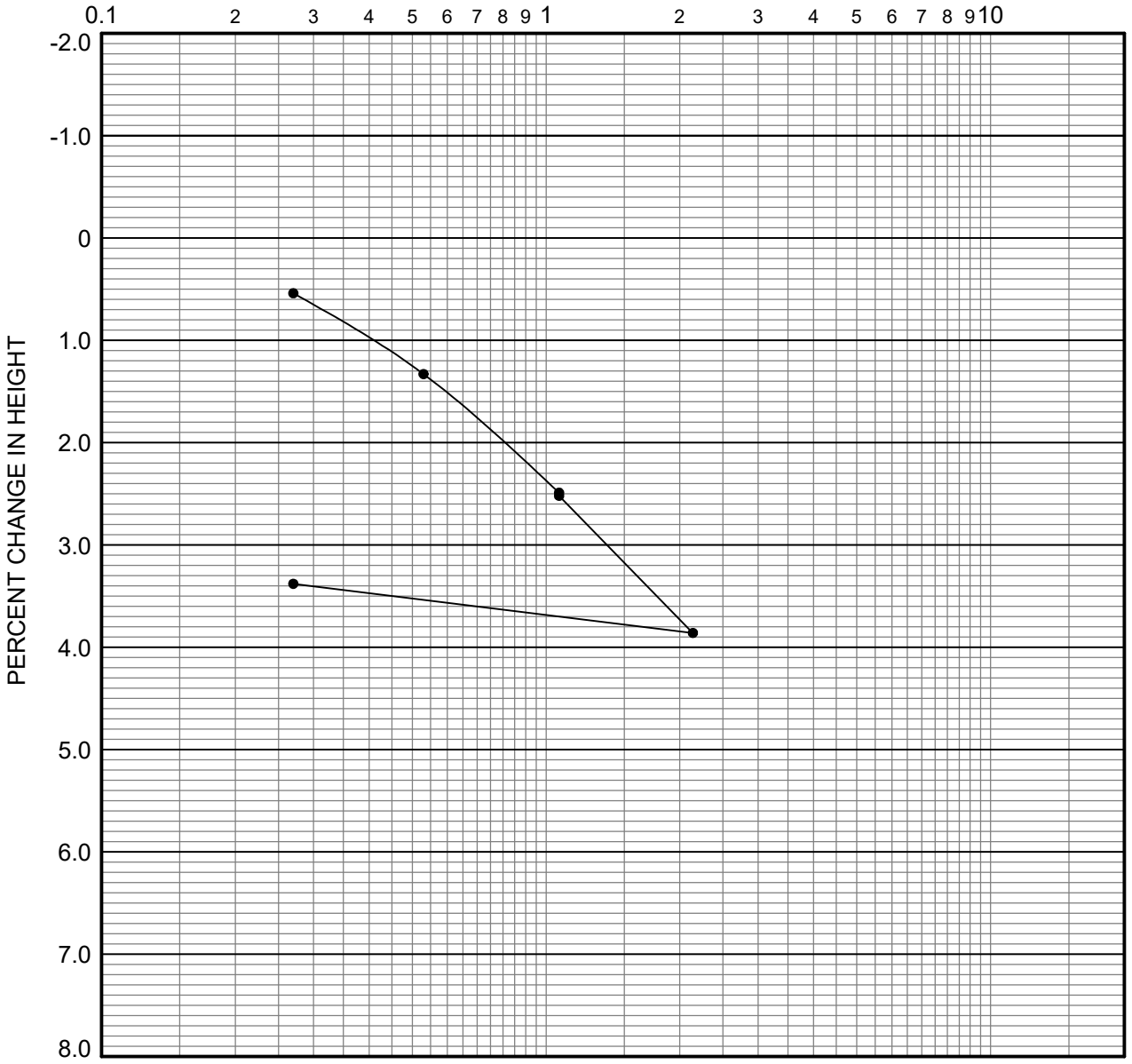
CONSOLIDATION CURVE

Alta California Geotechnical, Inc.

P.N. 1-0366

PLATE C-10

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-11	15.0	103	22.8	99	65	ML	Sandy Silt w/Clay (Qoa)

REMARKS: WATER ADDED AT 1.07 TSF

CONSOLIDATION CURVE

Alta California Geotechnical, Inc.

P.N. 1-0366

PLATE C-11

APPENDIX C-1

Laboratory Testing

PSE, 2004

TABLE C-1
SUMMARY OF LABORATORY TEST DATA
W.O. 700065-J

BORING	DEPTH (FEET)	SOIL DESCRIPTION	GROUP SYMBOL	MAXIMUM DENSITY (PCF)	OPTIMUM MOISTURE CONTENT (%)	DIRECT SHEAR	PLUS NO.4 SEIVE (plus 4.76mm) (%)	SAND (4.76mm-0.075mm) (%)	SILT (0.075mm-0.005mm) (%)	CLAY (minus 0.005mm) (%)	EXPANSION INDEX UBC 18-2	OTHER TESTS REMARKS
B-035	20	Silty Sand (Qal)	SM				0	58	30	12		Consolidation-Plate C-1
B-035	27	Silty Sand (Qal)	SM	130.2	8.6		10	58	25	7		
B-035	30	Silty Sand (Qal)	SM				3	55	32	10		Consolidation-Plate C-2
B-036	21	Silty Sand (Qal)	SM	122.7	10.8		2	59	31	8		
B-037	15	Sandy Siltstone (QTst)					5	45	40	10		Consolidation-Plate C-3
B-038	20	Silty Sand (Qoa)	SM				0	76	17	7		Consolidation-Plate C-4
B-039	25	Sandy Siltstone (QTst)		120.4	12.5	SEE PLATE C-161	7	51	31	11	32	Chemical-Plate C-243 Resistivity = 2360, pH = 7.7
B-039	50	Sandy Siltstone (QTst)				SEE PLATE C-162	0	42	46	12		
B-039	55	Sandy Siltstone (QTst)		122.4	11.1	SEE PLATE C-163	5	52	33	10	11	Chemical-Plate C-243 Resistivity = 3470, pH = 7.0
B-040	24	Sandy Siltstone (QTst)		117.8	13.3	SEE PLATE C-164	5	55	29	11	42	Chemical-Plate C-243 Resistivity = 2090, pH = 8.0
B-041	30	Pebble Conglomerate (QTst)				SEE PLATE C-165	16	60	20	4		
B-041	51	Sandy Siltstone (QTst)				SEE PLATE C-166	2	51	34	13		
B-041	70	Silty Sandstone (QTst)					0	64	32	4		Consolidation - Plate C-5
B-041	71	Silty Sandstone (QTst)		125.0	9.0	SEE PLATE C-167	0	73	22	5	0	Chemical-Plate C-244
B-042	30	Sandy Siltstone (QTst)					0	63	28	9		Consolidation - Plate C-6
B-044	25	Silty Sand (Qal)	SM				14	66	16	4		Consolidation - Plate C-7
B-045	20	Gravelly Sand (Qal)	SP				17	72	8	3		Consolidation - Plate C-8
B-045	30	Silty Sand (Qal)	SM				16	52	25	7		Consolidation - Plate C-9
B-046	30	Silty Sand (Qal)	SM				9	62	21	8		Consolidation - Plate C-10
B-047	30	Silty Sand (Qal)	SM				0	53	32	15		Consolidation - Plate C-11
B-047	31	Silty Sand (Qal)	SM	128.8	9.5		2	58	30	10		
B-047	35	Silty Sand (Qal)	SM				2	53	30	15		Consolidation - Plate C-12

TABLE C-1
SUMMARY OF LABORATORY TEST DATA
W.O. 700065-J

BORING	DEPTH (FEET)	SOIL DESCRIPTION	GROUP SYMBOL	MAXIMUM DENSITY (PCF)	OPTIMUM MOISTURE CONTENT (%)	DIRECT SHEAR	PLUS NO.4 SEIVE (plus 4.76mm) (%)	SAND (4.76mm-0.075mm) (%)	SILT (0.075mm-0.005mm) (%)	CLAY (minus 0.005mm) (%)	EXPANSION INDEX UBC 18-2	OTHER TESTS REMARKS
B-079	70	Silty Sandstone (Qtst)		120.0	11.9	SEE PLATE C-186	0	33	44	23		
B-080	20	Silty Sand (Qoa)	SM	132.3	8.3		6	64	22	8		
B-081	15	Silty Sand (Qal)	SM				0	71	22	7		Consolidation-Plate C-58
B-082	10	Sand with Silt (Qal)	SP-SM				8	78	11	3		Consolidation-Plate C-59
B-082	20	Sandy Siltstone (Qtst)		126.2	9.1	SEE PLATE C-187	0	70	20	10		
B-082	35	Sandy Siltstone (Qtst)				SEE PLATE C-188	0	56	27	17		
B-082	45	Sandy Siltstone (Qtst)				SEE PLATE C-189	0	70	15	15		
B-083	20	Silty Sand (Qoa)	SM			SEE PLATE C-190	0	53	30	17		
B-084	20	Silty Sandstone (Qtst)				SEE PLATE C-191	0	60	30	10		
B-084	35	Sandy Siltstone (Qtst)				SEE PLATE C-192	0	45	42	13		
B-085	15	Silty Sand (Qoa)	SM	130.6	8.7		0	79	18	3		Consolidation-Plate C-60
B-090	26	Gravelly Sand (Qoa)	SP			SEE PLATE C-193						
B-093	6	Silty Sandstone (Qtst)		125.9	10.0	SEE PLATE C-194	0	71	20	9		Chemical-Plate C-249 Resistivity = 6960, pH = 6.8
B-093	13	Silty Sandstone (Qtst)				SEE PLATE C-195	0	58	22	10		
B-093	20	Sandy Siltstone (Qtst)					0	40	48	12		Consolidation-Plate C-61
B-095	10	Silty Sand (Qal)	SM				0	70	20	10		Consolidation-Plate C-62
B-095	11	Silty Sand (Qal)	SM	126.6	10.7							Chemical-Plate C-249 Resistivity = 4090, pH = 6.8
B-096	5	Silty Sand (Qal)	SM				0	71	22	7		Consolidation-Plate C-63
B-096	11	Silty Sand (Qal)	SM				0	60	20	20		Consolidation-Plate C-64
B-096	12	Silty Sand (Qal)	SM	125.1	11.9	SEE PLATE C-196	0	72	16	12		Chemical-Plate C-250 Resistivity = 3050, pH = 6.8
B-099	15	Silty Sand (Qal)	SM				10	69	12	9		Consolidation-Plate C-65
B-099	21	Gravelly Sand (Qal)	SP	130.2	7.9	SEE PLATE C-197	18	71	8	3	0	

TABLE C
SUMMARY OF LABORATORY TEST DATA
W.O. 700065-J

BORING	DEPTH (FEET)	SOIL DESCRIPTION	GROUP SYMBOL	MAXIMUM DENSITY (PCF)	OPTIMUM MOISTURE CONTENT (%)	DIRECT SHEAR	PLUS NO.4 SEIVE (plus 4.76mm) (%)	SAND (4.76mm-0.075mm) (%)	SILT (0.075mm-0.005mm) (%)	CLAY (minus 0.005mm) (%)	EXPANSION INDEX UBC 18-2	CONSOL	OTHER TESTS REMARKS
B-105	20	Silty Sand (Qal)	SM				2	62	26	10		SEE PLATE C-76	Consolidation-Plate C-76
B-112	10	Silty Sand (Qal)	SM				1	58	28	13		SEE PLATE C-93	Consolidation-Plate C-93
B-112	15	Sandy Silt (Qal)	ML				1	48	35	16		SEE PLATE C-94	Consolidation-Plate C-94
B-112	22	Silty Sand (Qia)	SM				2	69	18	11		SEE PLATE C-95	Consolidation-Plate C-95
B-112	25	Silty Sand (Qia)	SM				2	52	36	10		SEE PLATE C-96	Consolidation-Plate C-96
B-112	30	Silty Sand (Qia)	SM				11	65	18	6		SEE PLATE C-97	Consolidation-Plate C-97
B-112	35	Silty Sand (Qia)	SM				1	56	33	10		SEE PLATE C-98	Consolidation-Plate C-98
B-112	50	Silty Sand (Qoa)	SM				3	71	18	8		SEE PLATE C-99	Consolidation-Plate C-99

Expansion Index Tests

Expansion Index tests were performed to evaluate the expansion potential of typical on-site soils. Testing was carried out according to UBC Method 18-2. The results are presented in Table C-1.

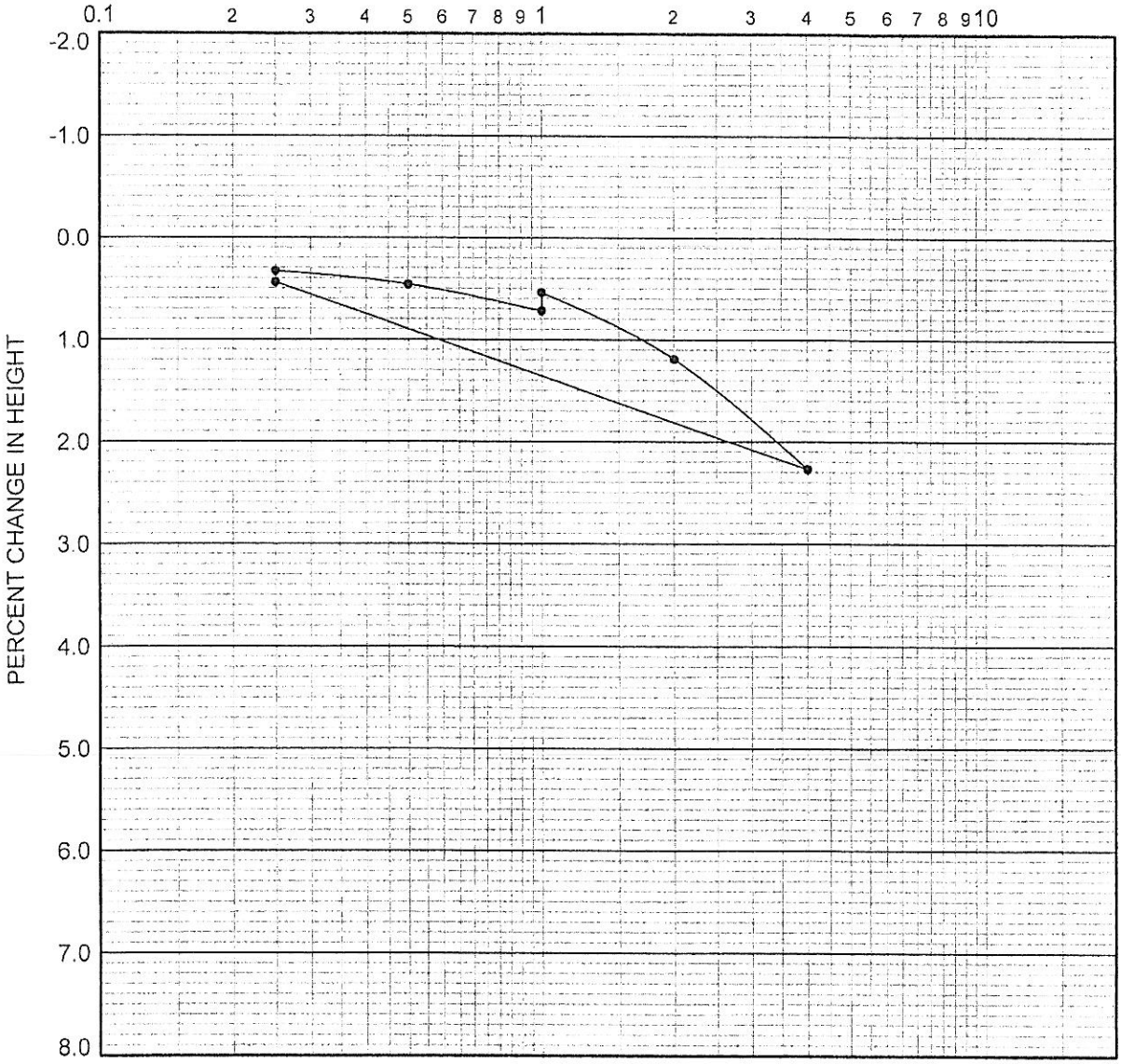
Corrosivity Testing

Corrosivity tests were performed to analyze the corrosion potential of the on-site soils on ferrous metals and concrete. Sulfate contents were determined and are shown on Plates 243 through 253.

The pH and electrical resistivity were also determined and are summarized in the following table.

Electrical Resistivity and pH			
Boring/Trench	**Depth**	**pH**	**Resistivity (ohms-cm)**
B-039	25	7.7	2360
B-039	55	7.0	3470
B-040	24	8.0	2090
B-054	20	7.8	3920
B-059	20	7.8	6130
B-067	5	6.6	3570
B-070	5	7.4	4200
B-073	10	7.3	4260
B-079	45	6.5	2180
B-093	6	6.8	6960
B-095	11	6.8	4090
B-096	12	6.8	3050
BB-01	16	8.2	4550
BB-03	11	8.3	4480
BB-05	11	8.3	4080
BB-08	4	8.4	3270
H-01	3	6.9	3950
H-04	3	6.9	3950
H-06	9	7.7	4100

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-037	15.0	131	8.6	85	49		Sandy Siltstone (QTst)

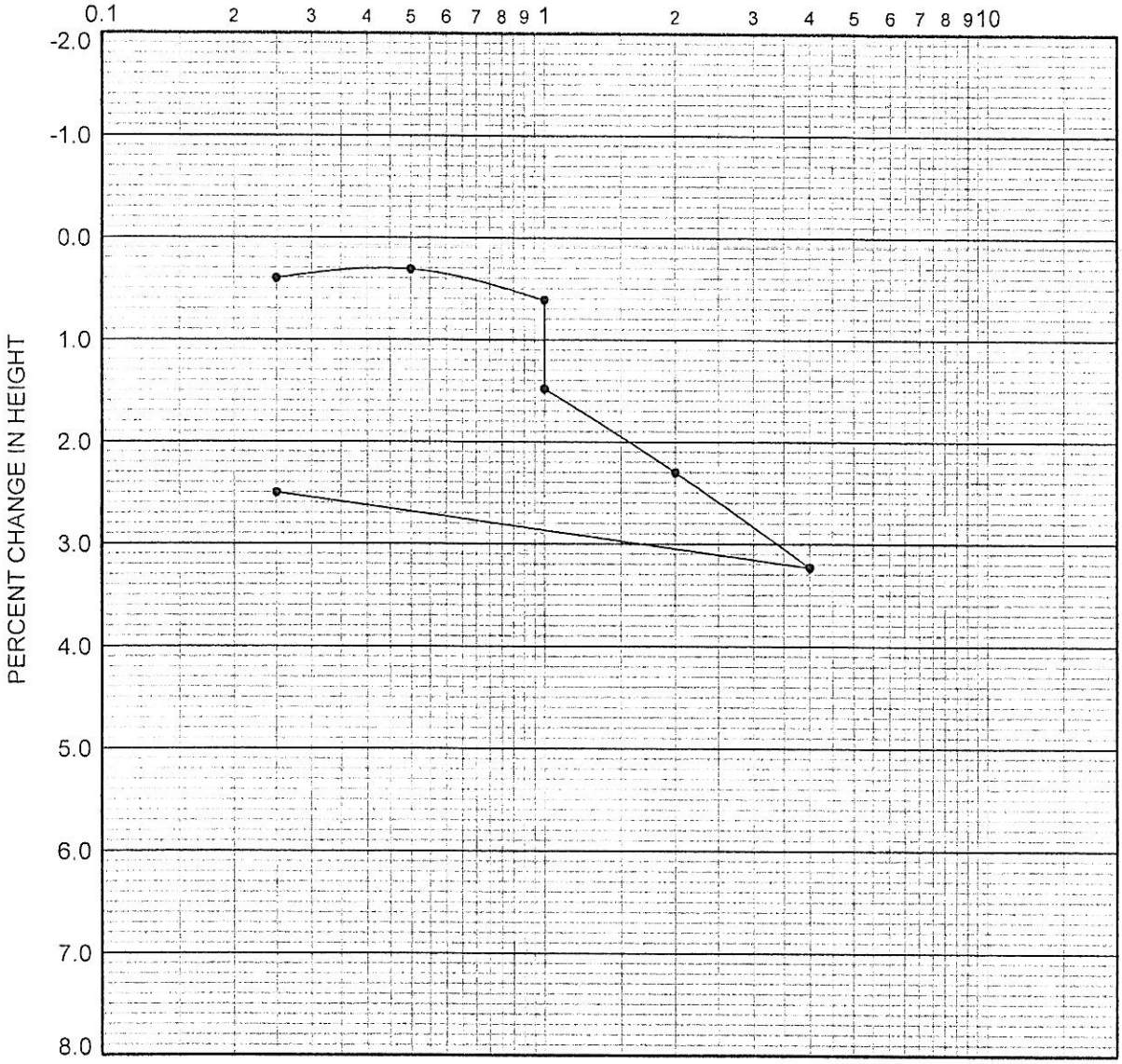
REMARKS: WATER ADDED AT 1.0 TSF

CONSOLIDATION CURVE

PACIFIC SOILS ENGINEERING, INC.

W.O. 700065-J PLATE C-3

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-081	15.0	112	5.5	31	29	SM	Silly Sand (Qal)

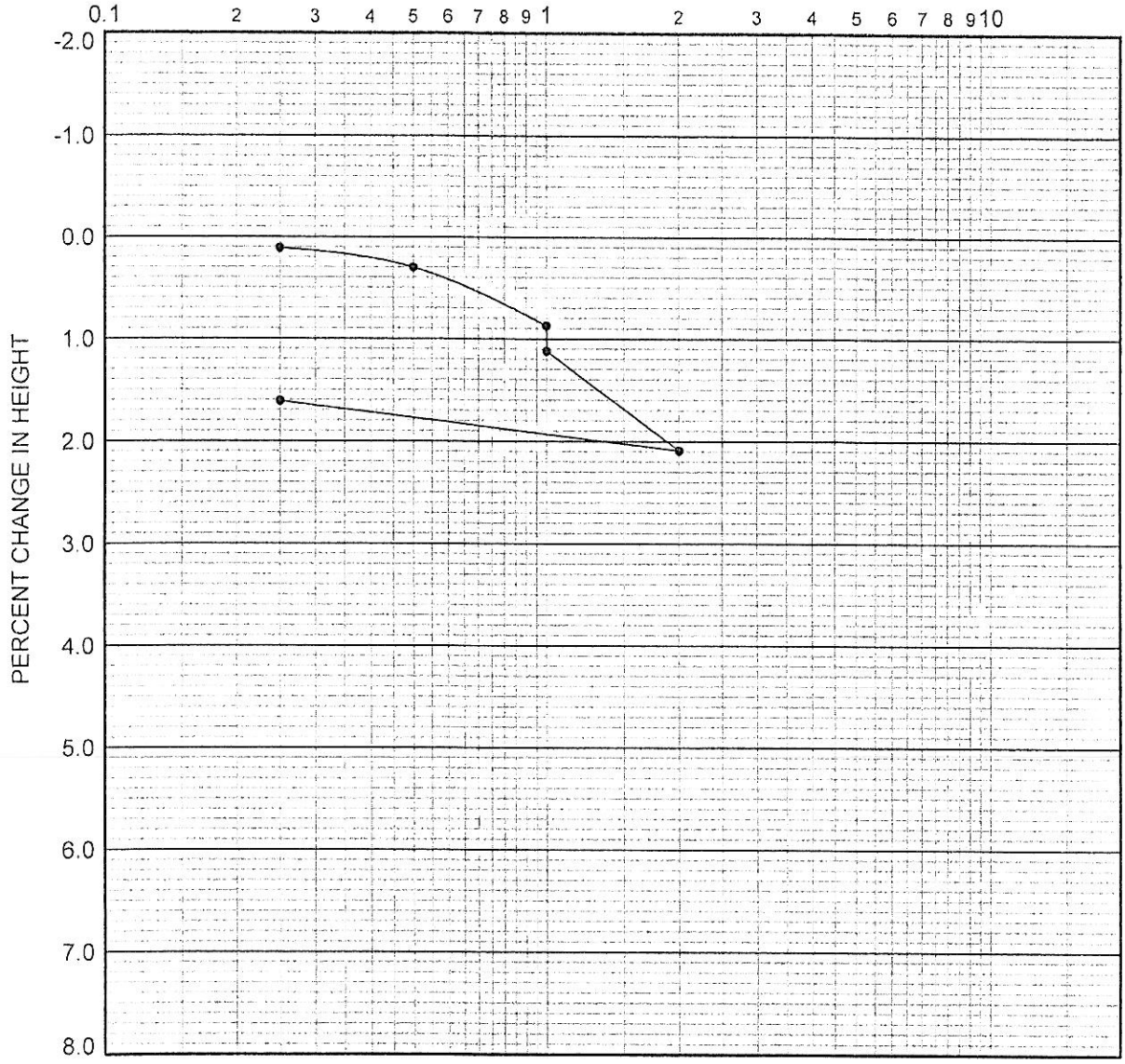
REMARKS: WATER ADDED AT 1.0 TSF

CONSOLIDATION CURVE

PACIFIC SOILS ENGINEERING, INC.

W.O. 700065-J PLATE C-58

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-095	10.0	113	13.2	75	30	SM	Silty Sand (Qal)

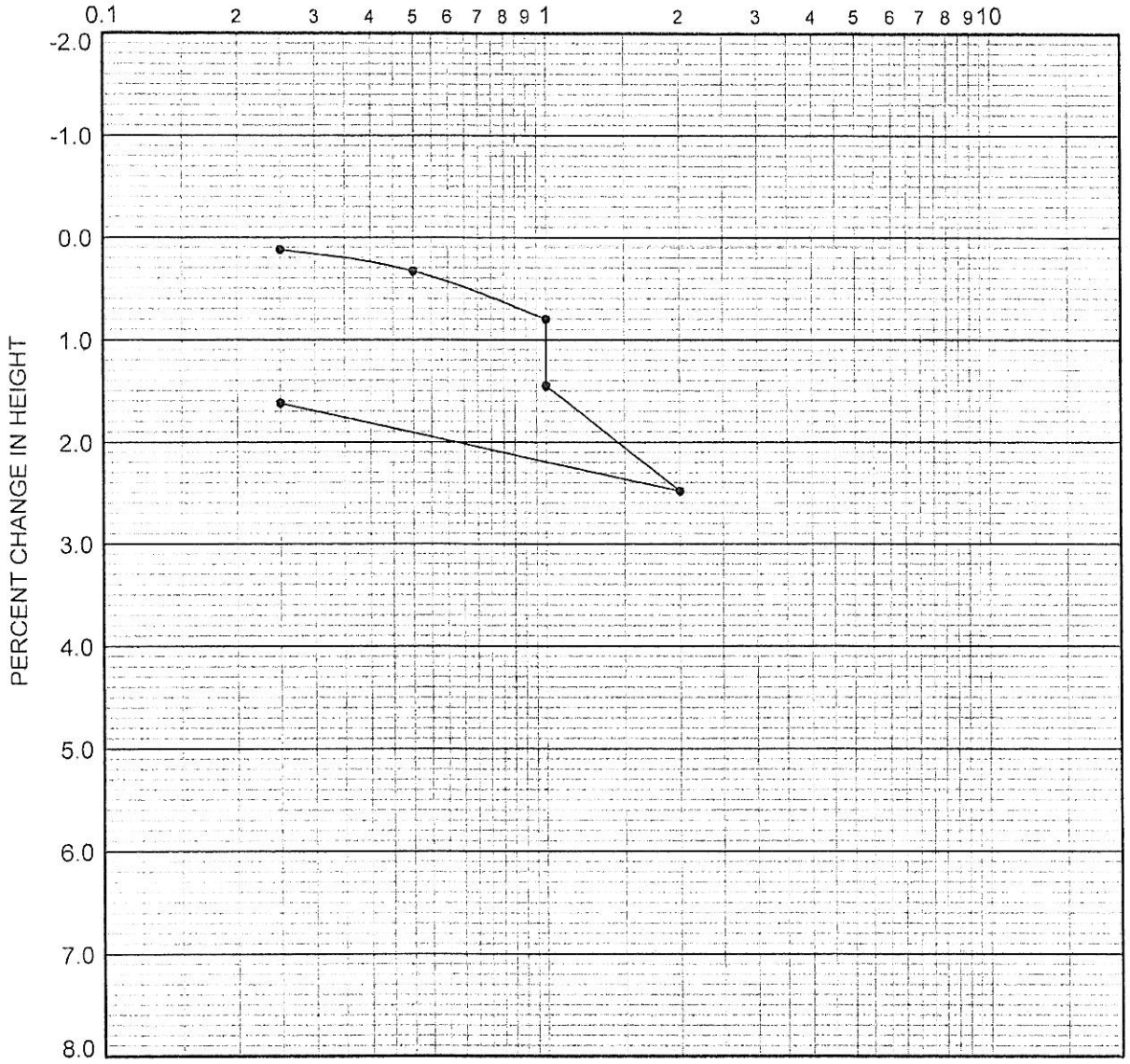
REMARKS: WATER ADDED AT 1.0 TSF

CONSOLIDATION CURVE

PACIFIC SOILS ENGINEERING, INC.

W.O. 700065-J PLATE C-62

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-096	5.0	103	3.9	17	29	SM	Silty Sand (Qal)

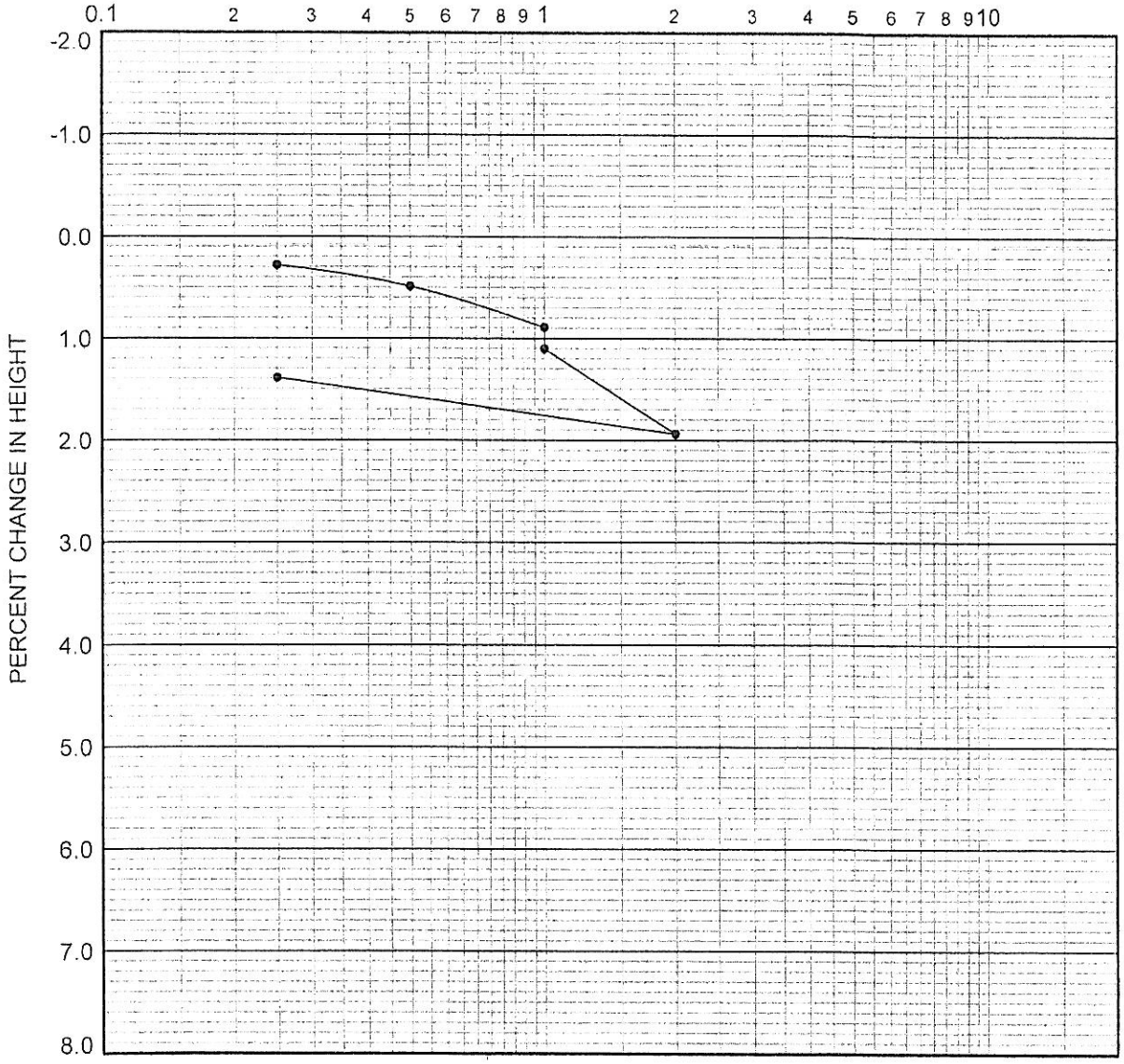
REMARKS: WATER ADDED AT 1.0 TSF

CONSOLIDATION CURVE

PACIFIC SOILS ENGINEERING, INC.

W.O. 700065-J PLATE C-63

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-096	11.0	112	14.4	79	40	SM	Silty Sand (Qal)

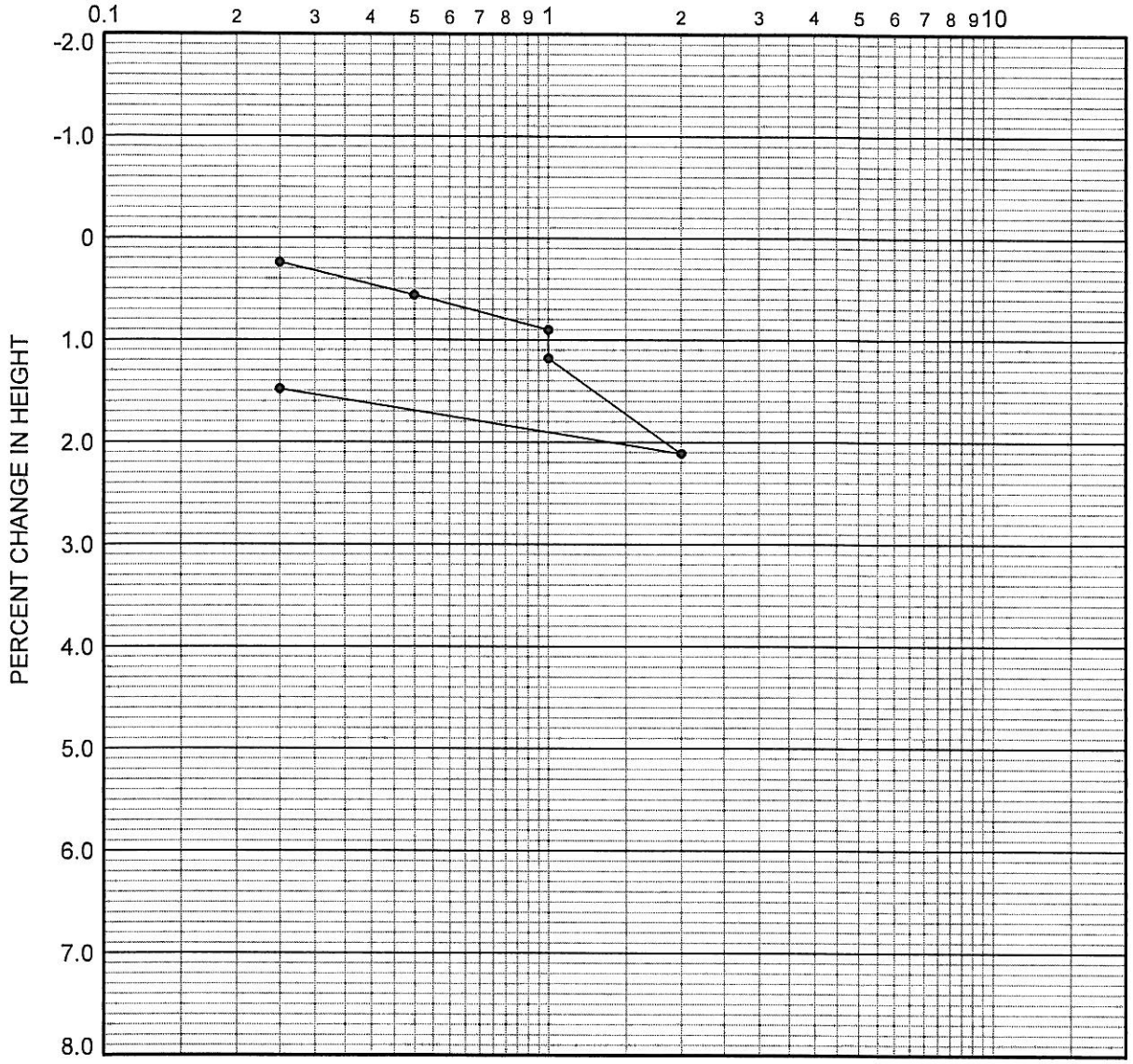
REMARKS: WATER ADDED AT 1.0 TSF

CONSOLIDATION CURVE

PACIFIC SOILS ENGINEERING, INC.

W.O. 700065-J PLATE C-64

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-105	20.0	115	10.0	61	36	SM	Silty Sand (Qal)

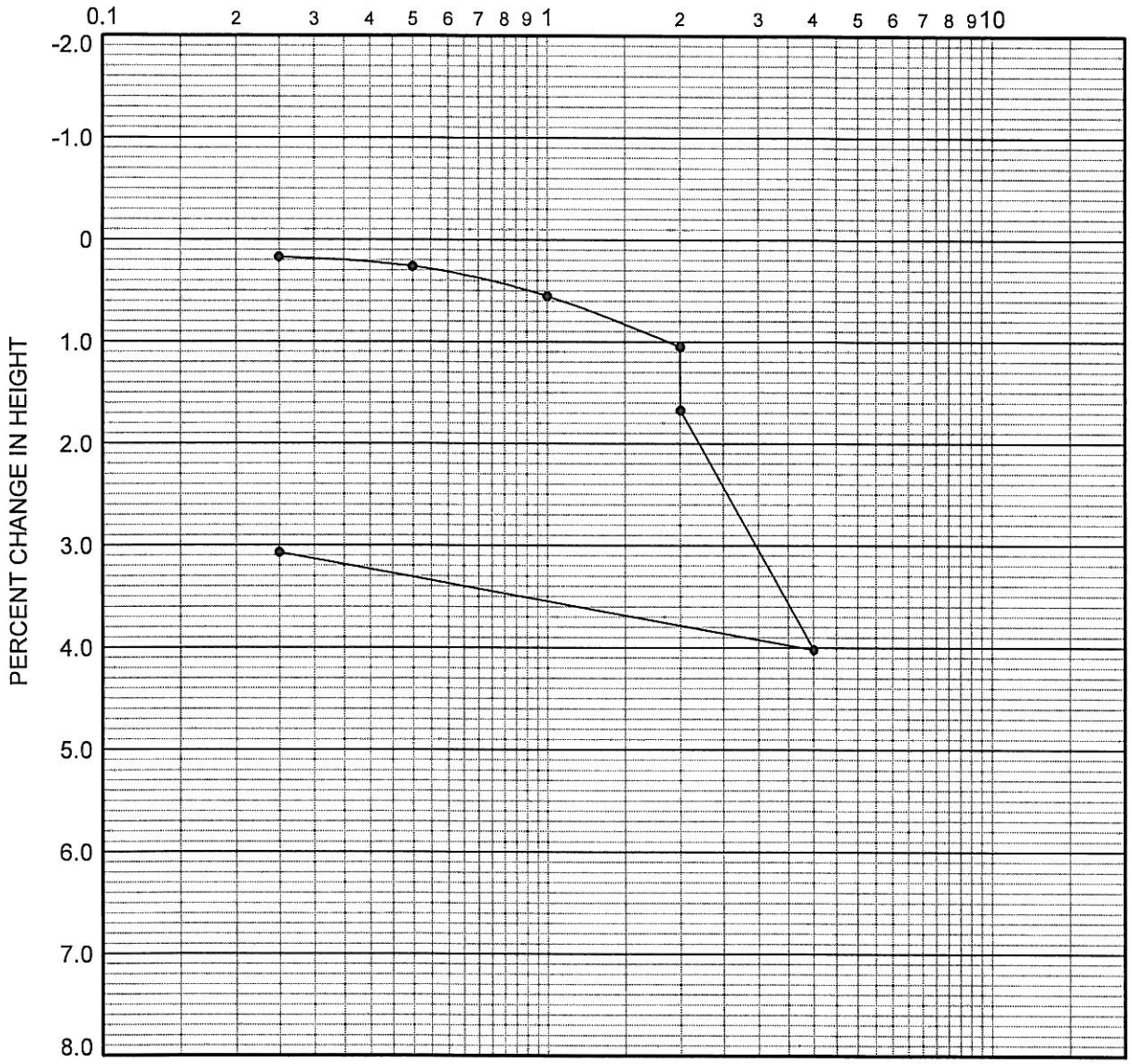
REMARKS: WATER ADDED AT 1 TSF

CONSOLIDATION CURVE

PACIFIC SOILS ENGINEERING, INC.

W.O. 700065-J PLATE C-76

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-112	10.0	113	10.7	62	41	SM	Silty Sand (Qal)

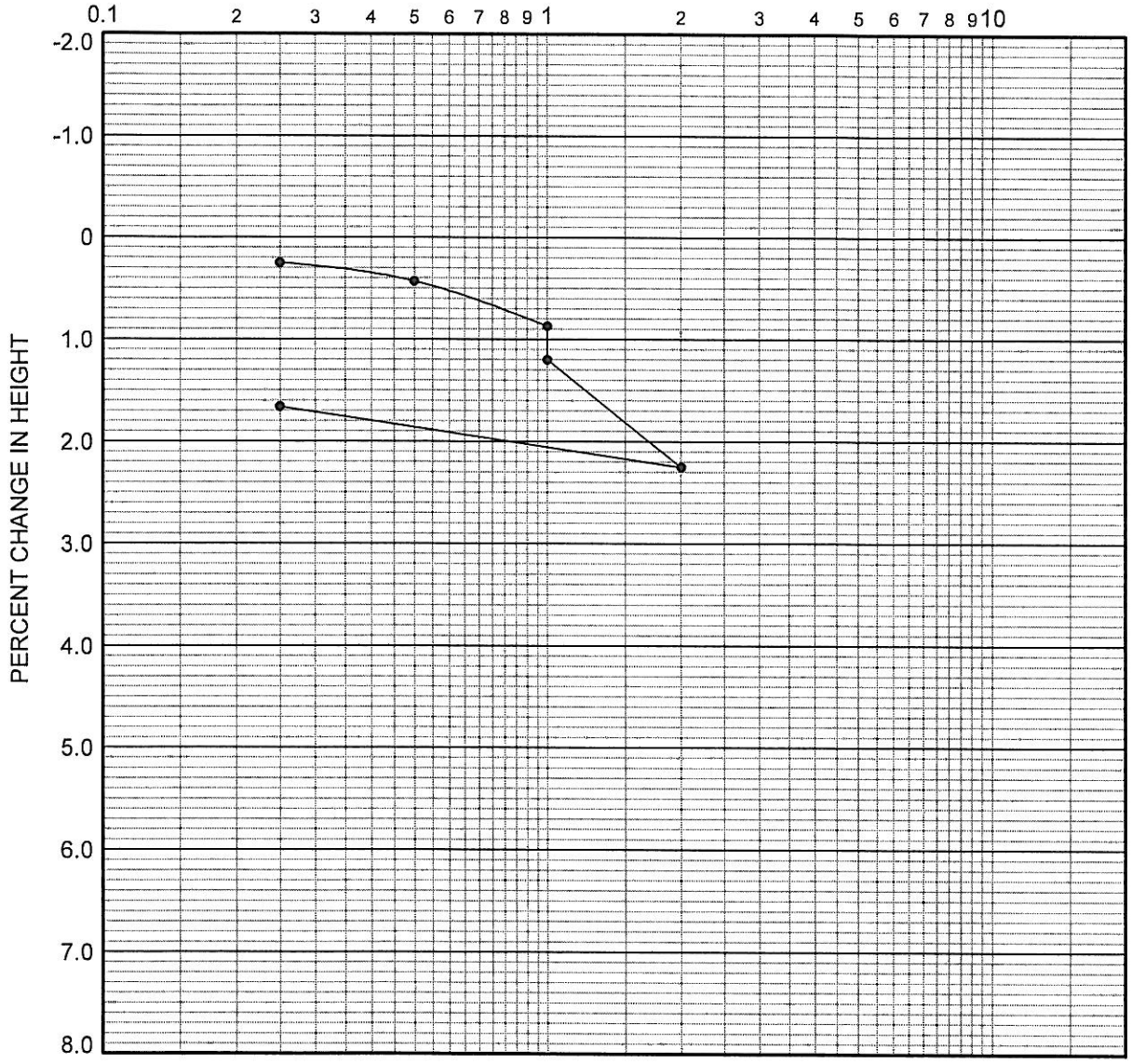
REMARKS: WATER ADDED AT 2 TSF

CONSOLIDATION CURVE

PACIFIC SOILS ENGINEERING, INC.

W.O. 700065-J PLATE C-93

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-112	15.0	119	15.5	95	51	ML	Sandy Silt (Qal)

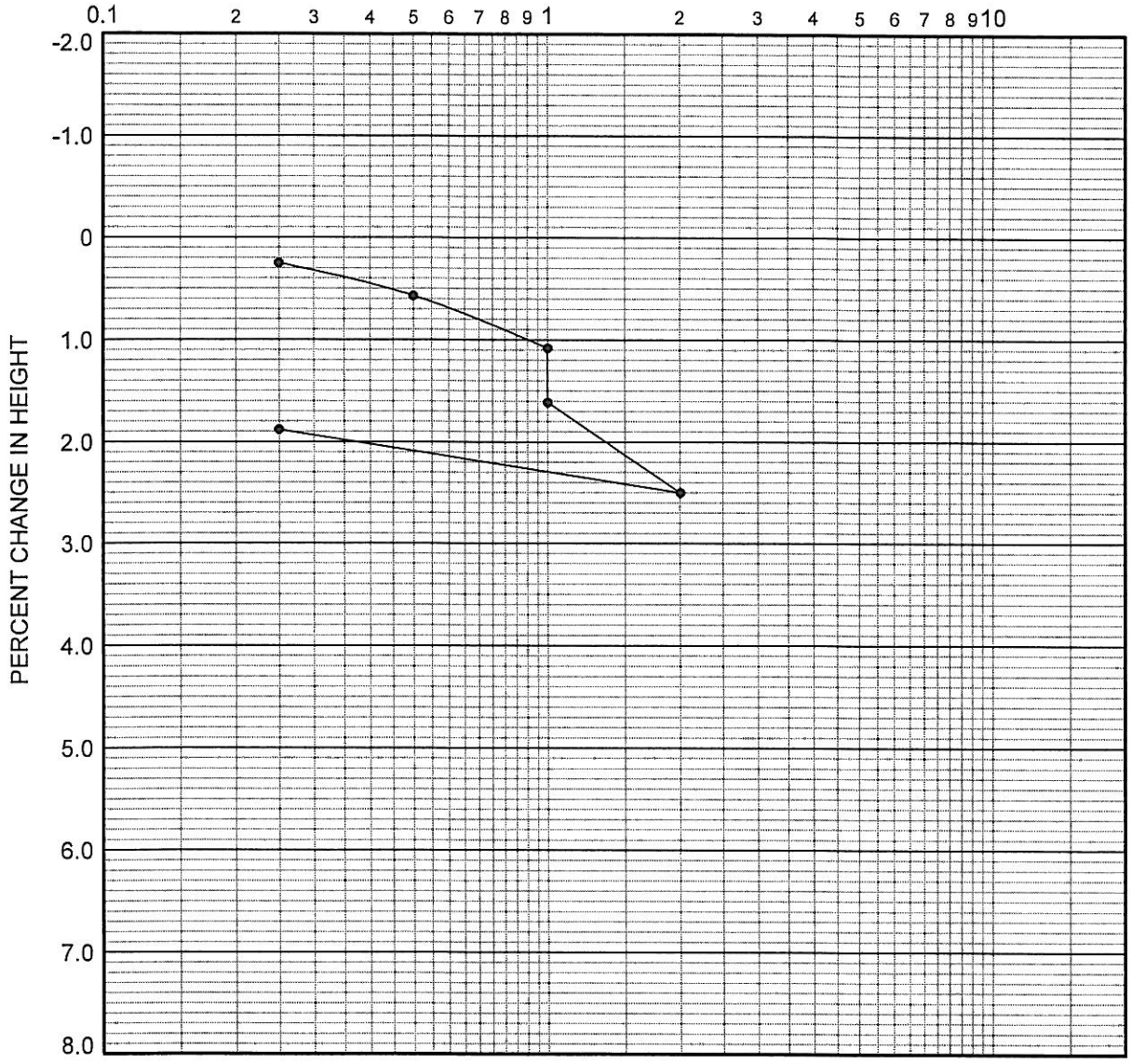
REMARKS: WATER ADDED AT 1 TSF

CONSOLIDATION CURVE

PACIFIC SOILS ENGINEERING, INC.

W.O. 700065-J PLATE C-94

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-112	22.0	122	9.3	70	29	SM	Silty Sand (Qia)

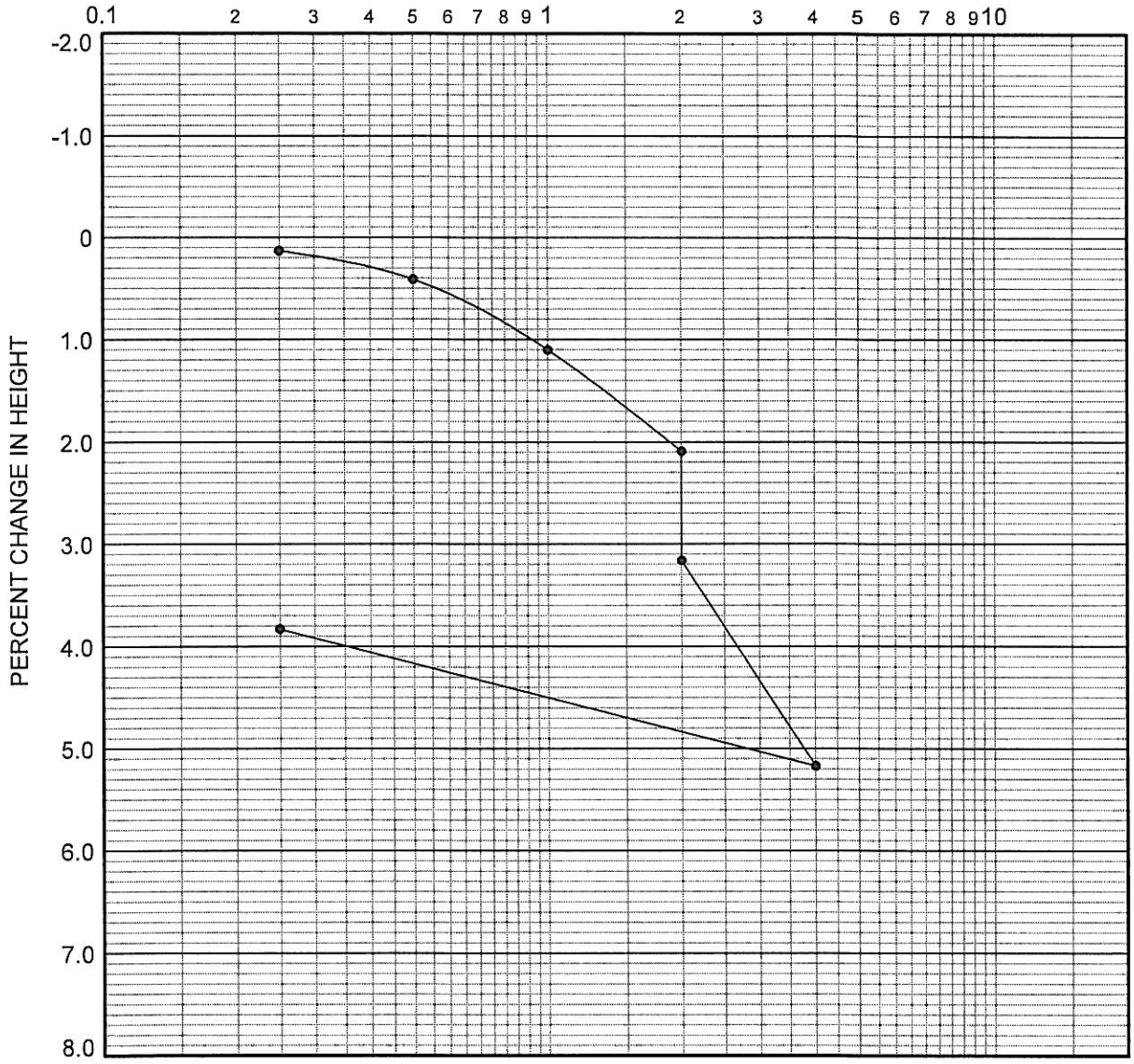
REMARKS: WATER ADDED AT 1 TSF

CONSOLIDATION CURVE

PACIFIC SOILS ENGINEERING, INC.

W.O. 700065-J PLATE C-95

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-112	25.0	109	13.4	69	46	SM	Silty Sand (Qia)

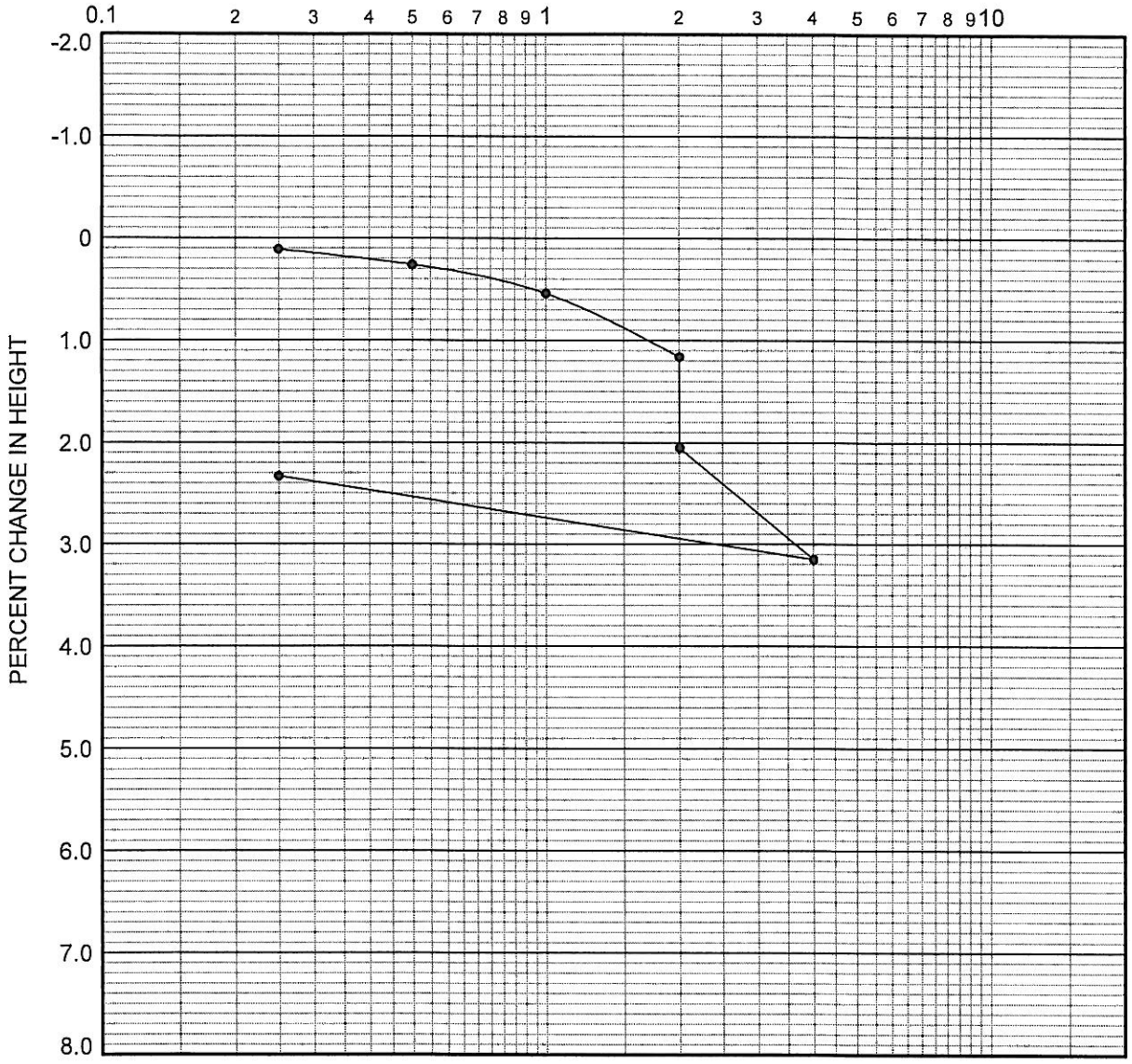
REMARKS: WATER ADDED AT 2 TSF

CONSOLIDATION CURVE

PACIFIC SOILS ENGINEERING, INC.

W.O. 700065-J PLATE C-96

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-112	30.0	122	7.2	53	24	SM	Silty Sand (Qia)

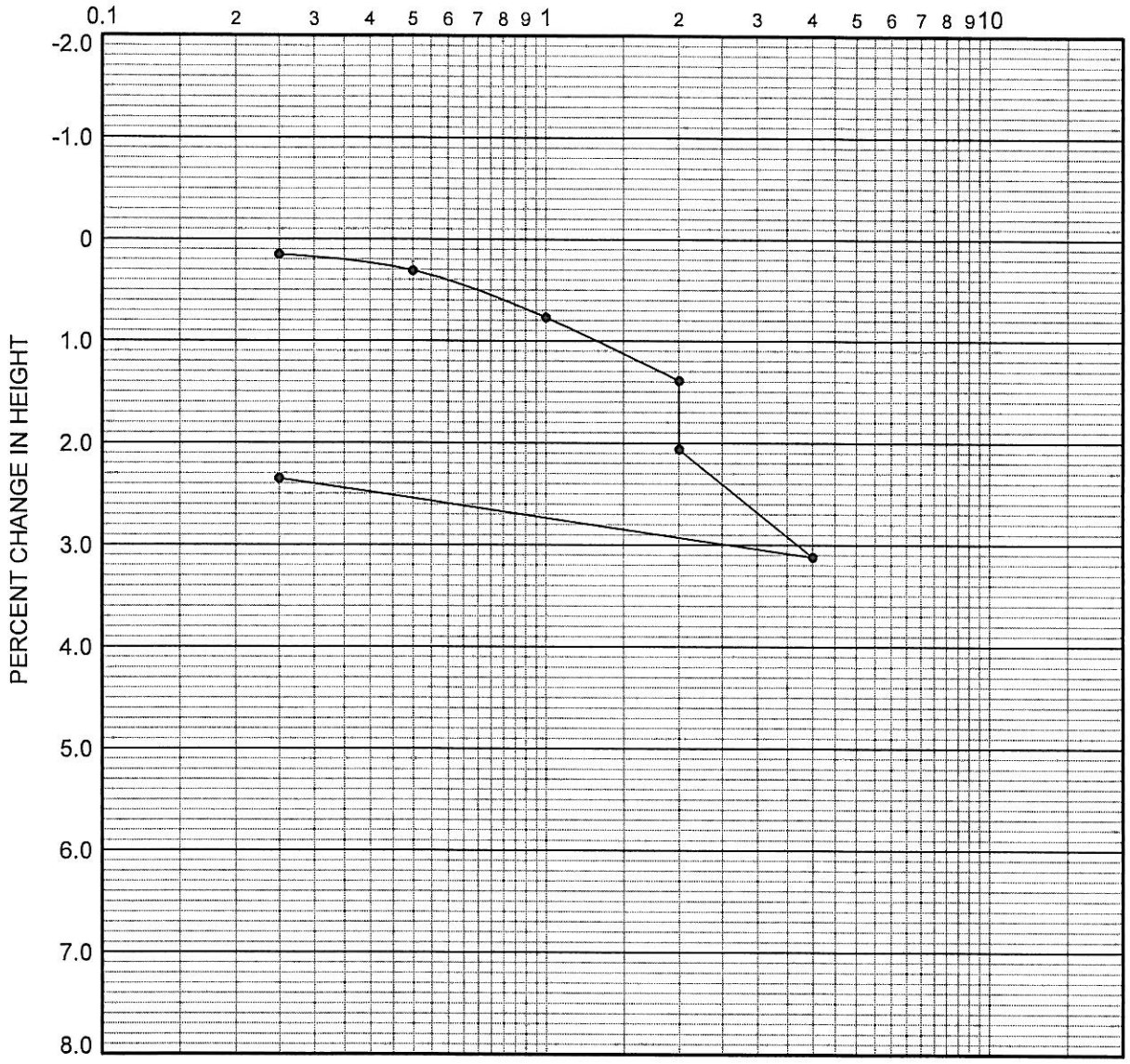
REMARKS: WATER ADDED AT 2 TSF

CONSOLIDATION CURVE

PACIFIC SOILS ENGINEERING, INC.

W.O. 700065-J PLATE C-97

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-112	35.0	120	12.5	89	43	SM	Silty Sand (Qia)

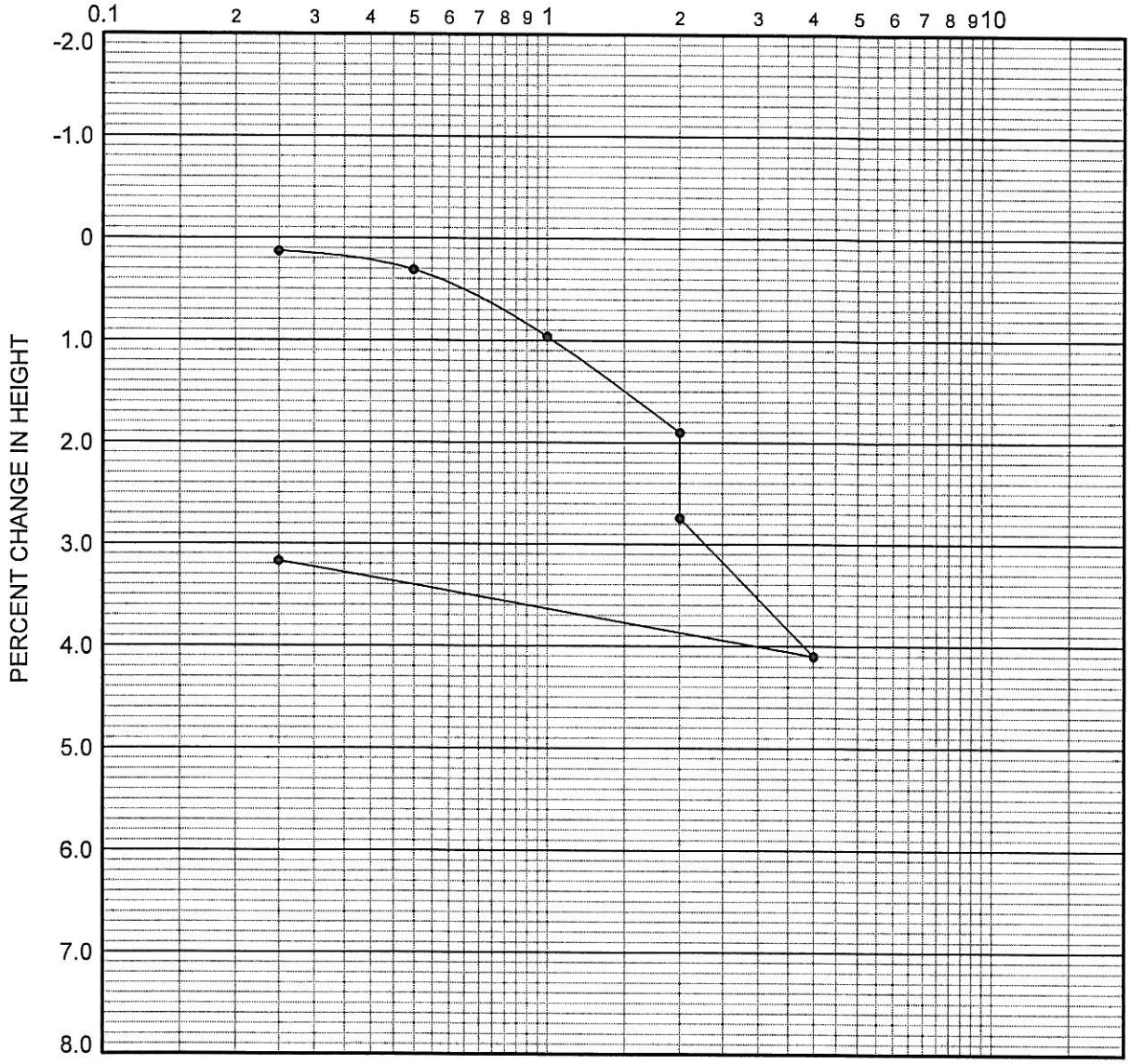
REMARKS: WATER ADDED AT 2 TSF

CONSOLIDATION CURVE

PACIFIC SOILS ENGINEERING, INC.

W.O. 700065-J PLATE C-98

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-112	50.0	111	9.8	53	26	SM	Silty Sand (Qoa)

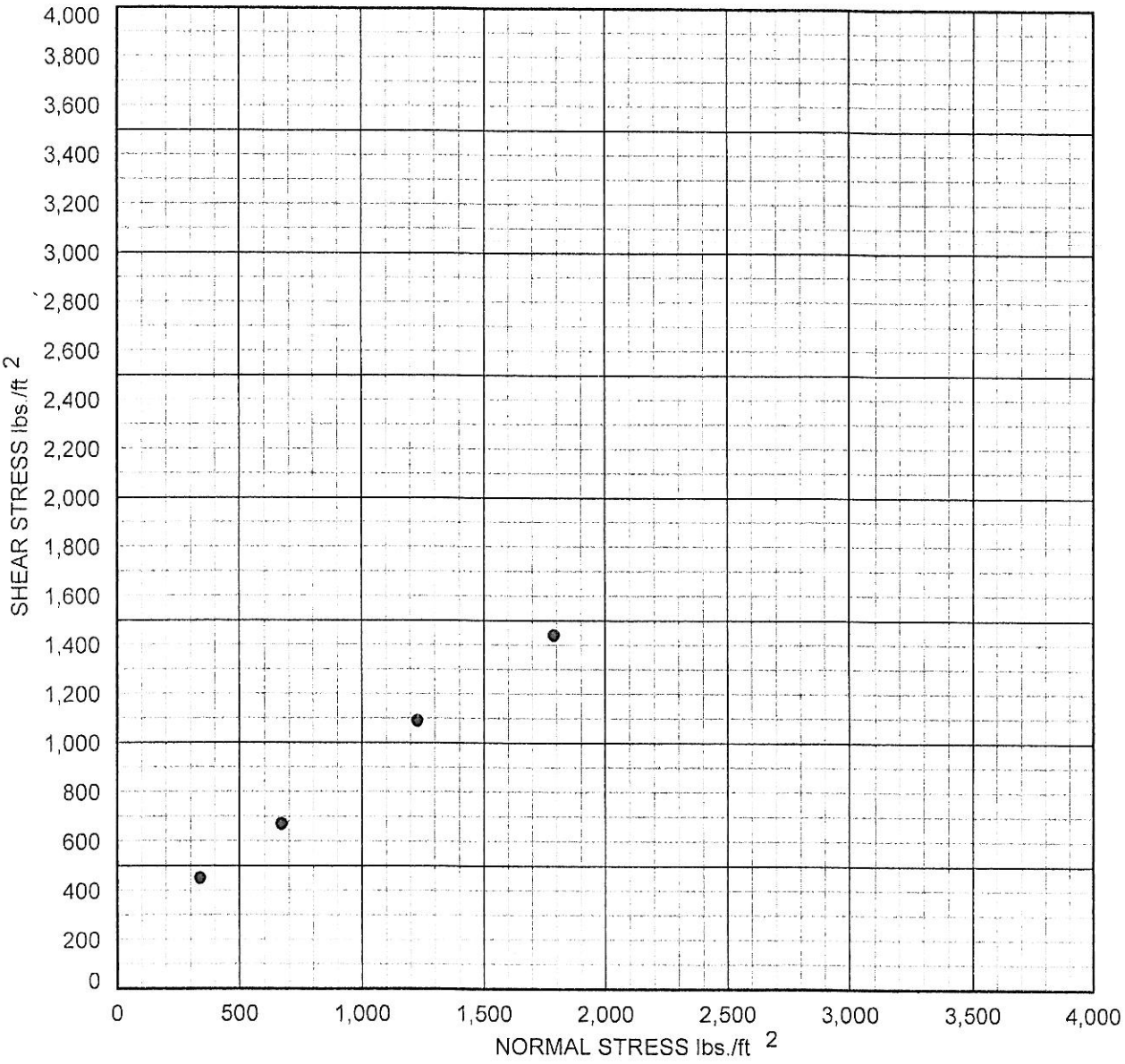
REMARKS: WATER ADDED AT 2 TSF

CONSOLIDATION CURVE

PACIFIC SOILS ENGINEERING, INC.

W.O. 700065-J PLATE C-99

DIRECT SHEAR TEST
Remolded at 90% Relative Compaction



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	-200 sieve (%)	group symbol	typical names
B-096	12.0			28	SM	Silty Sand (Qal)

COHESION	220	psf.
FRICTION ANGLE	35.0	degrees

DIRECT SHEAR TEST

PACIFIC SOILS ENGINEERING, INC.

W.O. 700065-J PLATE C-196

KYH Co. Analytical Laboratory

3621 W. MacArthur Blvd., #118, Santa Ana, CA 92704 Tel: (714) 549-5824 Fax: (714) 549-8375

ANALYTICAL REPORT

Client Name:	Pacific Soils Engineering, Inc.	Report Number:	246199R
Address:	710 E. Parkridge Avenue, Suite 105 Corona, CA 92879	PSE W.O. Number:	700065
Contact Person:	Mr. Duane Irwin	P.O. Number:	Verbal

Sample Results

Client ID	Lab ID	Date Requested	Analysis	Method	Result (% wt)	MDL (% wt)
~~B-98 (20)~~	~~20978~~	~~11-1-2004~~	~~Chloride Content~~	~~CalTrans 422~~	~~0.005~~	~~0.001~~
~~B-98 (20)~~	~~20978~~	~~11-1-2004~~	~~Sulfate Content~~	~~CalTrans 417~~	~~<0.001~~	~~0.001~~
~~B-98 (20)~~	~~20978~~	~~11-1-2004~~	~~Alkalinity~~	~~EPA 310.1~~	~~0.004~~	~~0.001~~
B-93 (6)	20979	11-1-2004	Chloride Content	CalTrans 422	0.002	0.001
B-93 (6)	20979	11-1-2004	Sulfate Content	CalTrans 417	<0.001	0.001
B-93 (6)	20979	11-1-2004	Alkalinity	EPA 310.1	0.002	0.001
~~B-97 (14)~~	~~20980~~	~~11-1-2004~~	~~Chloride Content~~	~~CalTrans 422~~	~~0.002~~	~~0.001~~
~~B-97 (14)~~	~~20980~~	~~11-1-2004~~	~~Sulfate Content~~	~~CalTrans 417~~	~~<0.001~~	~~0.001~~
~~B-97 (14)~~	~~20980~~	~~11-1-2004~~	~~Alkalinity~~	~~EPA 310.1~~	~~0.001~~	~~0.001~~
B-95 (11)	20981	11-1-2004	Chloride Content	CalTrans 422	0.001	0.001
B-95 (11)	20981	11-1-2004	Sulfate Content	CalTrans 417	<0.001	0.001
B-95 (11)	20981	11-1-2004	Alkalinity	EPA 310.1	0.007	0.001

Authorized Signature

November 3, 2004
Report Date

KYH Co. Analytical Laboratory

3621 W. MacArthur Blvd., #118, Santa Ana, CA 92704 Tel: (714) 549-5824 Fax: (714) 549-8375

ANALYTICAL REPORT

Client Name:	Pacific Soils Engineering, Inc.	Report Number:	246148R
Address:	710 E. Parkridge Avenue, Suite 105 Corona, CA 92879	PSE W.O. Number:	700065
Contact Person:	Mr. Duane Irwin	P.O. Number:	Verbal

Sample Results

Client ID	Lab ID	Date Requested	Analysis	Method	Result (% wt)	MDL (% wt)
~~B-94 (9)~~	~~20855~~	~~10-5-2004~~	~~Chloride Content~~	~~CalTrans 422~~	~~0.002~~	~~0.001~~
~~B-94 (9)~~	~~20855~~	~~10-5-2004~~	~~Sulfate Content~~	~~CalTrans 417~~	~~<0.001~~	~~0.001~~
~~B-94 (9)~~	~~20855~~	~~10-5-2004~~	~~Alkalinity~~	~~EPA 310.1~~	~~0.005~~	~~0.001~~
B-96 (12)	20856	10-5-2004	Chloride Content	CalTrans 422	0.001	0.001
B-96 (12)	20856	10-5-2004	Sulfate Content	CalTrans 417	<0.001	0.001
B-96 (12)	20856	10-5-2004	Alkalinity	EPA 310.1	0.006	0.001
~~B-52 (6)~~	~~20857~~	~~10-4-2004~~	~~Chloride Content~~	~~CalTrans 422~~	~~0.001~~	~~0.001~~
~~B-52 (6)~~	~~20857~~	~~10-4-2004~~	~~Sulfate Content~~	~~CalTrans 417~~	~~<0.001~~	~~0.001~~
~~B-52 (6)~~	~~20857~~	~~10-4-2004~~	~~Alkalinity~~	~~EPA 310.1~~	~~0.002~~	~~0.001~~

Authorized Signature

October 11, 2004
Report Date

PLATE C-250

APPENDIX C-2

Laboratory Testing

AGS, 2020

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

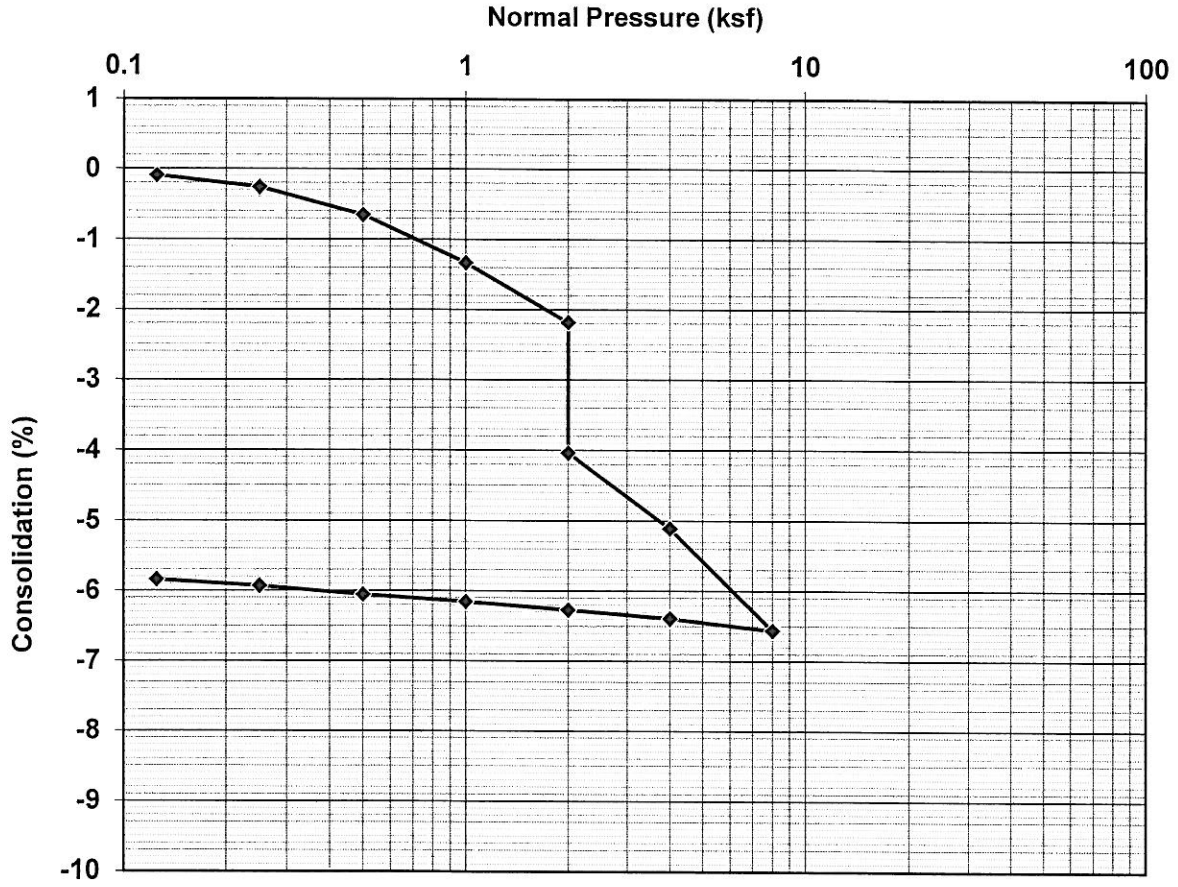
CONSOLIDATION - ASTM D2435

AGS Form E-3

Project Name: Oak Valley Town Center
Location: Calimesa
Project No: 2004-01
Date: 9/1/2020

Excavation: AGS-1
Depth: 10 ft
Description: Qoa- Silty Sand
By: FV

Consolidation-Pressure Curve



Test Description:

	Before Test	After Test
Water Content, w	2.9%	15.3%
Void Ratio, e	0.57	0.48
Saturation, S	14%	86%
Dry Density (pcf)	107.4	114.1
Wet Density (pcf)	110.5	131.5

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

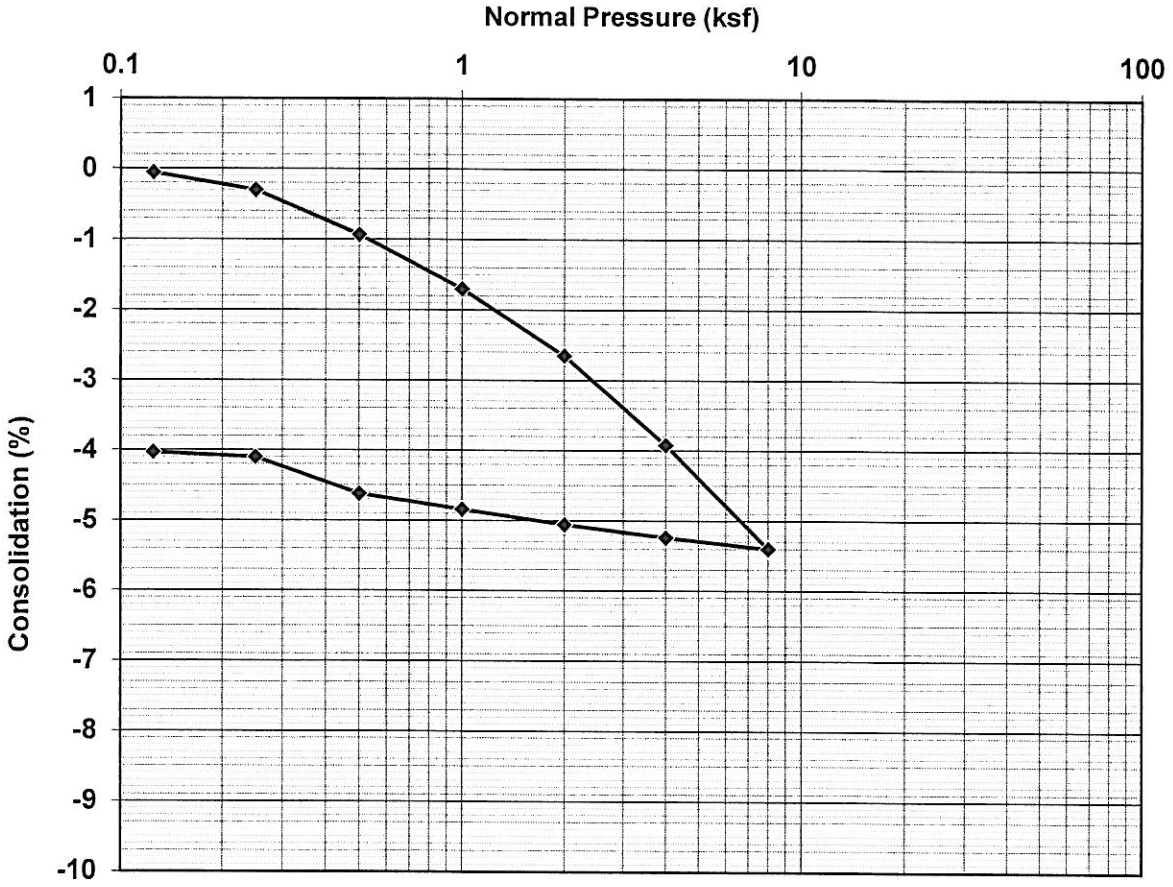
CONSOLIDATION - ASTM D2435

AGS Form E-3

Project Name: Oak Valley Town Center
Location: Calimesa, CA
Project No: 2001-04
Date: 8/17/2020

Excavation: AGS 3
Depth: 15 ft
Description: Qal- Sandy Silt with Clay
By: FV

Consolidation-Pressure Curve



Test Description:

	Before Test	After Test
Water Content, w	16.9%	22.2%
Void Ratio, e	0.64	0.57
Saturation, S	72%	105%
Dry Density (pcf)	102.8	107.1
Wet Density (pcf)	120.2	131.0

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

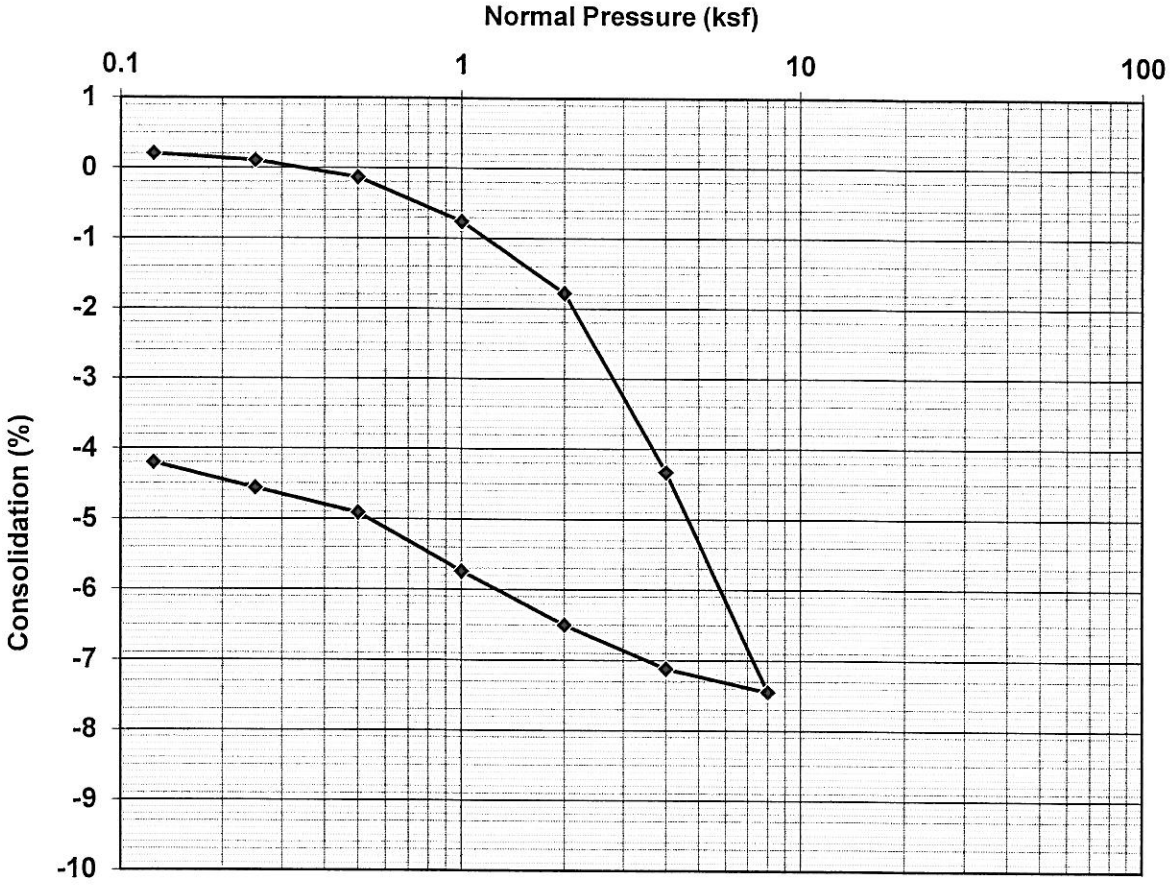
CONSOLIDATION - ASTM D2435

AGS Form E-3

Project Name: Oak Valley Town Center
Location: Calimesa, CA
Project No: 2001-04
Date: 8/17/2020

Excavation: AGS 3
Depth: 25 ft
Description: Qal- Clay
By: FV

Consolidation-Pressure Curve



Test Description:

	Before Test	After Test
Water Content, w	25.6%	27.4%
Void Ratio, e	0.82	0.74
Saturation, S	85%	100%
Dry Density (pcf)	92.7	96.8
Wet Density (pcf)	116.5	123.2

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

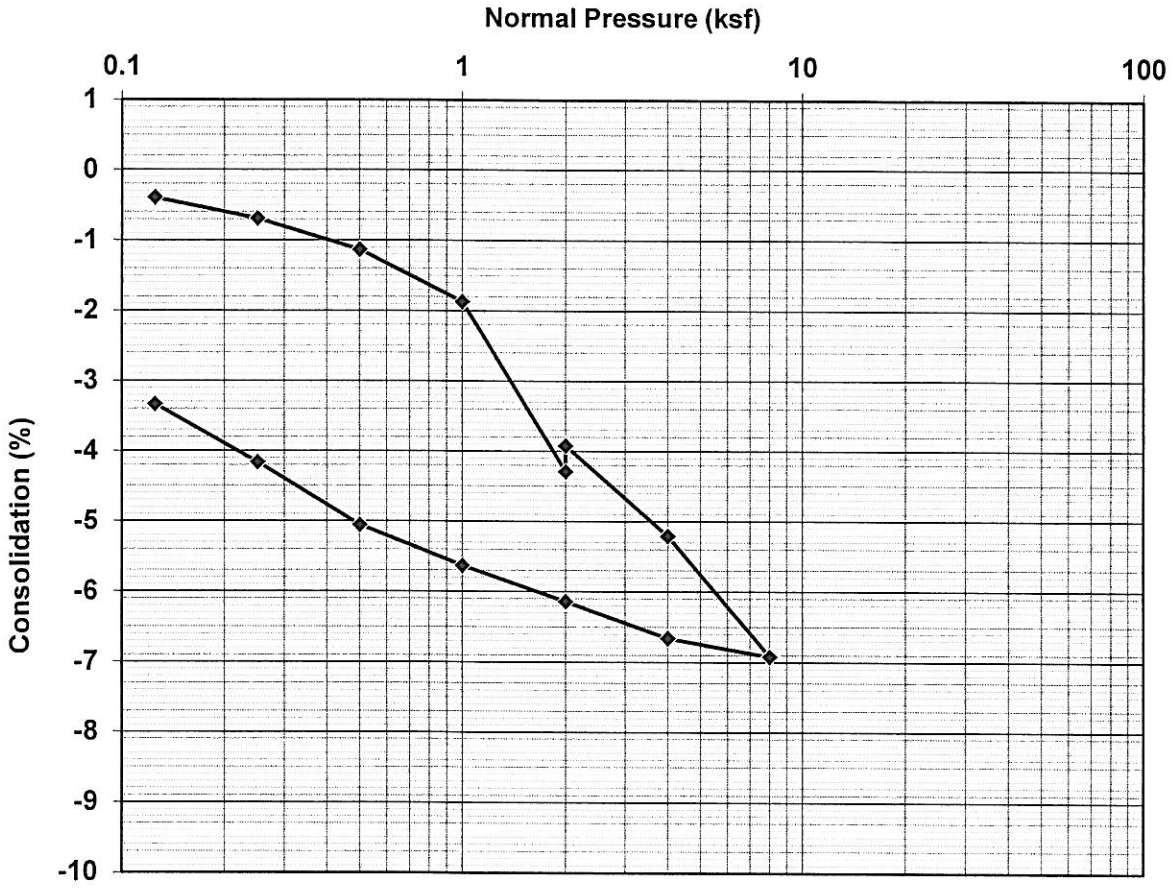
CONSOLIDATION - ASTM D2435

AGS Form E-3

Project Name: Oak Valley Town Center
Location: Calimesa
Project No: 2004-01
Date: 9/1/2020

Excavation: AGS-4
Depth: 5 ft
Description: Qal- Sandy Silt
By: FV

Consolidation-Pressure Curve



Test Description:

	Before Test	After Test
Water Content, w	19.4%	34.5%
Void Ratio, e	0.91	0.84
Saturation, S	58%	111%
Dry Density (pcf)	88.4	91.5
Wet Density (pcf)	105.5	123.0

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

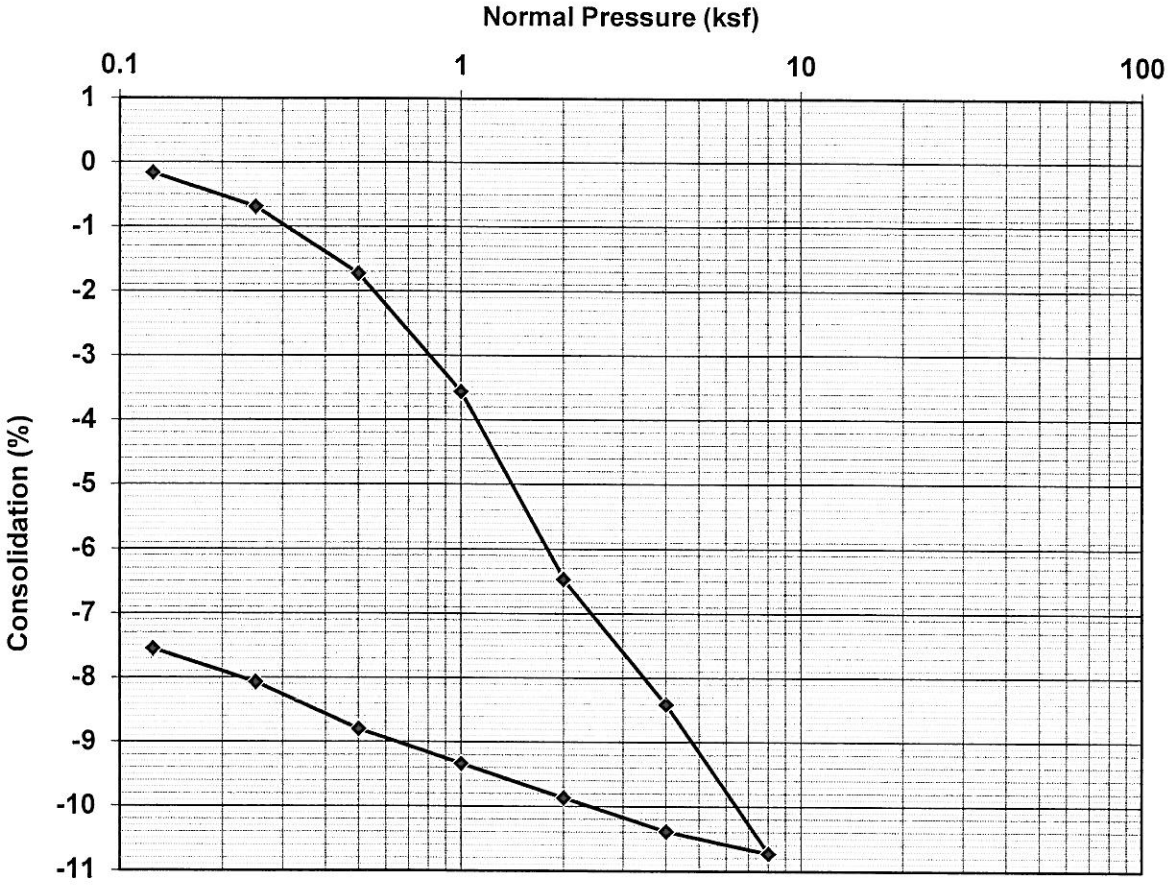
CONSOLIDATION - ASTM D2435

AGS Form E-3

Project Name: Oak Valley Town Center
Location: Calimesa
Project No: 2004-01
Date: 9/1/2020

Excavation: AGS-4
Depth: 15 ft
Description: Qal- Sandy Silt with Peat
By: FV

Consolidation-Pressure Curve



Test Description:

	Before Test	After Test
Water Content, w	18.3%	34.0%
Void Ratio, e	0.81	0.67
Saturation, S	61%	137%
Dry Density (pcf)	93.3	100.9
Wet Density (pcf)	110.4	135.3

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

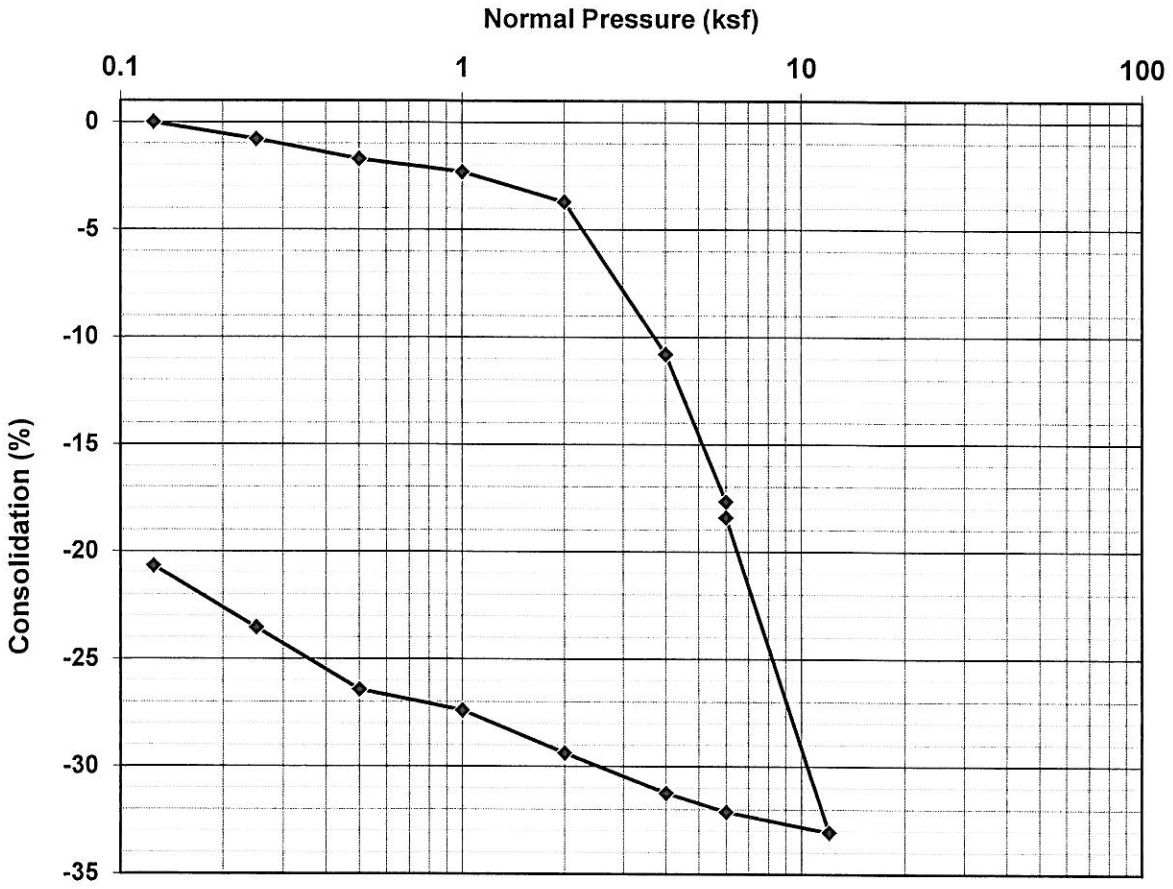
CONSOLIDATION - ASTM D2435

AGS Form E-3

Project Name: Oak Valley Town Center
Location: Calimesa
Project No: 2004-01
Date: 9/10/2011

Excavation: AGS-4
Depth: 25 ft
Description: Qal- Black Peat
By: FV

Consolidation-Pressure Curve



Test Description:

	Before Test	After Test
Water Content, w		143.9%
Void Ratio, e		
Saturation, S		
Dry Density (pcf)		33.1
Wet Density (pcf)	75.6	80.7

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

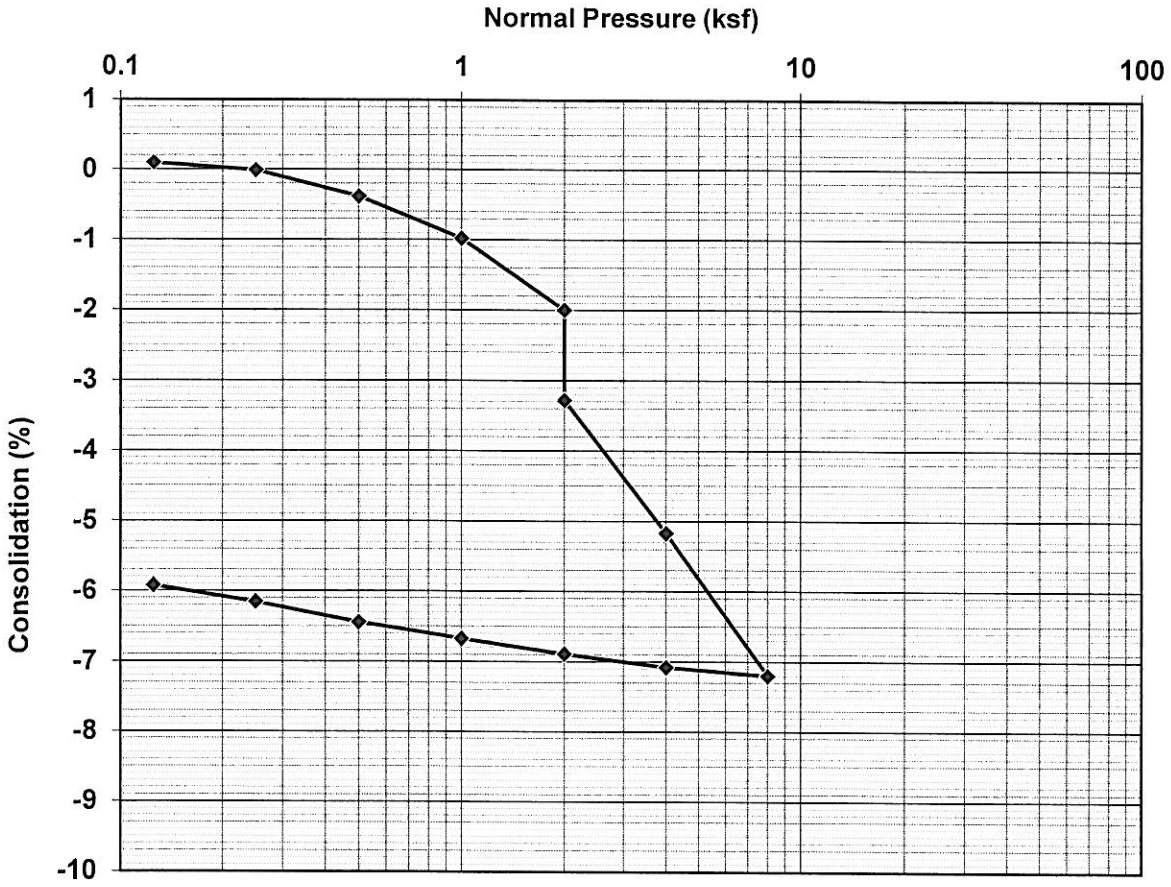
CONSOLIDATION - ASTM D2435

AGS Form E-3

Project Name: Oak Valley Town Center
Location: Calimesa
Project No: 2004-01
Date: 9/1/2020

Excavation: AGS-5
Depth: 5 ft
Description: Qoa- Silty Sand
By: FV

Consolidation-Pressure Curve



Test Description:

	Before Test	After Test
Water Content, w	5.1%	15.0%
Void Ratio, e	0.53	0.43
Saturation, S	26%	93%
Dry Density (pcf)	110.5	117.4
Wet Density (pcf)	116.1	135.0

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

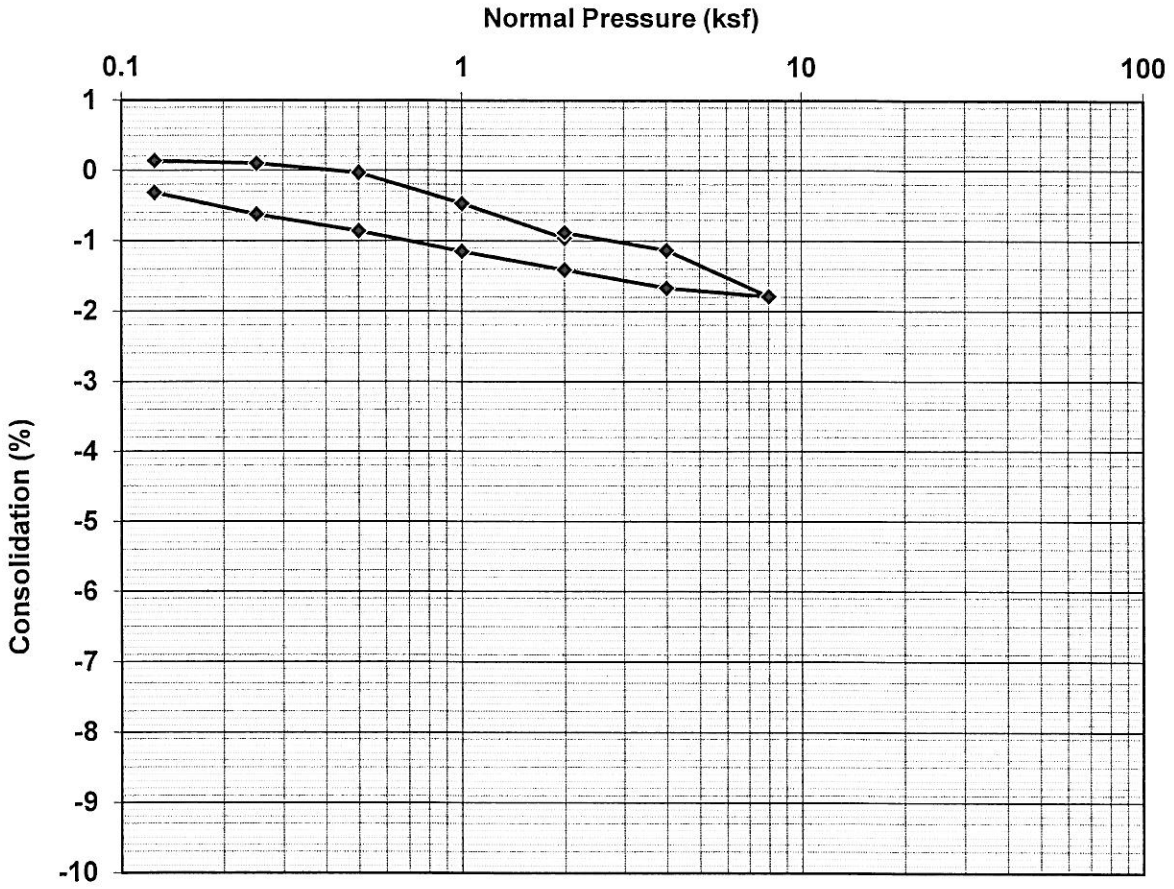
CONSOLIDATION - ASTM D2435

AGS Form E-3

Project Name: Oak Valley Town Center
Location: Calimesa
Project No: 2004-01
Date: 9/10/2020

Excavation: AGS-8
Depth: 15 ft
Description: Qoa- Silty Sand
By: FV

Consolidation-Pressure Curve



Test Description:

	Before Test	After Test
Water Content, w	11.4%	17.0%
Void Ratio, e	0.46	0.46
Saturation, S	66%	100%
Dry Density (pcf)	115.1	115.5
Wet Density (pcf)	128.3	135.1

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

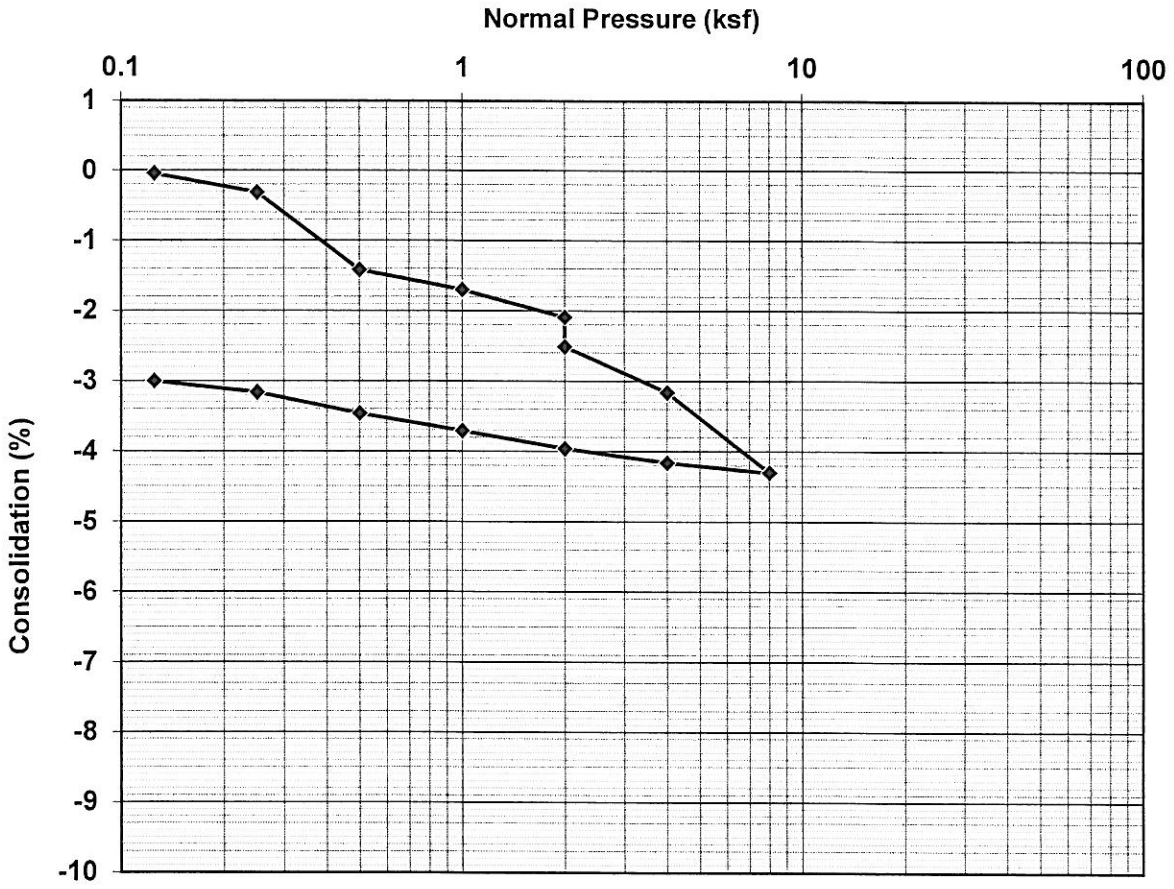
CONSOLIDATION - ASTM D2435

AGS Form E-3

Project Name: Oak Valley Town Center
Location: Calimesa
Project No: 2004-01
Date: 9/17/2020

Excavation: AGS-9
Depth: 20 ft
Description: Qoa- Silty Sand/Sandy Silt
By: FV

Consolidation-Pressure Curve



Test Description:

	Before Test	After Test
Water Content, w	8.5%	16.5%
Void Ratio, e	0.37	0.33
Saturation, S	62%	135%
Dry Density (pcf)	122.9	126.7
Wet Density (pcf)	133.4	147.6

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

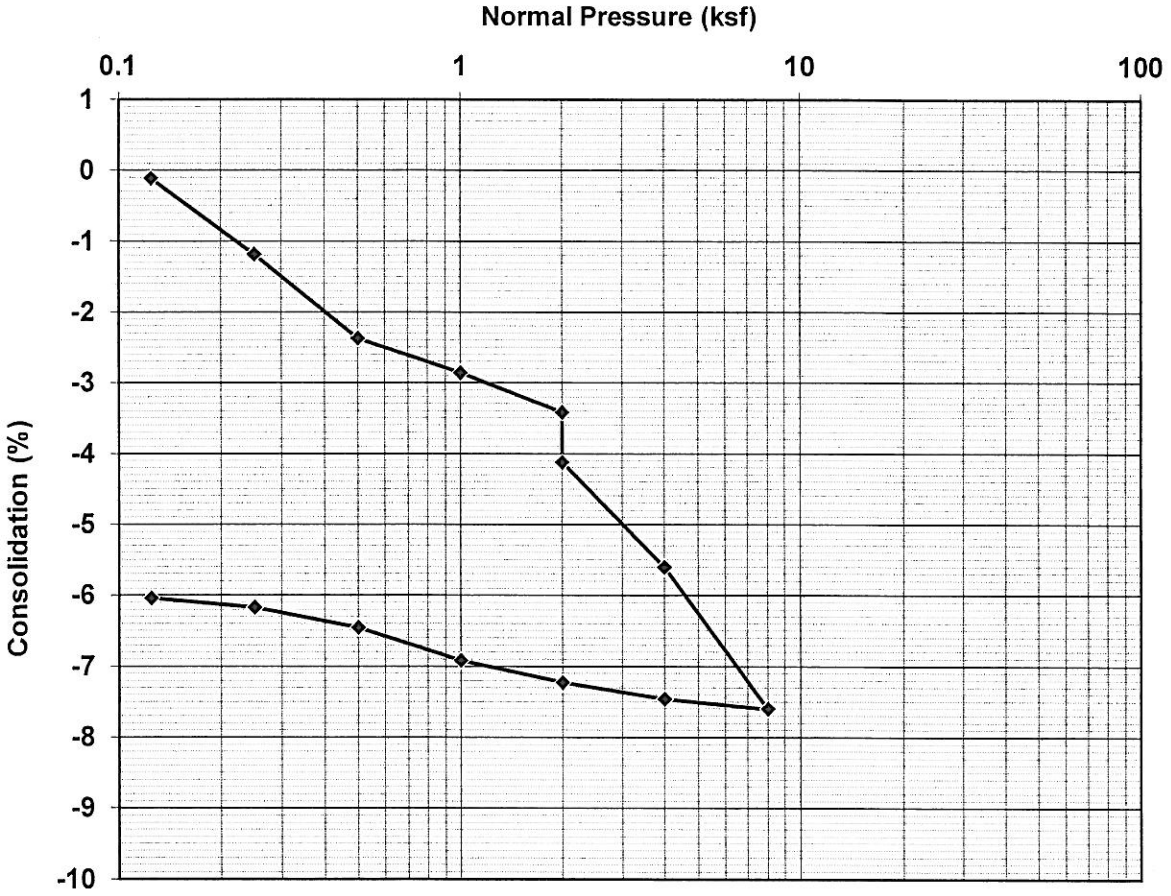
CONSOLIDATION - ASTM D2435

AGS Form E-3

Project Name: Oak Valley Town Center
Location: Calimesa
Project No: 2004-01
Date: 9/17/2020

Excavation: AGS-10
Depth: 10 ft
Description: Qoa- Silty Sand
By: FV

Consolidation-Pressure Curve



Test Description:

	Before Test	After Test
Water Content, w	2.0%	15.9%
Void Ratio, e	0.40	0.31
Saturation, S	14%	138%
Dry Density (pcf)	120.7	128.5
Wet Density (pcf)	123.2	149.0

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

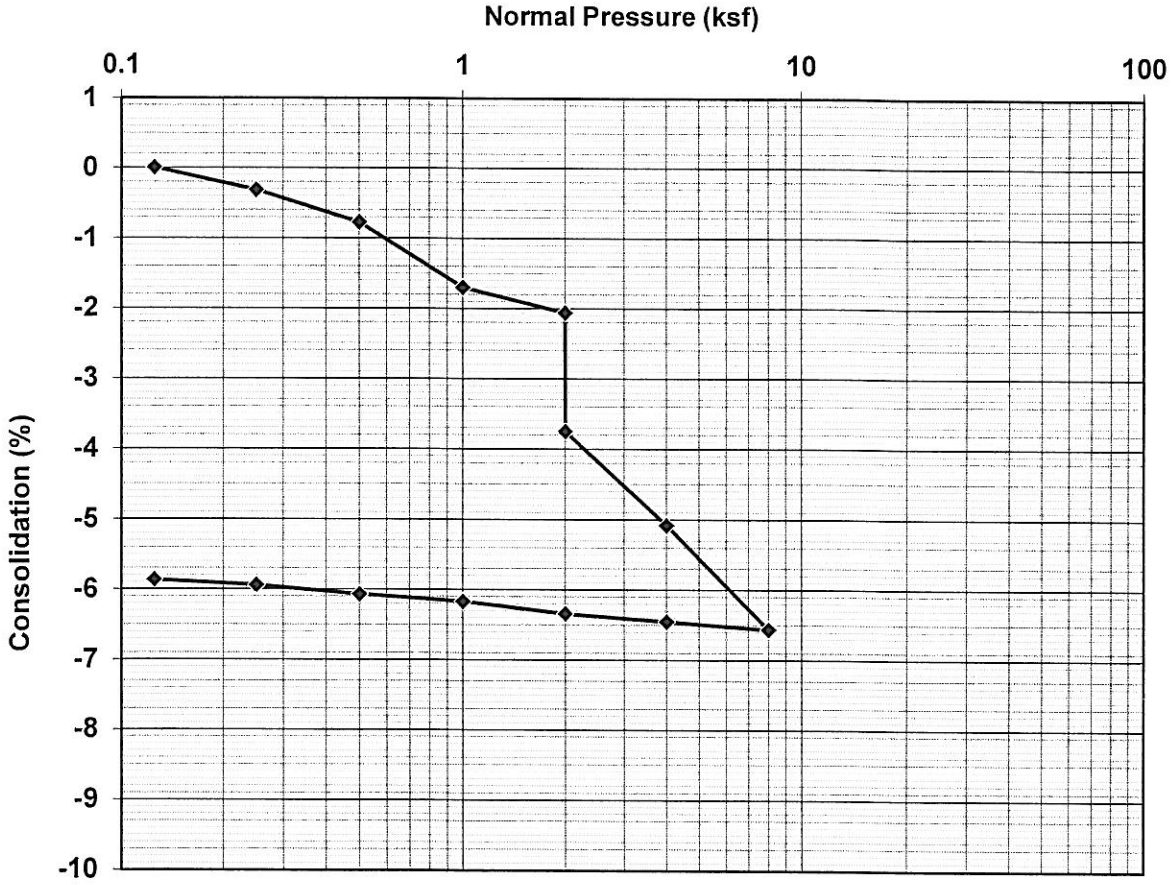
CONSOLIDATION - ASTM D2435

AGS Form E-3

Project Name: Oak Valley Town Center
Location: Calimesa
Project No: 2004-01
Date: 9/17/2020

Excavation: AGS-13
Depth: 10 ft
Description: Qal- Sand
By: FV

Consolidation-Pressure Curve



Test Description:

	Before Test	After Test
Water Content, w	2.4%	13.0%
Void Ratio, e	0.48	0.39
Saturation, S	13%	89%
Dry Density (pcf)	113.9	121.0
Wet Density (pcf)	116.6	136.7

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

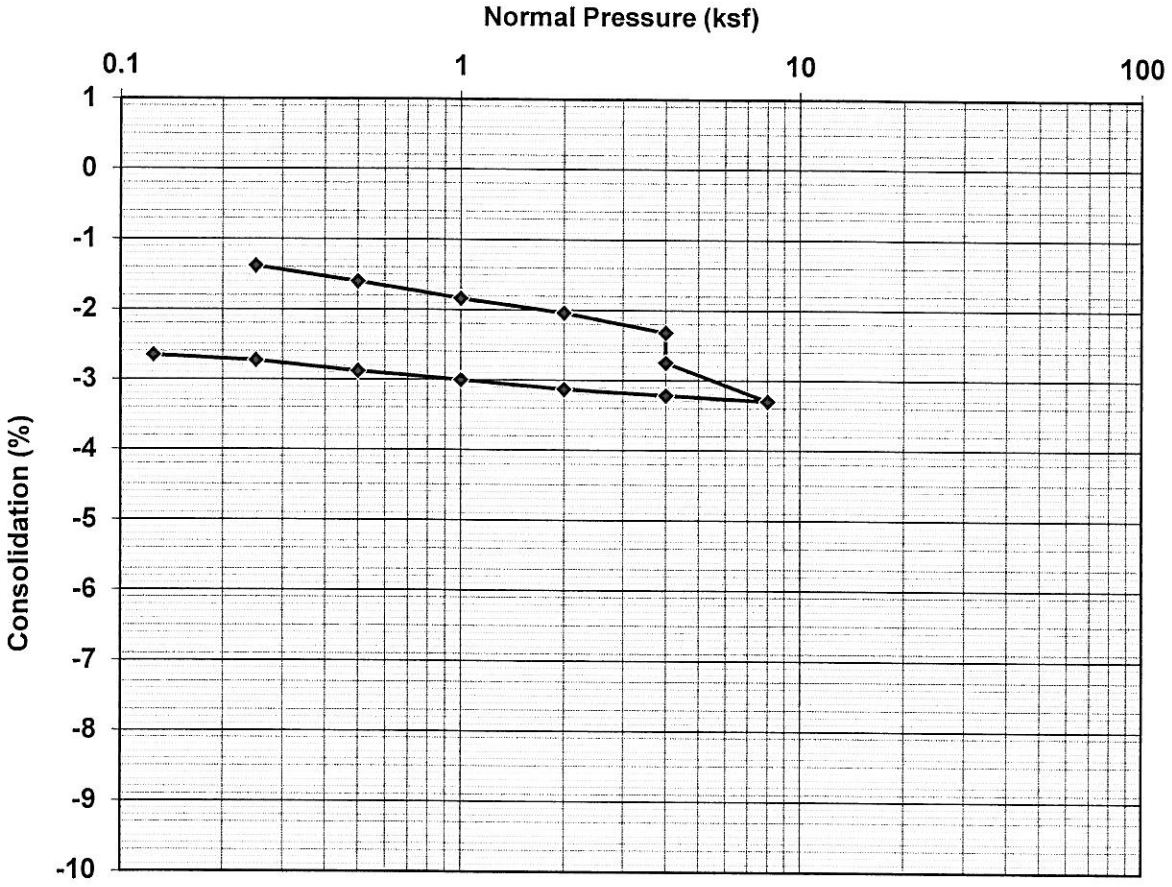
CONSOLIDATION - ASTM D2435

AGS Form E-3

Project Name: Oak Valley Town Center
Location: Calimesa
Project No: 2004-01
Date: 9/17/2020

Excavation: AGS-13
Depth: 20 ft
Description: Qoa- Silty Sand
By: FV

Consolidation-Pressure Curve



Test Description:

	Before Test	After Test
Water Content, w	9.0%	12.0%
Void Ratio, e	0.34	0.31
Saturation, S	71%	106%
Dry Density (pcf)	125.6	129.0
Wet Density (pcf)	136.9	144.5

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

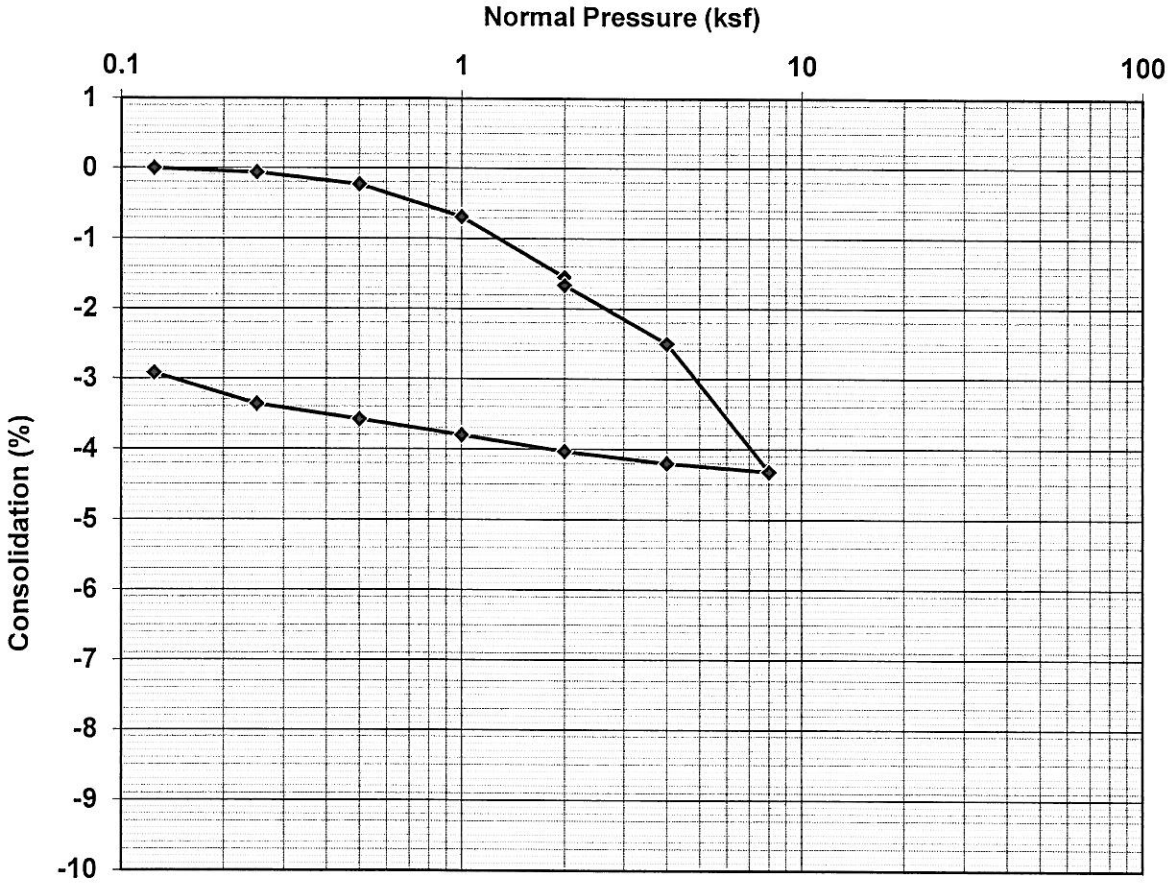
CONSOLIDATION - ASTM D2435

AGS Form E-3

Project Name: Oak Valley Town Center
Location: Calimesa
Project No: 2004-01
Date: 9/22/2020

Excavation: AGS -14
Depth: 20 ft
Description: Qoa- Silty Sand
By: FV

Consolidation-Pressure Curve



Test Description:

	Before Test	After Test
Water Content, w	5.1%	14.9%
Void Ratio, e	0.40	0.36
Saturation, S	34%	111%
Dry Density (pcf)	120.0	123.6
Wet Density (pcf)	126.1	142.0

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

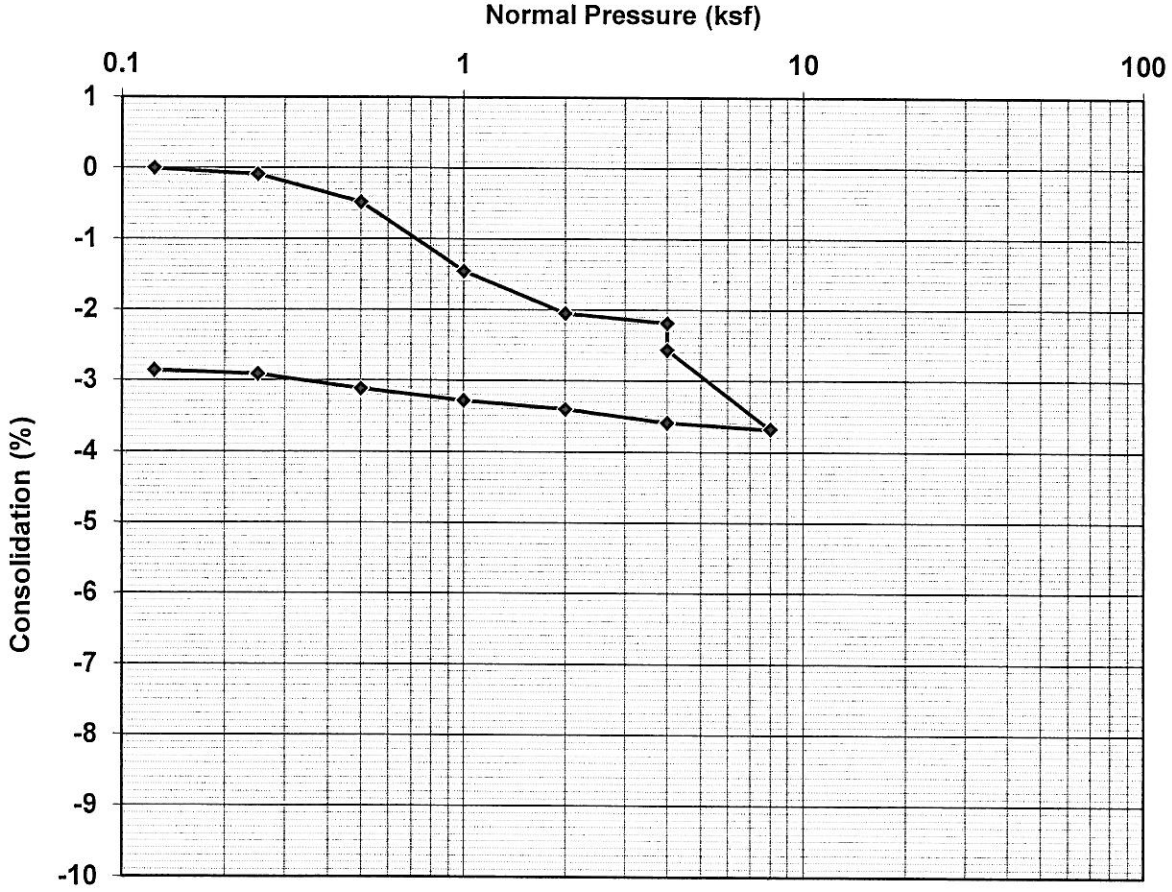
CONSOLIDATION - ASTM D2435

AGS Form E-3

Project Name: Oak Valley Town Center
Location: Calimesa
Project No: 2004-01
Date: 9/29/2020

Excavation: AGS-15
Depth: 25 ft
Description: Qal- Silty to Clayey Sand
By: FV

Consolidation-Pressure Curve



Test Description:

	Before Test	After Test
Water Content, w	9.8%	12.5%
Void Ratio, e	0.36	0.32
Saturation, S	74%	106%
Dry Density (pcf)	124.1	127.8
Wet Density (pcf)	136.3	143.8

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

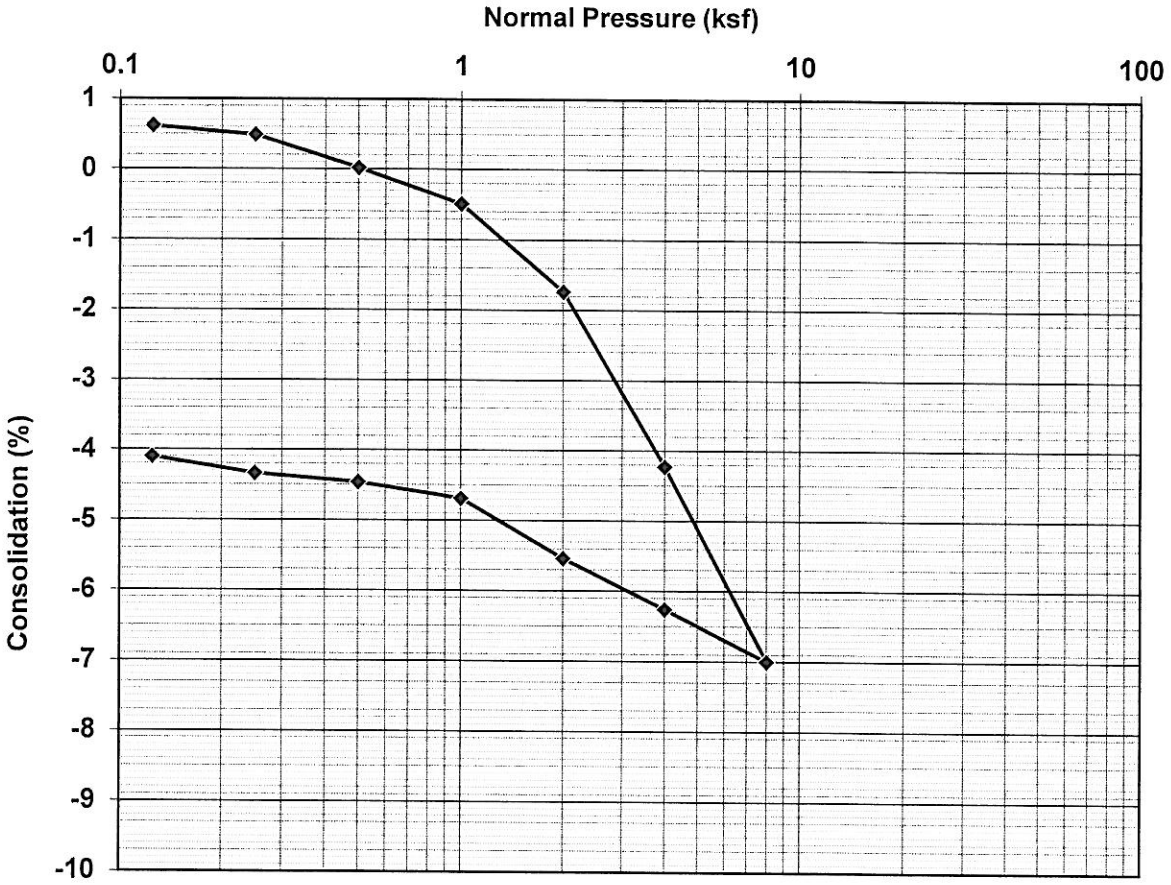
CONSOLIDATION - ASTM D2435

AGS Form E-3

Project Name: Oak Valley Town Center
Location: Calimesa, CA
Project No: 2001-04
Date: 8/17/2020

Excavation: AGS 16
Depth: 10 ft
Description: Qal- Silty Clay
By: FV

Consolidation-Pressure Curve



Test Description:

	Before Test	After Test
Water Content, w	21.2%	28.0%
Void Ratio, e	0.86	0.78
Saturation, S	67%	97%
Dry Density (pcf)	90.7	94.6
Wet Density (pcf)	109.9	121.1

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

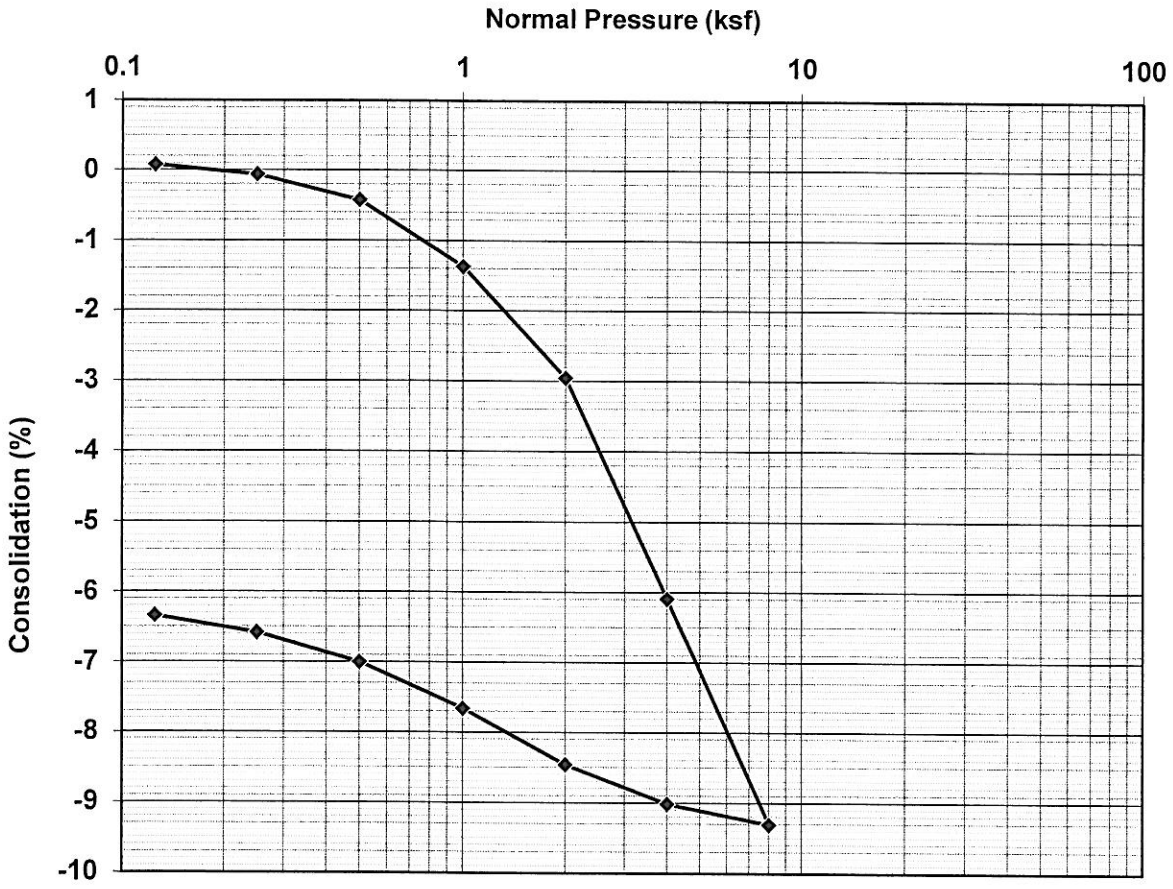
CONSOLIDATION - ASTM D2435

AGS Form E-3

Project Name: Oak Valley Town Center
Location: Calimesa, CA
Project No: 2001-04
Date: 8/17/2020

Excavation: AGS 16
Depth: 20 ft
Description: Qal- Silty Clay with Sand
By: FV

Consolidation-Pressure Curve



Test Description:

	Before Test	After Test
Water Content, w	25.3%	25.5%
Void Ratio, e	0.99	0.86
Saturation, S	69%	80%
Dry Density (pcf)	84.8	90.5
Wet Density (pcf)	106.3	113.6

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

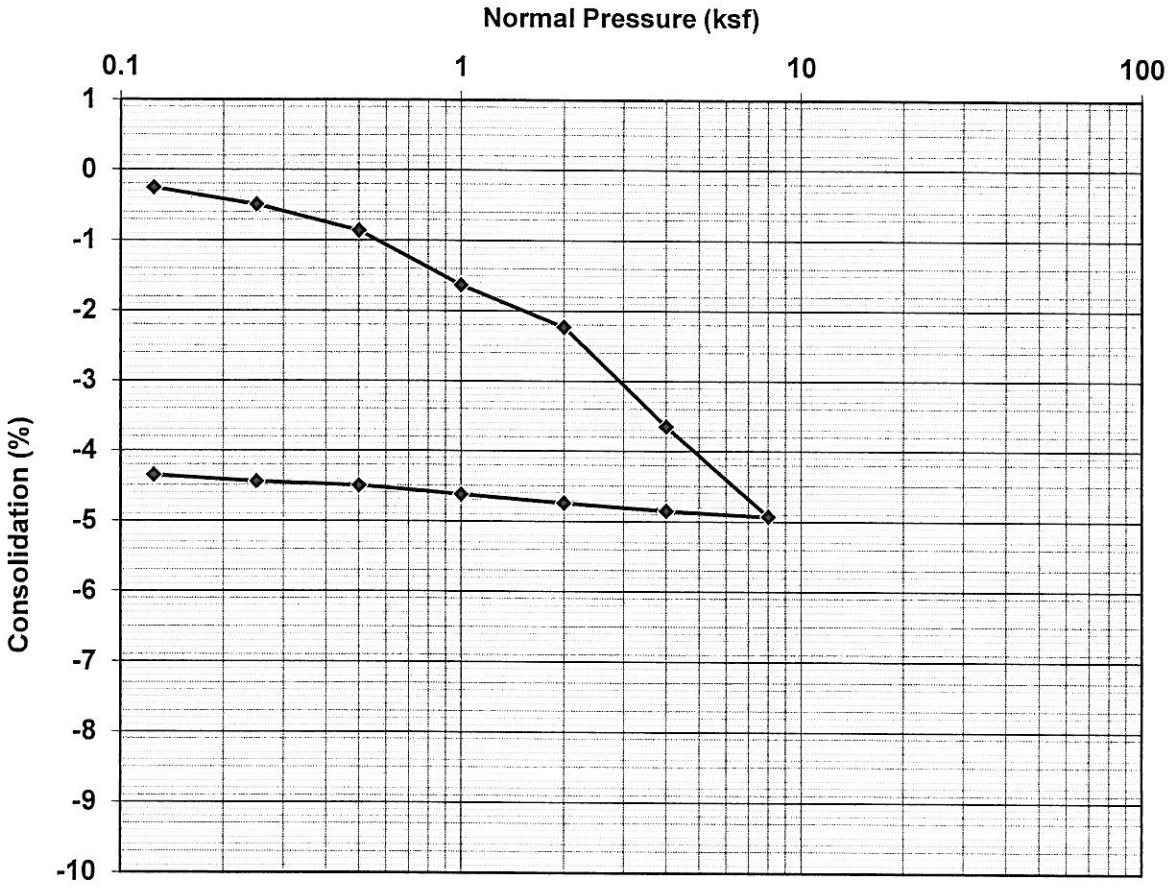
CONSOLIDATION - ASTM D2435

AGS Form E-3

Project Name: Oak Valley Town Center
Location: Calimesa
Project No: 2004-01
Date: 9/29/2020

Excavation: AGS-16
Depth: 30 ft
Description: Qoa- Clayey Sand
By: FV

Consolidation-Pressure Curve



Test Description:

	Before Test	After Test
Water Content, w	12.3%	13.9%
Void Ratio, e	0.40	0.34
Saturation, S	84%	112%
Dry Density (pcf)	120.6	126.1
Wet Density (pcf)	135.5	143.6

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

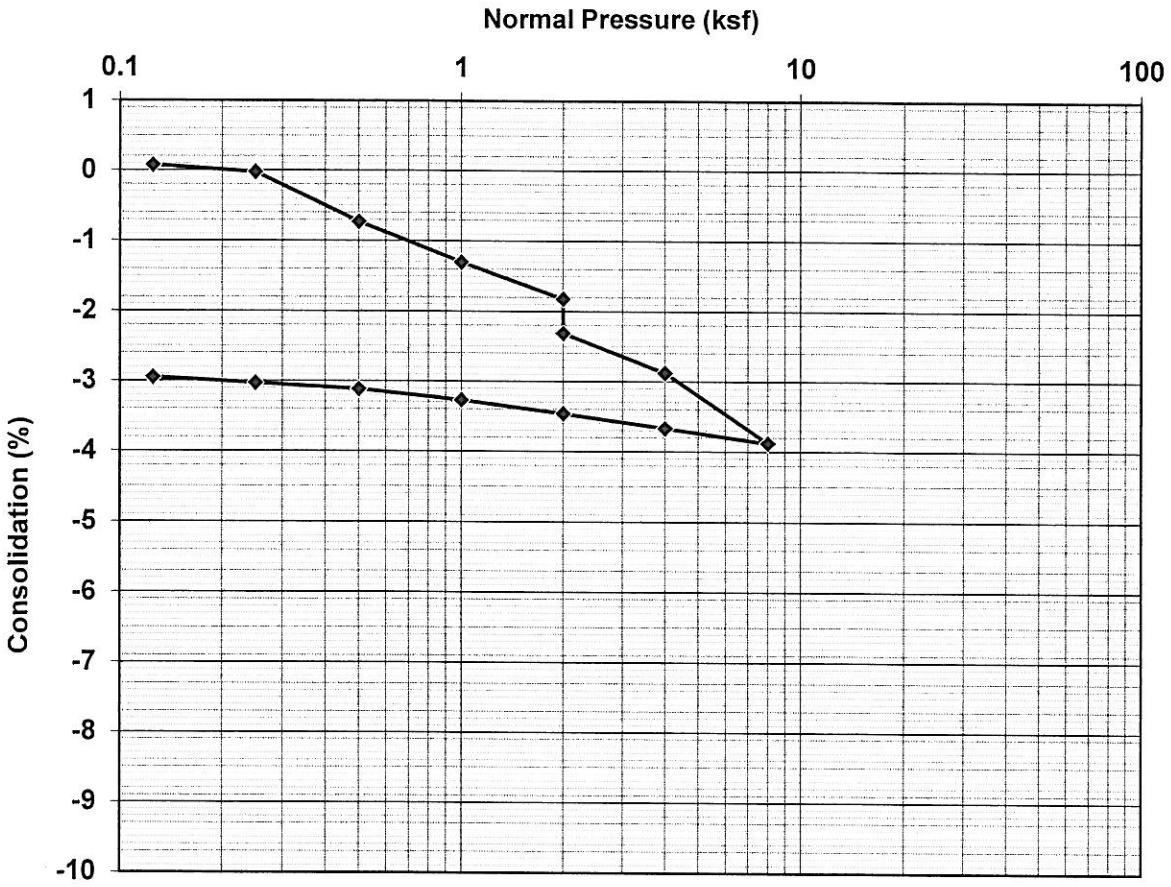
CONSOLIDATION - ASTM D2435

AGS Form E-3

Project Name: Oak Valley Town Center
Location: Calimesa
Project No: 2004-01
Date: 9/30/2020

Excavation: AGS-17
Depth: 15 ft
Description: Qoa- Silty Sand
By: FV

Consolidation-Pressure Curve



Test Description:

	Before Test	After Test
Water Content, w	4.5%	14.1%
Void Ratio, e	0.41	0.37
Saturation, S	30%	104%
Dry Density (pcf)	119.6	123.3
Wet Density (pcf)	125.0	140.6

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

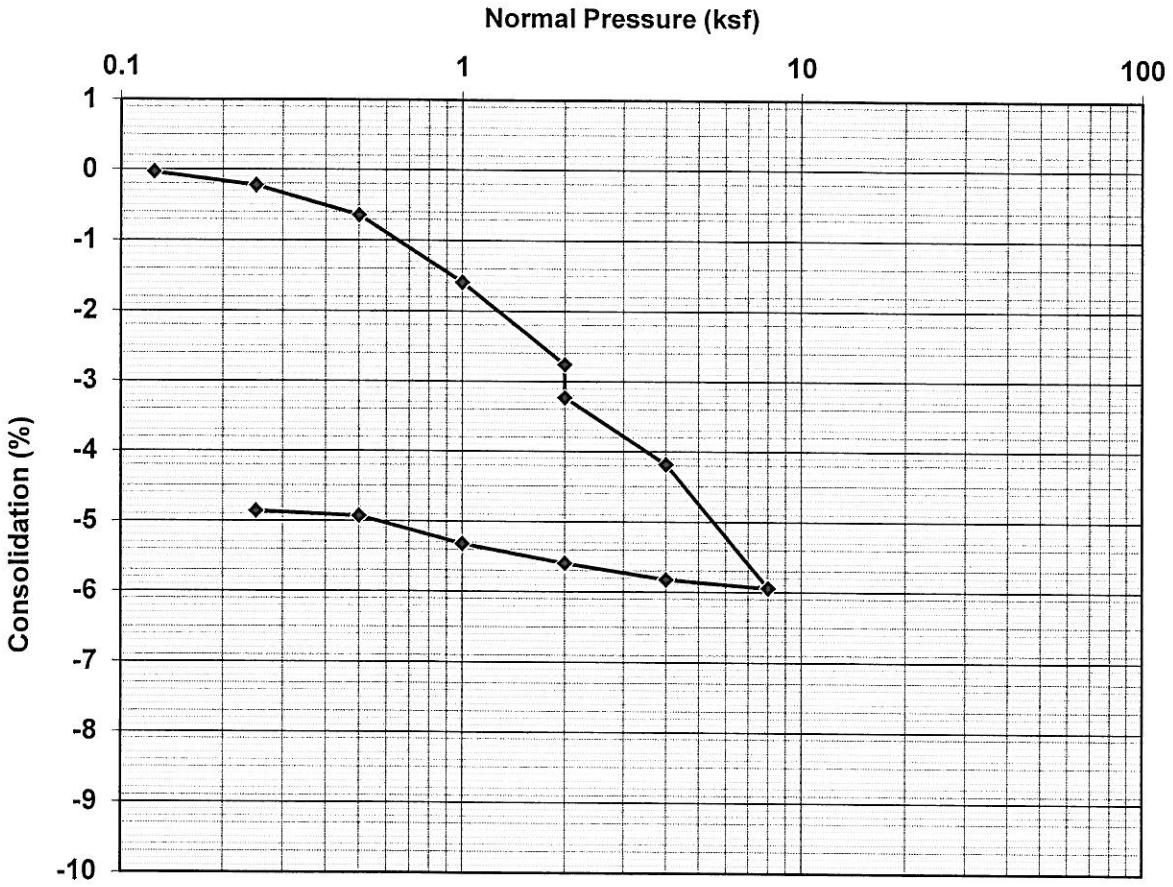
CONSOLIDATION - ASTM D2435

AGS Form E-3

Project Name: Oak Valley Town Center
Location: Calimesa
Project No: 2004-01
Date: 9/30/2020

Excavation: AGS-18
Depth: 20 ft
Description: Qal- Silty Clay
By: FV

Consolidation-Pressure Curve



Test Description:

	Before Test	After Test
Water Content, w	12.3%	19.0%
Void Ratio, e	0.57	0.50
Saturation, S	58%	103%
Dry Density (pcf)	107.1	112.6
Wet Density (pcf)	120.3	134.0

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080

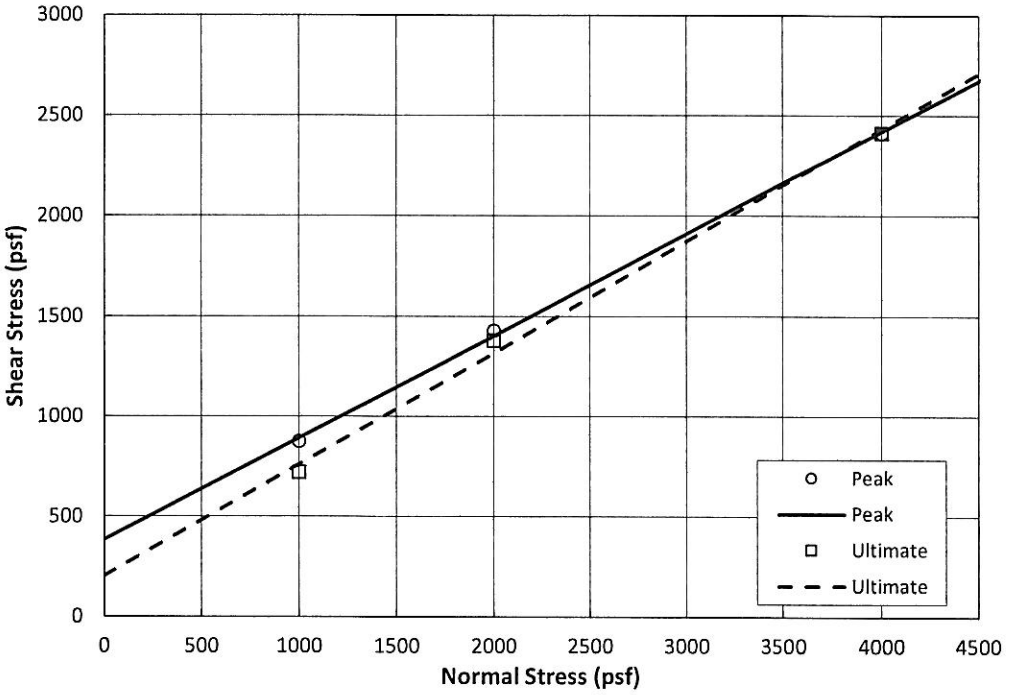
Project Name: Oak Valley Town Center
Location: Calimesa
Project No.: 2004-01
Date: 5/19/2020

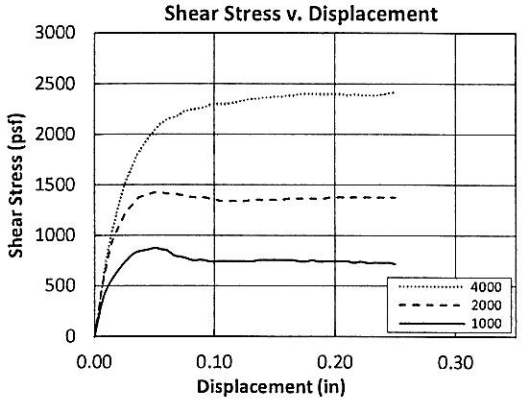
Excavation: T-9
Depth: 1-3 ft
Tested by: FV
Reviewed by: JC

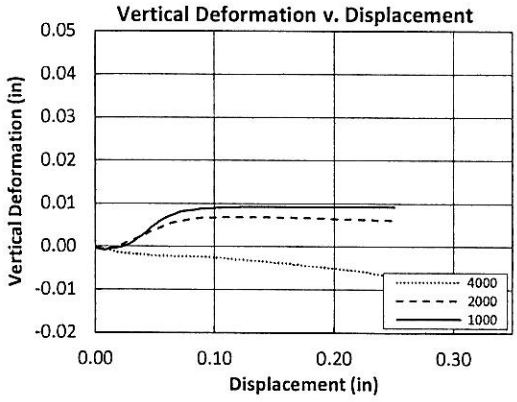
Samples Tested	1	2	3
Intial Moisture (%)	10.0	10.0	10.0
Initial Dry Density (pcf)	111.5	111.5	111.5
Normal Stress (psf)	1000	2000	4000
Peak Shear Stress (psf)	876	1428	2412
Ult. Shear Stress (psf)	720	1380	2412

Soil Type: Qya
Test: Remolded 90%
Method: Drained
Consolidation: Yes
Saturation: Yes
Shear Rate ($^{in}/_{min}$): 0.01

Strength Parameters	Peak	Ultimate
Friction Angle, phi (deg)	27	29
Cohesion (psf)	384	204







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080

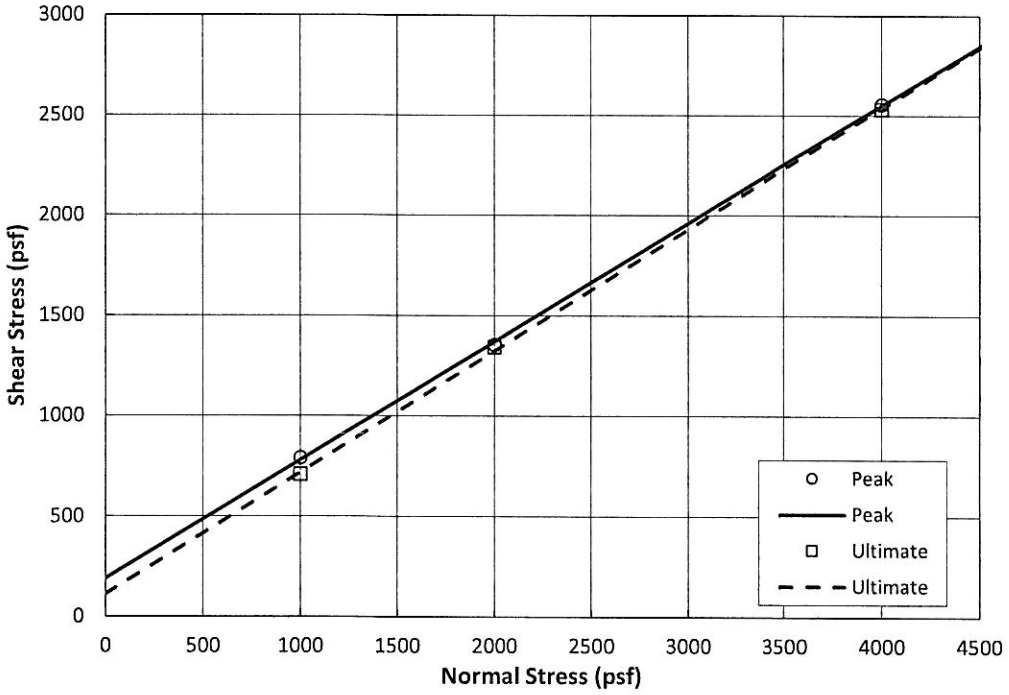
Project Name: Oak Valley Town Center
Location: Calimesa
Project No.: 2004-01
Date: 5/20/2020

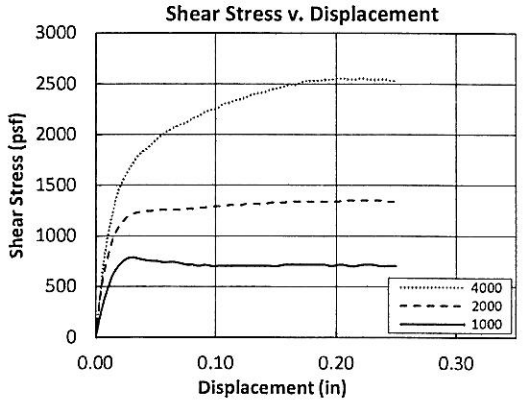
Excavation: T-18
Depth: 6-7 ft
Tested by: FV
Reviewed by: JC

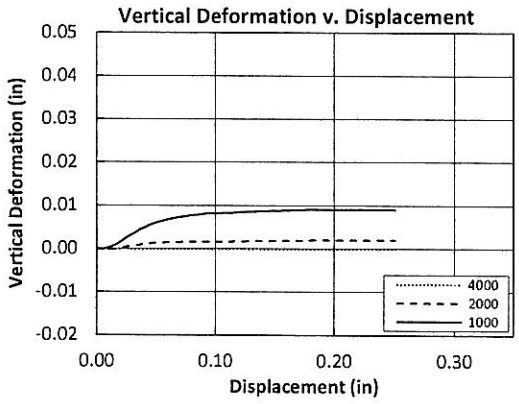
Samples Tested	1	2	3
Intial Moisture (%)	10.5	10.5	10.5
Initial Dry Density (pcf)	114.7	114.7	114.7
Normal Stress (psf)	1000	2000	4000
Peak Shear Stress (psf)	792	1356	2556
Ult. Shear Stress (psf)	708	1344	2532

Soil Type: Qoa
Test: Remolded 90%
Method: Drained
Consolidation: Yes
Saturation: Yes
Shear Rate ($^{in}/_{min}$): 0.01

Strength Parameters	Peak	Ultimate
Friction Angle, phi (deg)	31	31
Cohesion (psf)	192	114







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080

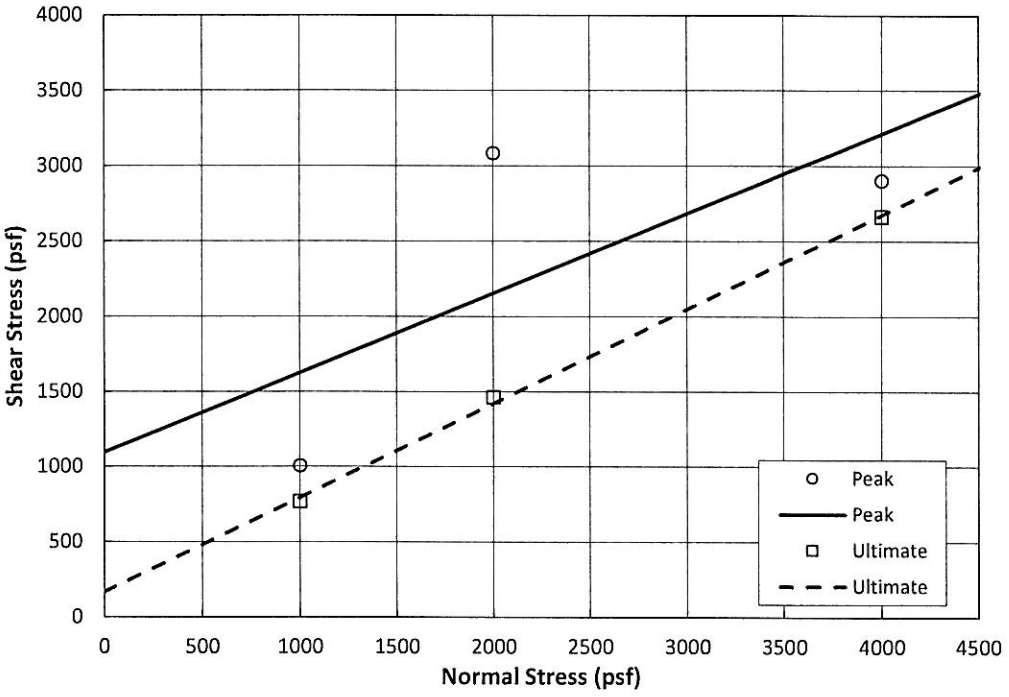
Project Name: Oak Valley Town Center
Location: Calimesa
Project No.: 2004-01
Date: 9/3/2020

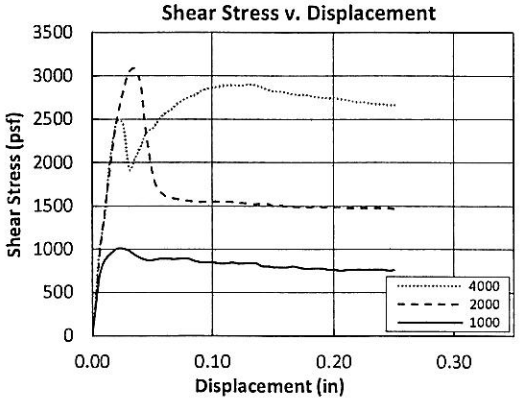
Excavation: AGS-2
Depth: 25 ft
Tested by: FV
Reviewed by: SS

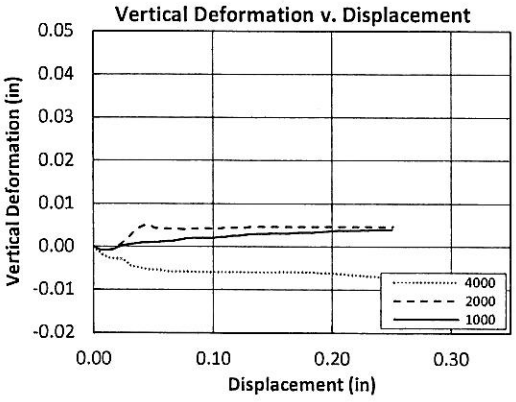
Samples Tested	1	2	3
Intial Moisture (%)	10.2	10.2	10.2
Initial Dry Density (pcf)	113.8	123.7	111.8
Normal Stress (psf)	1000	2000	4000
Peak Shear Stress (psf)	1008	3084	2904
Ult. Shear Stress (psf)	768	1464	2664

Soil Type: Yellowish SM
Test: Undisturbed
Method: Drained
Consolidation: Yes
Saturation: Yes
Shear Rate ($^{in}/_{min}$): 0.01

Strength Parameters	Peak	Ultimate
Friction Angle, phi (deg)	28	32
Cohesion (psf)	1098	168







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080

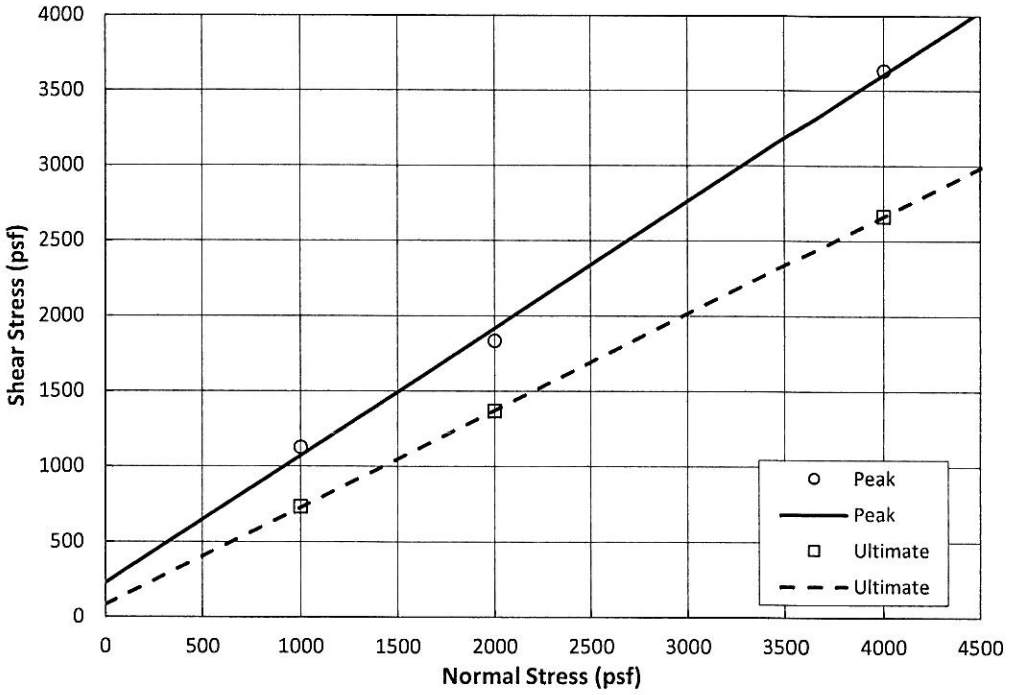
Project Name: Oak Valley Town Center
Location: Calimesa
Project No.: 2004-01
Date: 8/31/2020

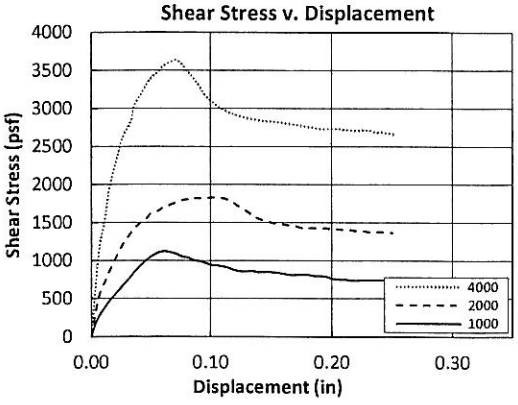
Excavation: AGS-5
Depth: 15 ft
Tested by: FV
Reviewed by: SS

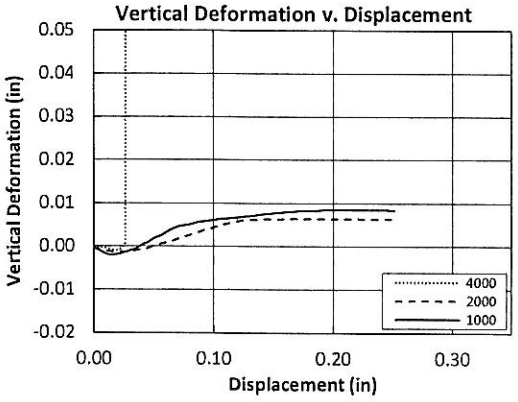
Samples Tested	1	2	3
Intial Moisture (%)	9.5	9.5	9.5
Initial Dry Density (pcf)	122.9	121.1	117.9
Normal Stress (psf)	1000	2000	4000
Peak Shear Stress (psf)	1128	1836	3636
Ult. Shear Stress (psf)	732	1368	2664

Soil Type: Light Brn SC-SM
Test: Undisturbed
Method: Drained
Consolidation: Yes
Saturation: Yes
Shear Rate ($^{in}/_{min}$): 0.01

Strength Parameters	Peak	Ultimate
Friction Angle, phi (deg)	40	33
Cohesion (psf)	228	84







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080

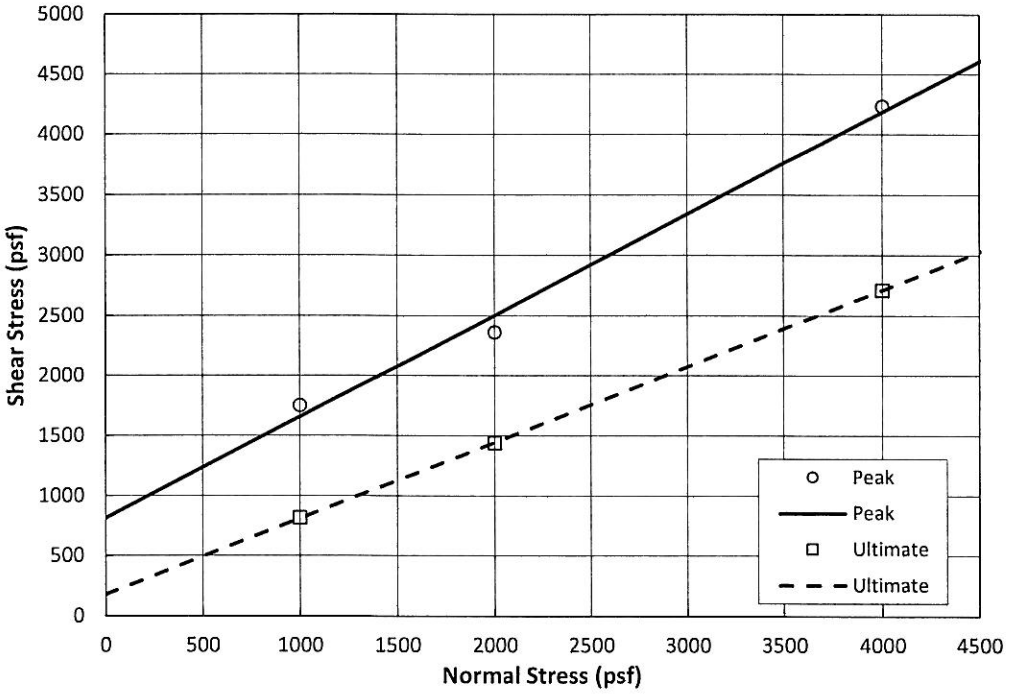
Project Name: Oak Valley Town Center
Location: Calimesa
Project No.: 2004-01
Date: 9/10/2020

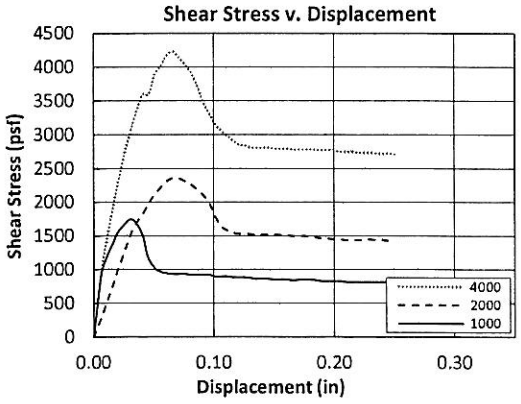
Excavation: AGS-6
Depth: 25 ft
Tested by: FV
Reviewed by: SS

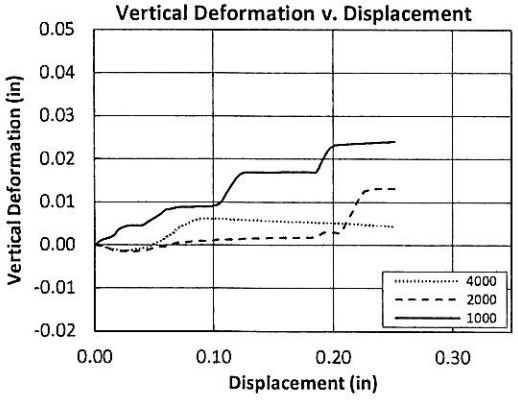
Samples Tested	1	2	3
Intial Moisture (%)	8.6	8.6	8.6
Initial Dry Density (pcf)	121.0	121.8	121.0
Normal Stress (psf)	1000	2000	4000
Peak Shear Stress (psf)	1752	2364	4236
Ult. Shear Stress (psf)	816	1440	2712

Soil Type: Blue SM
Test: Undisturbed
Method: Drained
Consolidation: Yes
Saturation: Yes
Shear Rate ($^{in}/_{min}$): 0.01

Strength Parameters	Peak	Ultimate
Friction Angle, phi (deg)	40	32
Cohesion (psf)	816	180







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080

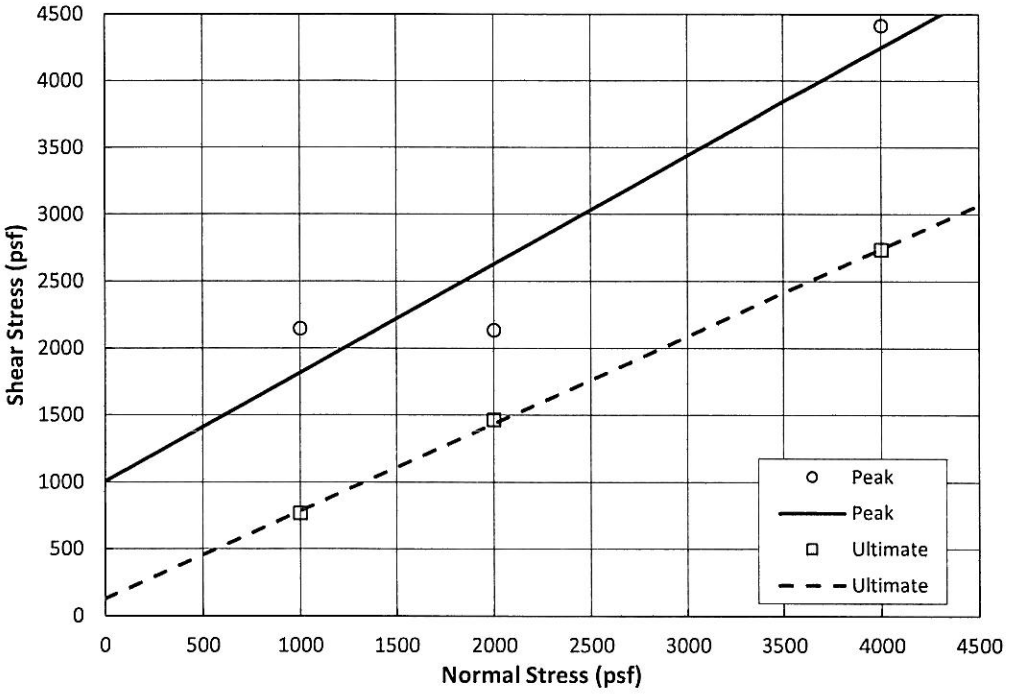
Project Name: Oak Valley Town Center
Location: Calimesa
Project No.: 2004-01
Date: 9/4/2020

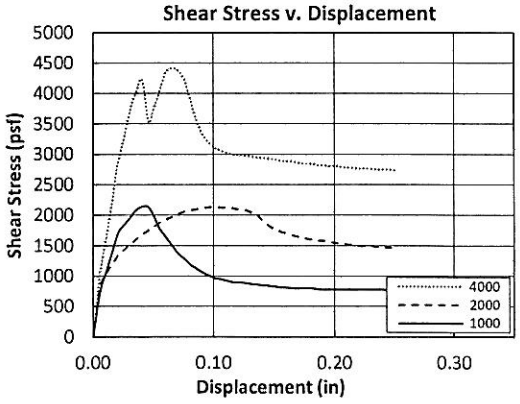
Excavation: AGS-6
Depth: 15 ft
Tested by: FV
Reviewed by: SS

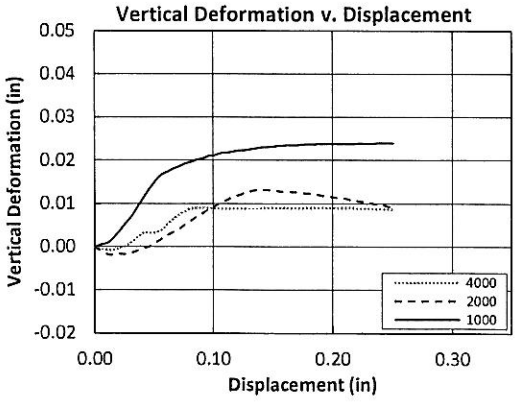
Samples Tested	1	2	3
Intial Moisture (%)	11.7	11.7	11.7
Initial Dry Density (pcf)	120.0	118.0	119.1
Normal Stress (psf)	1000	2000	4000
Peak Shear Stress (psf)	2148	2136	4416
Ult. Shear Stress (psf)	768	1464	2736

Soil Type: Olive ML-SM
Test: Undisturbed
Method: Drained
Consolidation: Yes
Saturation: Yes
Shear Rate ($^{in}/_{min}$): 0.01

Strength Parameters	Peak	Ultimate
Friction Angle, phi (deg)	39	33
Cohesion (psf)	1008	132







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080

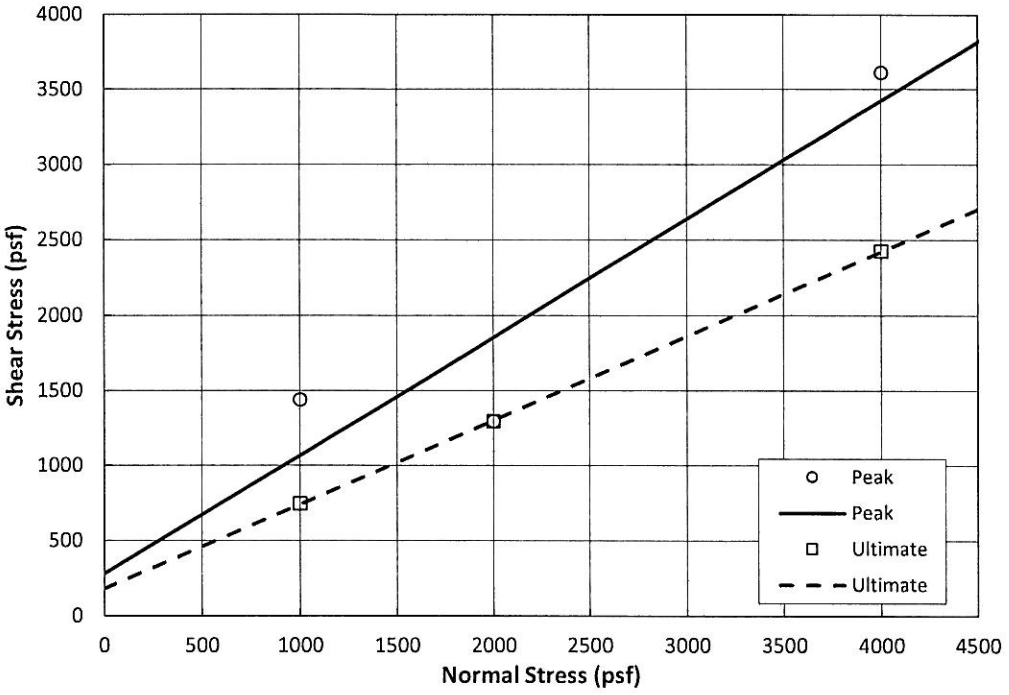
Project Name: Oak Valeey Town Center
Location: Calimesa
Project No.: 2004-01
Date: 8/28/2020

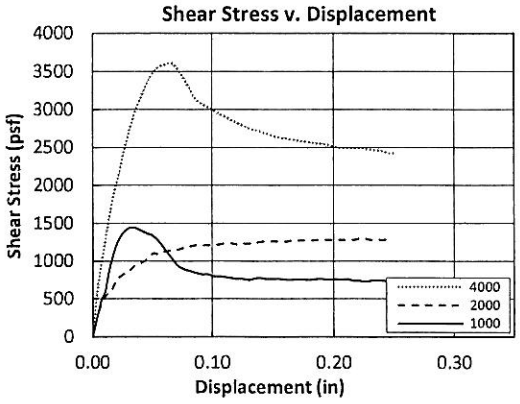
Excavation: AGS-8
Depth: 15 ft
Tested by: FV
Reviewed by: SS

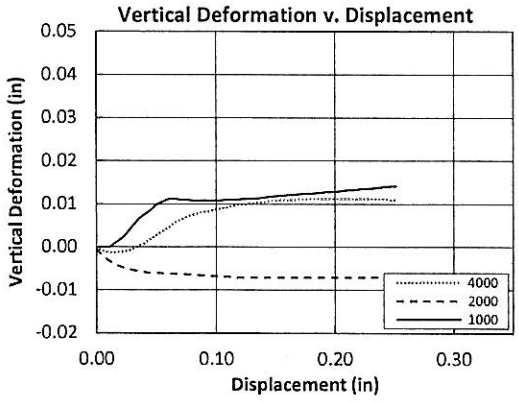
Samples Tested	1	2	3
Intial Moisture (%)	11.4	11.4	11.4
Initial Dry Density (pcf)	120.5	120.9	121.3
Normal Stress (psf)	1000	2000	4000
Peak Shear Stress (psf)	1440	1296	3612
Ult. Shear Stress (psf)	744	1296	2424

Soil Type: Olive SM-ML
Test: Undisturbed
Method: Drained
Consolidation: Yes
Saturation: Yes
Shear Rate ($^{in}/_{min}$): 0.01

Strength Parameters	Peak	Ultimate
Friction Angle, phi (deg)	38	29
Cohesion (psf)	282	180







ANAHEIM TEST LAB, INC

196 Technology Drive, Unit D
Irvine, CA 92618
Phone (949)336-6544

Advanced Geotechnical Solutions, Inc.
485 Corporate Ave., Suite B
Escondido, CA 92029

DATE: 05/20/2020

P.O. NO.: Chain of Custody

LAB NO.: C-3816

SPECIFICATION: CTM-643/417/422

MATERIAL: Soil

Project No.: 2004-01
Project: Oak Valley Town Center
Date sampled: 05/18/2020
Sample ID: T-2 @ 8'-9'

ANALYTICAL REPORT

CORROSION SERIES
SUMMARY OF DATA

pH	MIN. RESISTIVITY per CT. 643 ohm-cm	SOLUBLE SULFATES per CT. 417 ppm	SOLUBLE CHLORIDES per CT. 422 ppm
7.5	7,600	292	111

RESPECTFULLY SUBMITTED

WES BRIDGER, LAB MANAGER

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

EXPANSION INDEX - ASTM D4829

AGS FORM E-6

Project Name: Oak Valley Town Center
Location: Calimesa
P/W: 2004-01
Date: 5/21/20

Excavation/Tract: T-2
Depth/Lot: 6-9 ft
Description: Qya
Tested by: FV
Checked by: SS

Expansion Index - ASTM D4829	
Initial Dry Density (pcf):	108.3
Initial Moisture Content (%):	10.4
Initial Saturation (%):	50.6
Final Dry Density (pcf):	106.8
Final Moisture Content (%):	20.1
Final Saturation (%):	93.9
Expansion Index:	14
Potential Expansion:	Very Low

ASTM D4829 - Table 5.3	
Expansion Index	Potential Expansion
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

MAXIMUM DENSITY - ASTM D1557

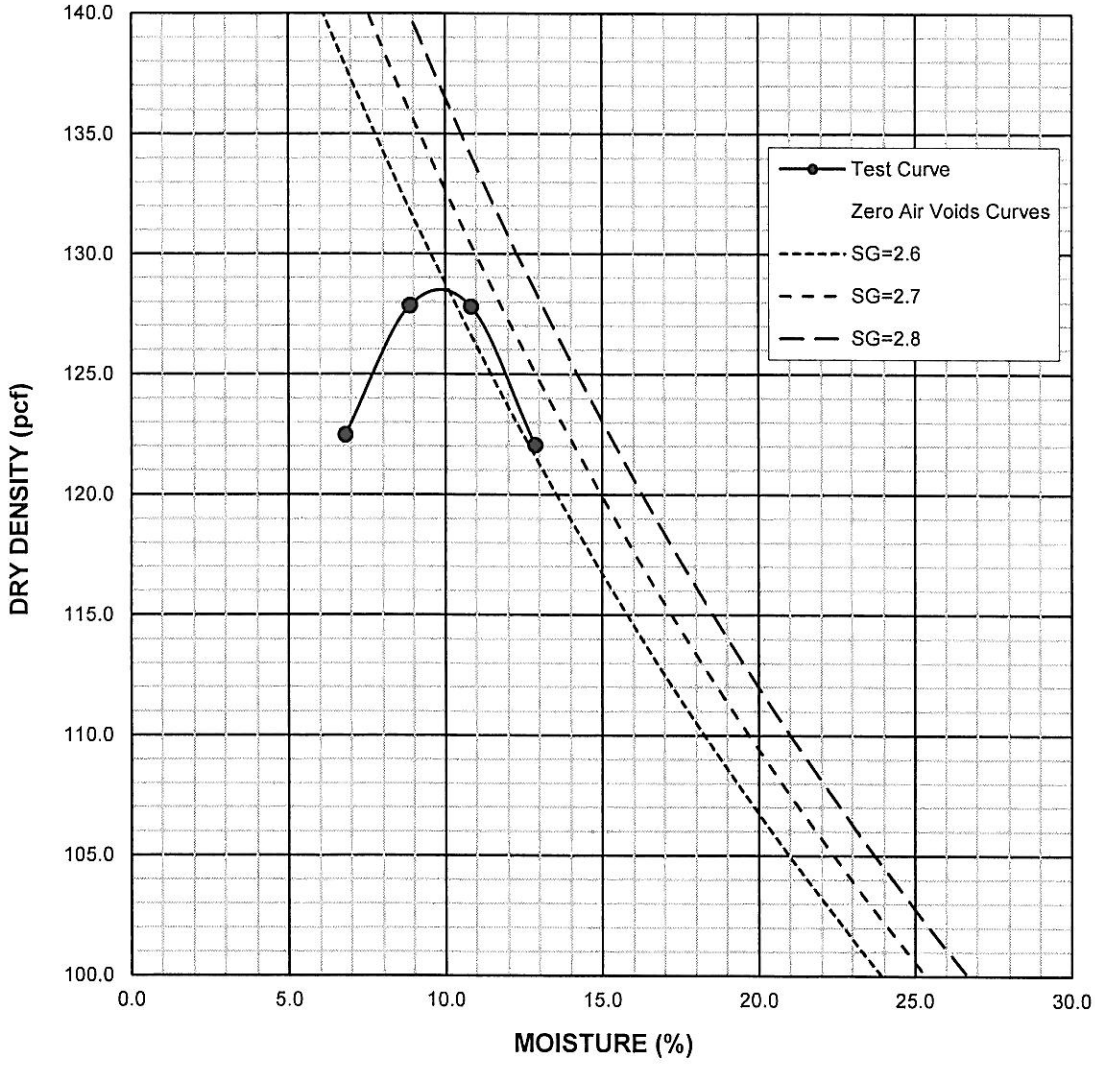
AGS FORM E-8

Project Name: Oak Valley Town Center
Location: Calimesa
P/W No.: 2004-01
Date: 05-2020

Excavation: T-3
Depth: 8-10 ft
Soil Type: Qya
Tested by: FV
Checked by: SS

Method:	A	Oversize Retained: 25 %		
Point No.	1	2	3	4
Dry Density (pcf)	122.5	127.9	127.8	122.1
Moisture Content (%)	6.8	8.9	10.8	12.9

MAXIMUM DENSITY CURVE



Corrected Max. Dry Density **136.3 pcf**
Max. Dry Density **128.5 pcf**

Corrected Moisture **7.5** %
Optimum Moisture **10.0** %

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

MAXIMUM DENSITY - ASTM D1557

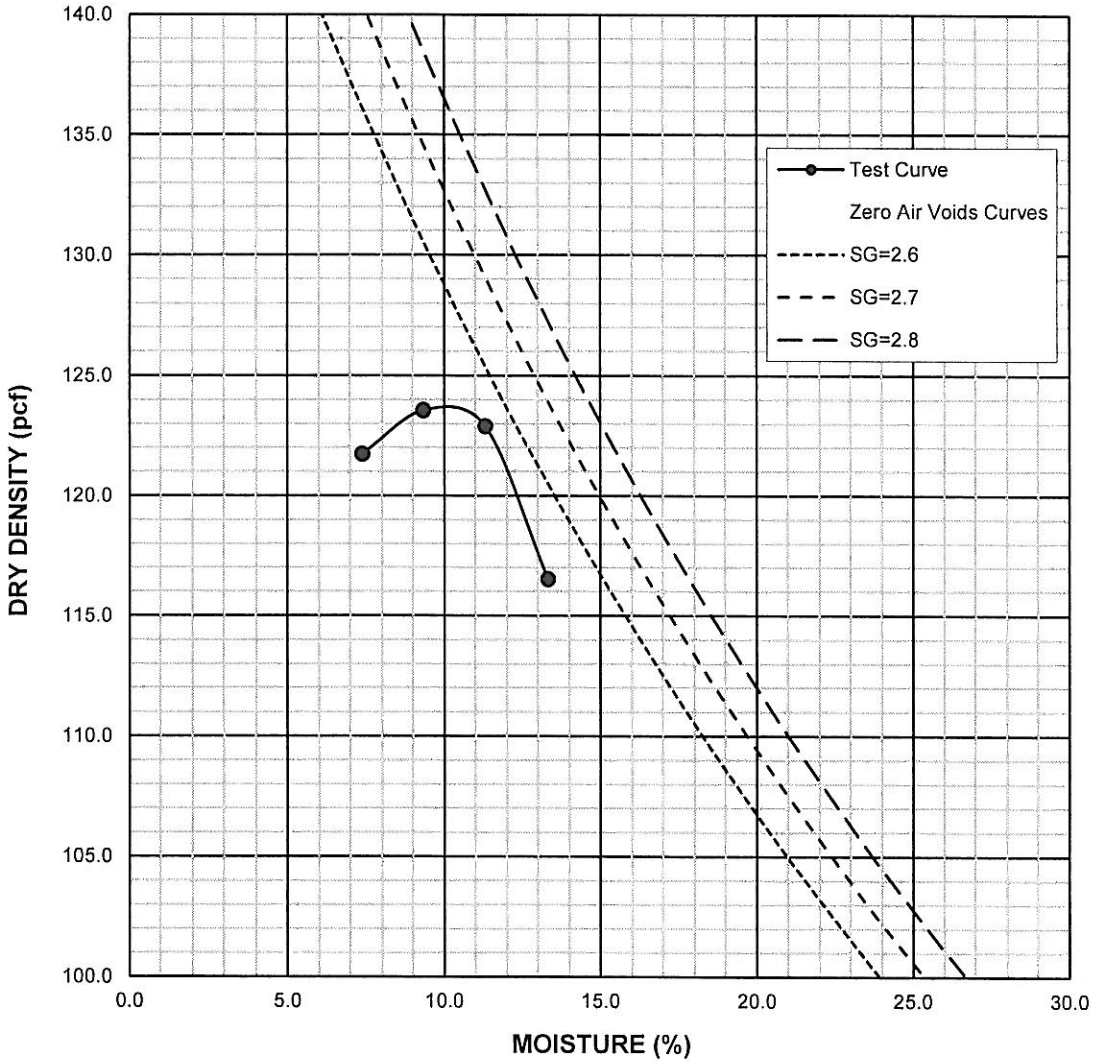
AGS FORM E-8

Project Name: Oak Valley Town Center
Location: Calimesa
P/W No.: 2004-01
Date: 05-2020

Excavation: T-9
Depth: 1-3 ft
Soil Type: Qya
Tested by: DC
Checked by: JC

Method:	A	Oversize Retained: 2.9 %		
Point No.	1	2	3	4
Dry Density (pcf)	121.7	123.6	122.9	116.5
Moisture Content (%)	7.4	9.3	11.3	13.3

MAXIMUM DENSITY CURVE



Corrected Max. Dry Density **124.8 pcf**
Max. Dry Density **123.9 pcf**

Corrected Moisture **9.7** %
Optimum Moisture **10.0** %

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

MAXIMUM DENSITY - ASTM D1557

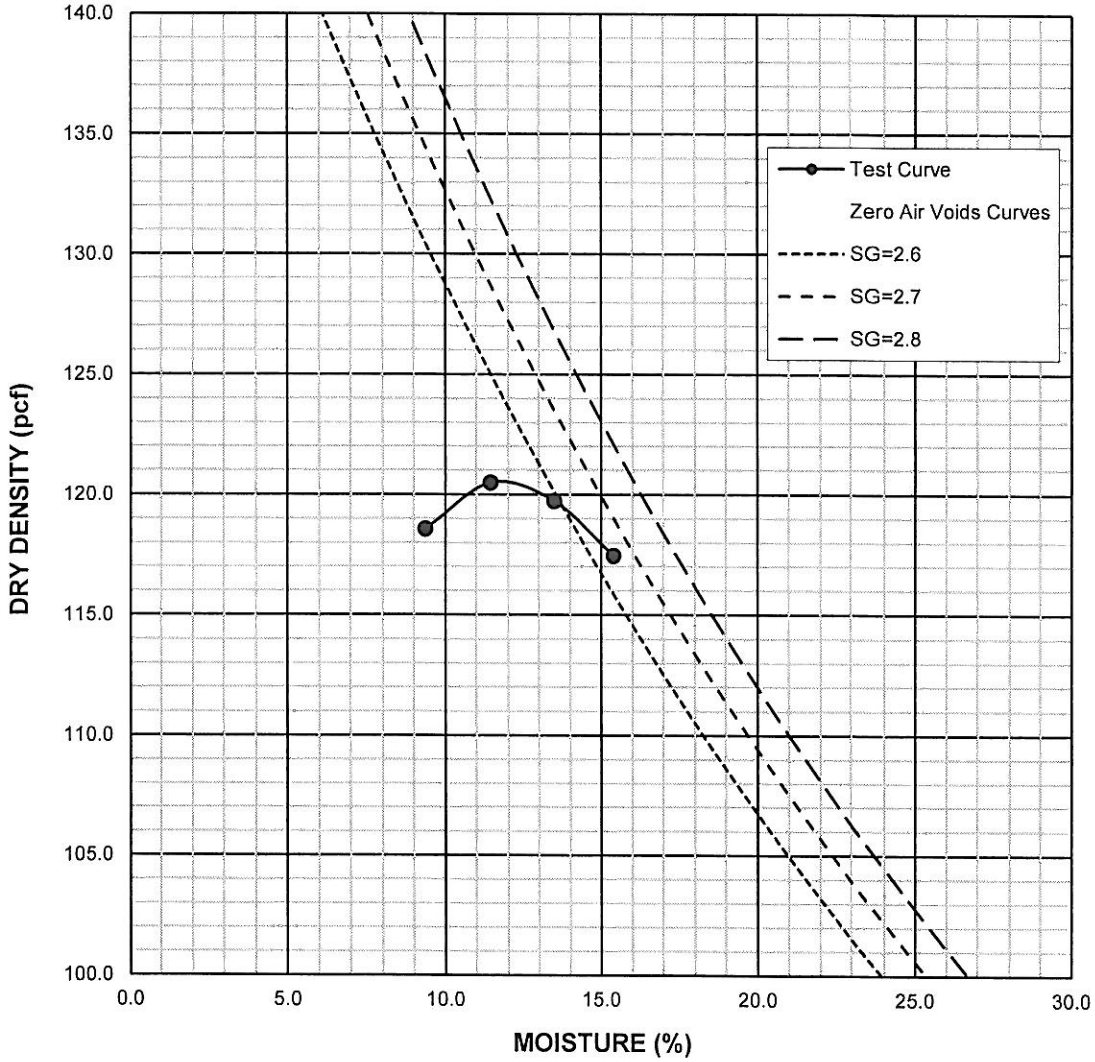
AGS FORM E-8

Project Name: Oak Valley Town Center
Location: Calimesa
P/W No.: 2004-01
Date: 05-2020

Excavation: T-16
Depth: 7-9 ft
Soil Type: Qoa
Tested by: DC
Checked by: JC

Method:	A	Oversize Retained: 10 %		
Point No.	1	2	3	4
Dry Density (pcf)	118.6	120.5	119.7	117.5
Moisture Content (%)	9.4	11.4	13.5	15.4

MAXIMUM DENSITY CURVE



Corrected Max. Dry Density **123.9 pcf**
Max. Dry Density **120.5 pcf**

Corrected Moisture **9.9** %
Optimum Moisture **11.0** %

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

MAXIMUM DENSITY - ASTM D1557

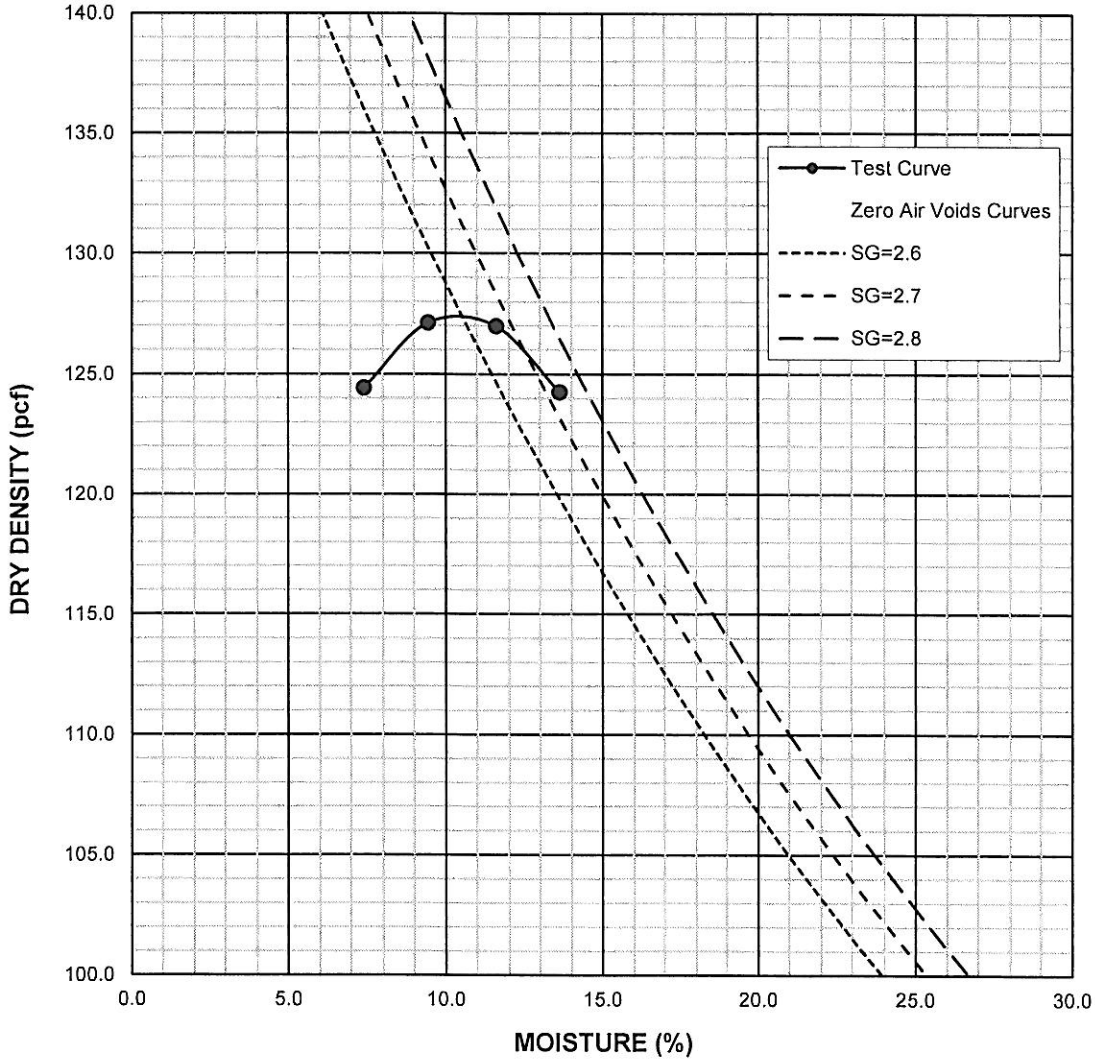
AGS FORM E-8

Project Name: Oak Valley Town Center
Location: Calimesa
P/W No.: 2004-01
Date: 05-2020

Excavation: T-18
Depth: 6-7 ft
Soil Type: Qoa
Tested by: FV
Checked by: JC

Method:	A	Oversize Retained: 10 %		
Point No.	1	2	3	4
Dry Density (pcf)	124.4	127.1	127.0	124.3
Moisture Content (%)	7.4	9.4	11.6	13.6

MAXIMUM DENSITY CURVE



Corrected Max. Dry Density **130.6 pcf**
Max. Dry Density **127.5 pcf**

Corrected Moisture **9.5** %
Optimum Moisture **10.5** %

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

MAXIMUM DENSITY - ASTM D1557

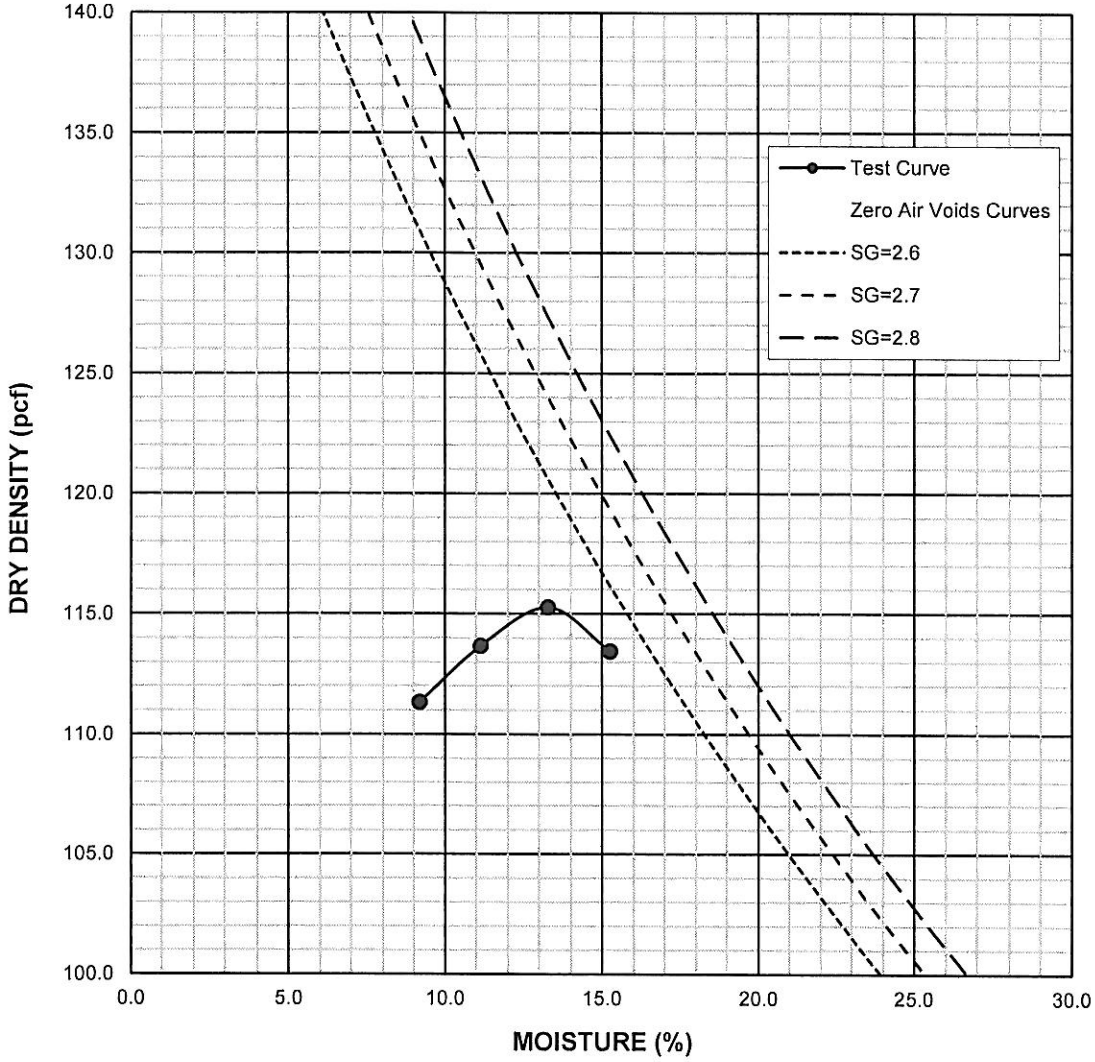
AGS FORM E-8

Project Name: Oak Valley Town Center
Location: Calimesa
P/W No.: 2004-01
Date: 05-2019

Excavation: T-19
Depth: 6-9 ft
Soil Type: Qlo
Tested by: FV
Checked by: JC

Method:	A	Oversize Retained: 10 %		
Point No.	1	2	3	4
Dry Density (pcf)	111.3	113.7	115.3	113.5
Moisture Content (%)	9.2	11.1	13.3	15.3

MAXIMUM DENSITY CURVE



Corrected Max. Dry Density **118.7 pcf**
Max. Dry Density **115 pcf**

Corrected Moisture **12.2** %
Optimum Moisture **13.5** %

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

AGS Form E-2

ATTERBERG LIMITS - ASTM D4318

Project Name: Oak Valley Town Center
Location: Calimesa
Project No: 2004-01
Date: 9/24/2020

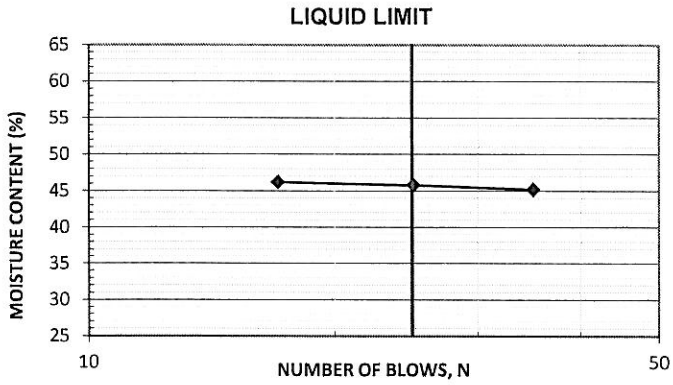
Excavation: AGS-3
Depth: 20 ft
Description: ML
By: FV

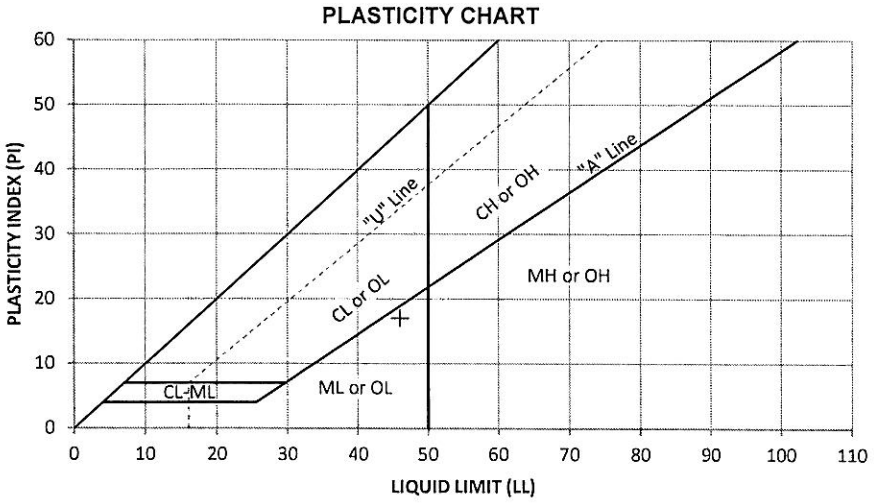
LIQUID LIMIT

Can No.	16	4	2
Wt. wet soil+can (g)	19.20	18.37	19.24
Wt. dry soil+can (g)	16.70	16.09	16.68
Wt. can (g)	11.17	11.11	11.14
Wt. mosture (g)	2.50	2.28	2.56
Wt. dry soil (g)	5.53	4.98	5.54
Water Content %	45.21	45.78	46.21
No. of Blows	35	25	17

PLASTIC LIMIT

101	105
58.85	57.22
57.12	55.77
51.09	50.74
1.73	1.45
6.03	5.03
28.69	28.83





Liquid Limit (LL) 46 Plastic Limit (PL) 29 Plasticity Index (PI) 17

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

AGS Form E-2

ATTERBERG LIMITS - ASTM D4318

Project Name: Oak Valley Town Center
Location: Calimesa
Project No: 2004-01
Date: 9/21/2020

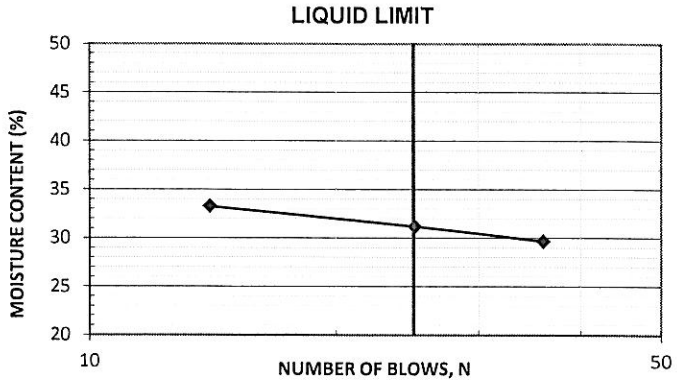
Excavation: AGS-3
Depth: 30 ft
Description: Grey Brn SC-SM
By: FV

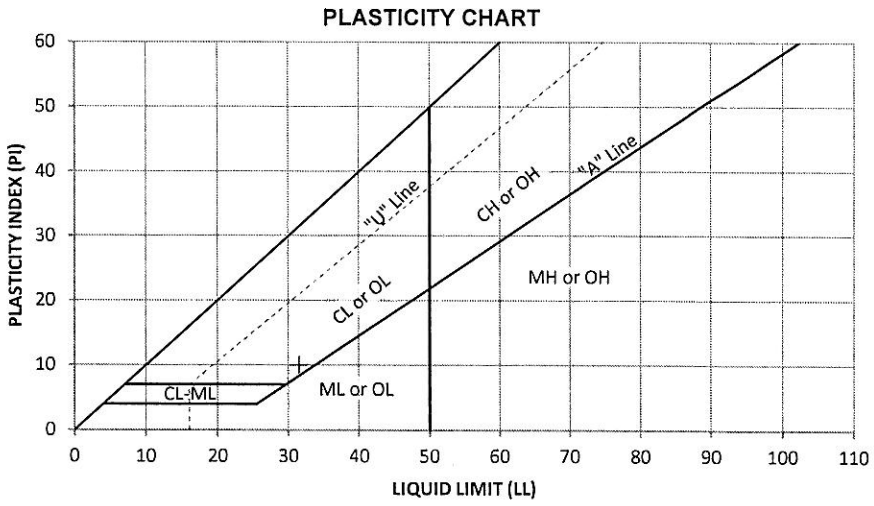
LIQUID LIMIT

Can No.	3	11	1
Wt. wet soil+can (g)	21.32	23.11	23.84
Wt. dry soil+can (g)	18.80	20.29	20.96
Wt. can (g)	11.23	11.25	11.26
Wt. mosture (g)	2.52	2.82	2.88
Wt. dry soil (g)	7.57	9.04	9.70
Water Content %	33.29	31.19	29.69
No. of Blows	14	25	36

PLASTIC LIMIT

108	102
60.31	62.31
58.63	60.41
50.93	51.44
1.68	1.90
7.70	8.97
21.82	21.18





Liquid Limit (LL) 31.5 Plastic Limit (PL) 21.5 Plasticity Index (PI) 10

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

AGS Form E-2

ATTERBERG LIMITS - ASTM D4318

Project Name: Oak Valley Town Center
Location: Calimesa
Project No: 2004-01
Date: 10/28/2020

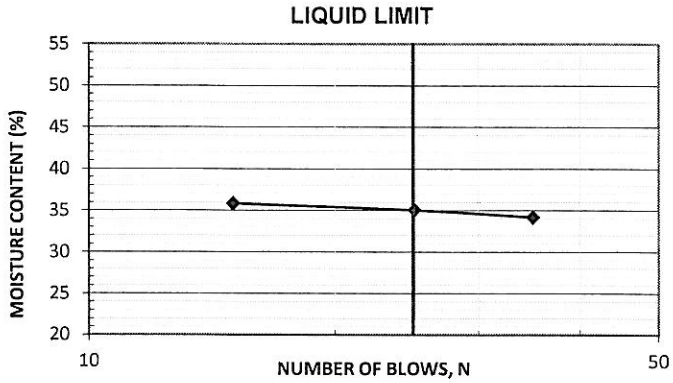
Excavation: AGS-3
Depth: 35 ft
Description: ML
By: FV

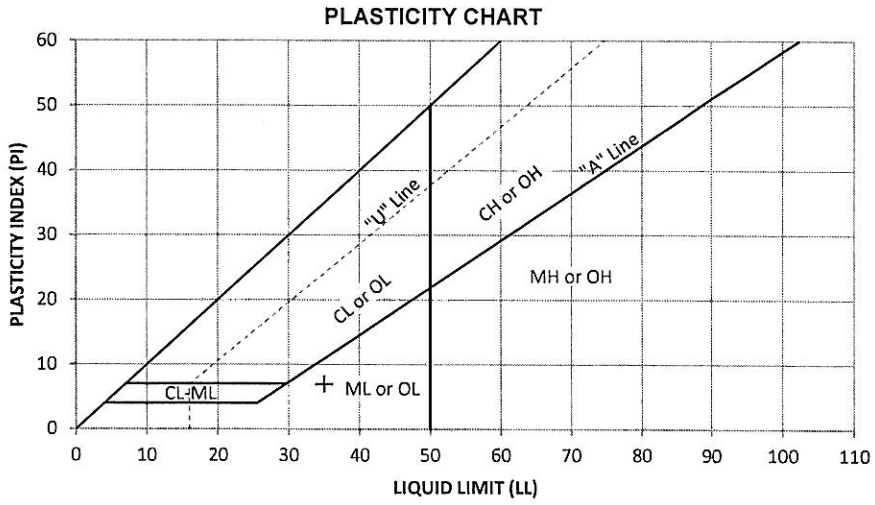
LIQUID LIMIT

Can No.	1	5	11
Wt. wet soil+can (g)	18.84	23.79	24.65
Wt. dry soil+can (g)	16.84	20.55	21.24
Wt. can (g)	11.26	11.31	11.27
Wt. mosture (g)	2.00	3.24	3.41
Wt. dry soil (g)	5.58	9.24	9.97
Water Content %	35.84	35.06	34.20
No. of Blows	15	25	35

PLASTIC LIMIT

108	105
59.98	61.77
57.85	59.50
50.96	50.73
2.13	2.27
6.89	8.77
30.91	25.88





Liquid Limit (LL) 35 Plastic Limit (PL) 28 Plasticity Index (PI) 7

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

AGS Form E-2

:RG LIMITS - ASTM D4318

Project Name: Oak Valley Town Center
Location: Calimesa
Project No: 2004-01
Date: 10/28/2020

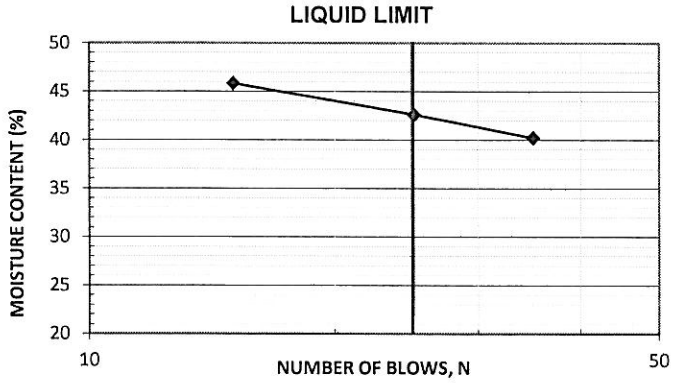
Excavation: AGS-3
Depth: 40 ft
Description: CL (Fine portion)
By: FV

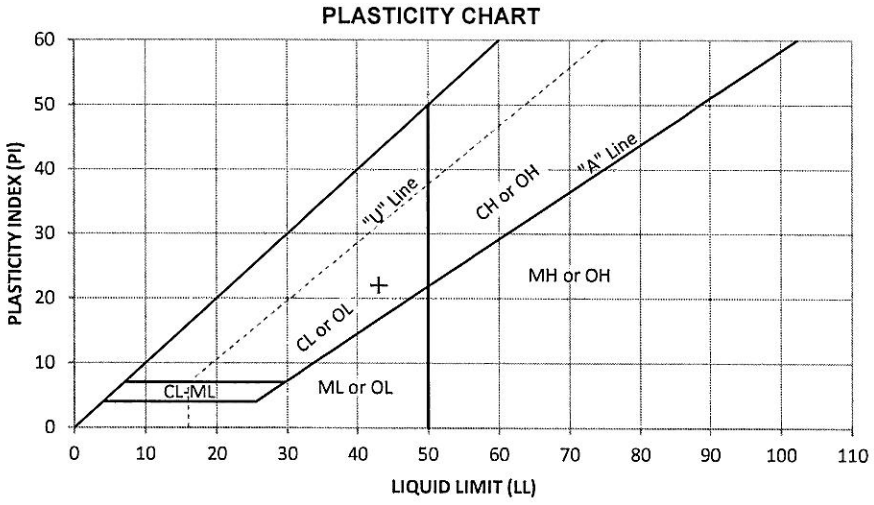
LIQUID LIMIT

Can No.	15	14	3
Wt. wet soil+can (g)	20.42	20.43	19.94
Wt. dry soil+can (g)	17.53	17.69	17.39
Wt. can (g)	11.23	11.26	11.05
Wt. mosture (g)	2.89	2.74	2.55
Wt. dry soil (g)	6.30	6.43	6.34
Water Content %	45.87	42.61	40.22
No. of Blows	15	25	35

PLASTIC LIMIT

104	102
59.27	57.85
57.87	56.74
51.04	51.47
1.40	1.11
6.83	5.27
20.50	21.06





Liquid Limit (LL) 43 Plastic Limit (PL) 21 Plasticity Index (PI) 22

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

AGS Form E-2

ATTERBERG LIMITS - ASTM D4318

Project Name: Oak Valley town Center
Location: Calimesa
Project No: 2004-01
Date: 9/23/2020

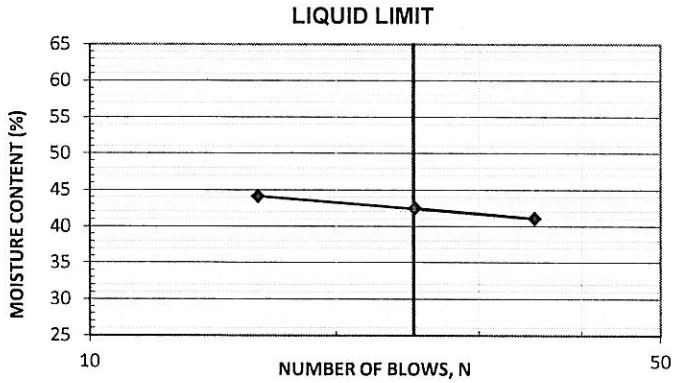
Excavation: AGS-16
Depth: 25 ft
Description: CL
By: FV

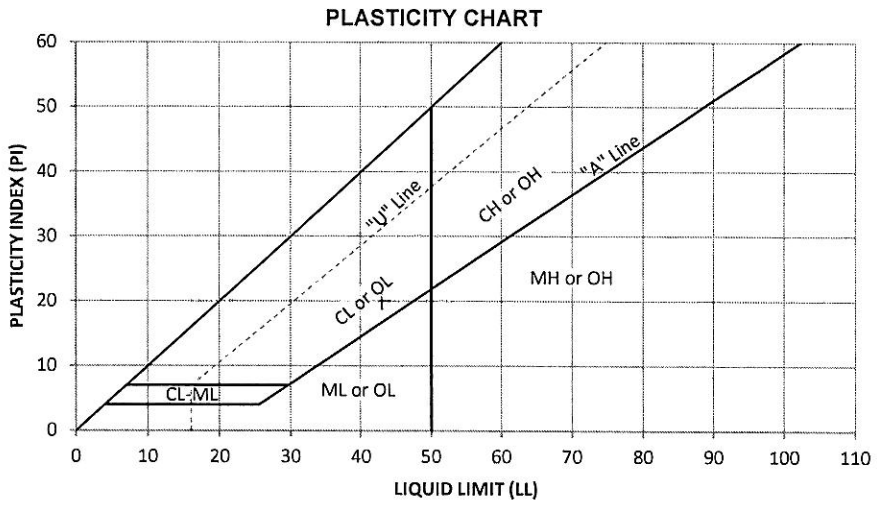
LIQUID LIMIT

Can No.	15	11	5
Wt. wet soil+can (g)	20.10	19.65	18.21
Wt. dry soil+can (g)	17.45	17.20	16.09
Wt. can (g)	11.22	11.24	11.29
Wt. mosture (g)	2.65	2.45	2.12
Wt. dry soil (g)	6.23	5.96	4.80
Water Content %	42.54	41.11	44.17
No. of Blows	25	35	16

PLASTIC LIMIT

109	106
56.91	58.04
55.89	56.78
51.56	51.34
1.02	1.26
4.33	5.44
23.56	23.16





Liquid Limit (LL) 43 Plastic Limit (PL) 23 Plasticity Index (PI) 20

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

AGS Form E-2

ATTERBERG LIMITS - ASTM D4318

Project Name: Oak Valley Town Center
Location: Calimesa
Project No: 2004-01
Date: 10/28/2020

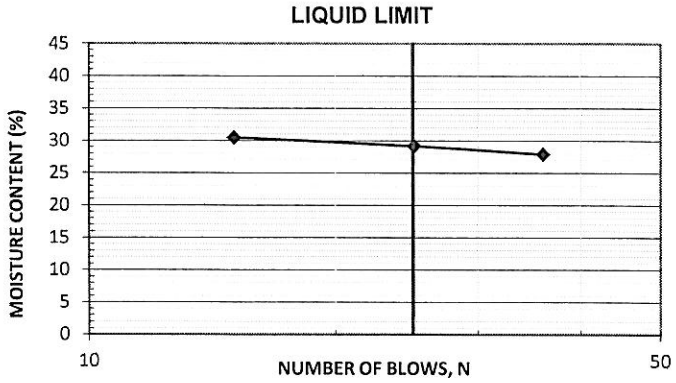
Excavation: AGS-16
Depth: 30 ft
Description: CL (Fine portion)
By: FV

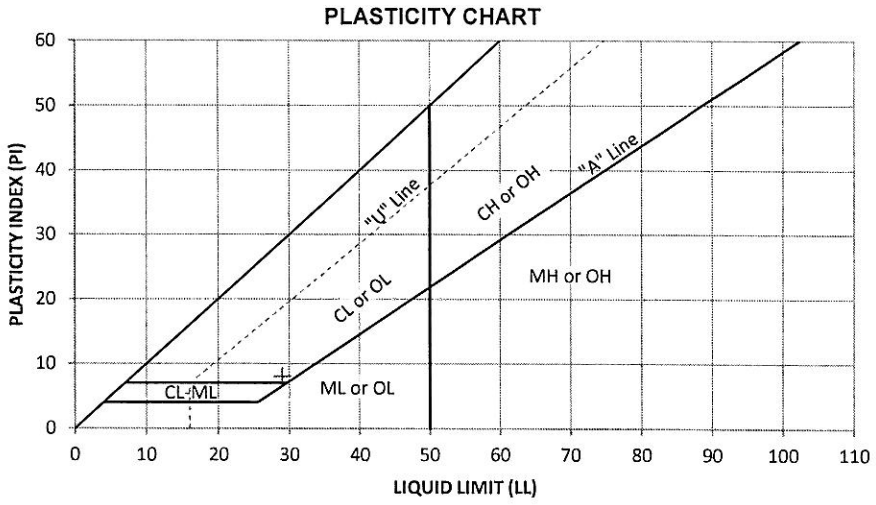
LIQUID LIMIT

Can No.	14	3	15
Wt. wet soil+can (g)	22.98	22.43	21.44
Wt. dry soil+can (g)	20.24	19.90	19.22
Wt. can (g)	11.26	11.23	11.27
Wt. mosture (g)	2.74	2.53	2.22
Wt. dry soil (g)	8.98	8.67	7.95
Water Content %	30.51	29.18	27.92
No. of Blows	15	25	36

PLASTIC LIMIT

101	109
58.25	58.32
56.94	57.20
51.08	51.55
1.31	1.12
5.86	5.65
22.35	19.82





Liquid Limit (LL) 29 Plastic Limit (PL) 21 Plasticity Index (PI) 8

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

AGS Form E-2

ATTERBERG LIMITS - ASTM D4318

Project Name: Oak Valley Town Center
Location: Calimesa
Project No: 2004-01
Date: 10/28/2020

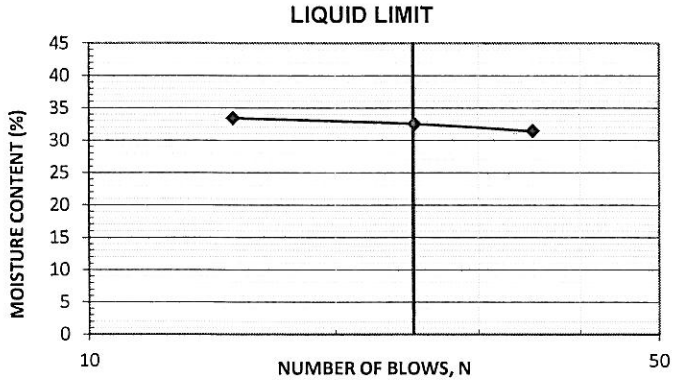
Excavation: AGS-16
Depth: 35 ft
Description: CL (Fine portion)
By: FV

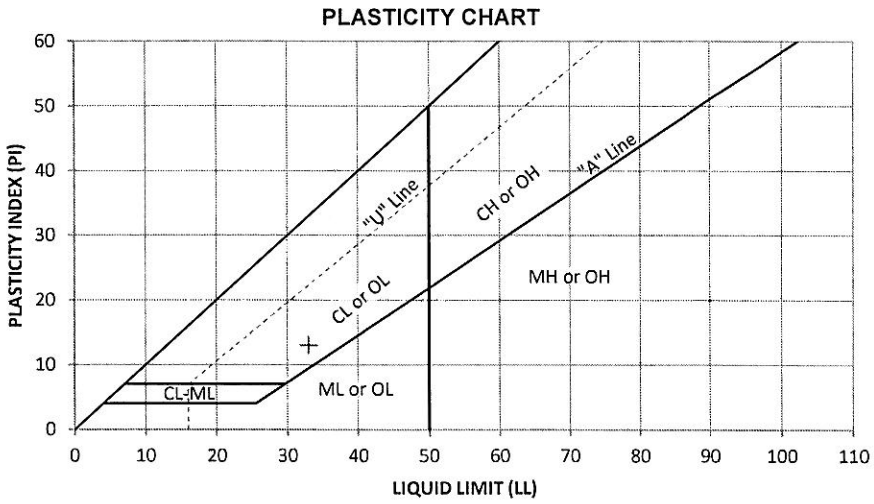
LIQUID LIMIT

Can No.	16	11	5
Wt. wet soil+can (g)	20.66	21.55	22.08
Wt. dry soil+can (g)	18.29	19.02	19.50
Wt. can (g)	11.20	11.25	11.29
Wt. mosture (g)	2.37	2.53	2.58
Wt. dry soil (g)	7.09	7.77	8.21
Water Content %	33.43	32.56	31.43
No. of Blows	15	25	35

PLASTIC LIMIT

106	111
57.80	57.64
56.66	56.63
51.34	51.42
1.14	1.01
5.32	5.21
21.43	19.39





Liquid Limit (LL) 33 Plastic Limit (PL) 20 Plasticity Index (PI) 13

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

AGS Form E-2

ATTERBERG LIMITS - ASTM D4318

Project Name: Oak Valley Town Center
Location: Calimesa
Project No: 2004-01
Date: 10/28/2020

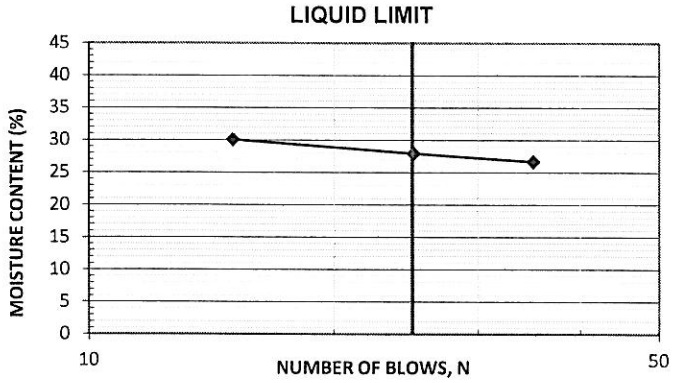
Excavation: AGS-16
Depth: 45 ft
Description: CL (Fine portion)
By: FV

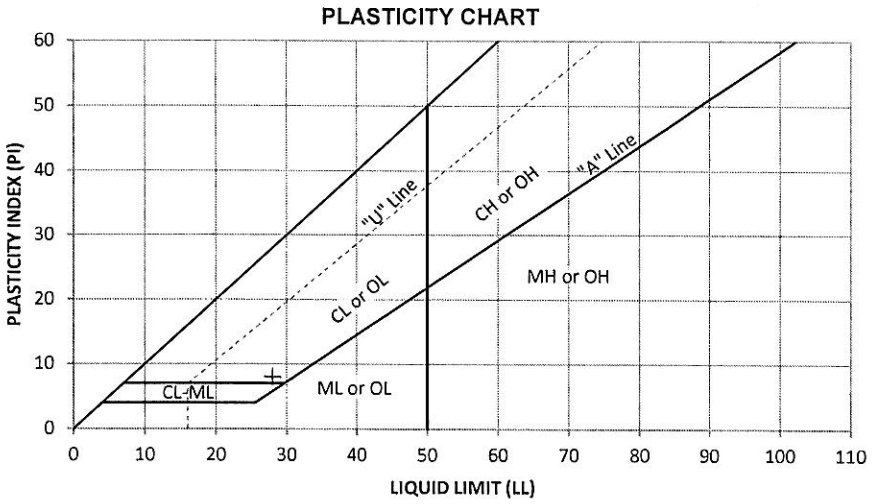
LIQUID LIMIT

Can No.	4	2	10
Wt. wet soil+can (g)	20.75	20.88	21.44
Wt. dry soil+can (g)	18.72	18.75	19.06
Wt. can (g)	11.11	11.13	11.15
Wt. mosture (g)	2.03	2.13	2.38
Wt. dry soil (g)	7.61	7.62	7.91
Water Content %	26.68	27.95	30.09
No. of Blows	35	25	15

PLASTIC LIMIT

100	103
58.69	58.58
57.45	57.40
51.53	51.47
1.24	1.18
5.92	5.93
20.95	19.90





Liquid Limit (LL) 28 Plastic Limit (PL) 20 Plasticity Index (PI) 8

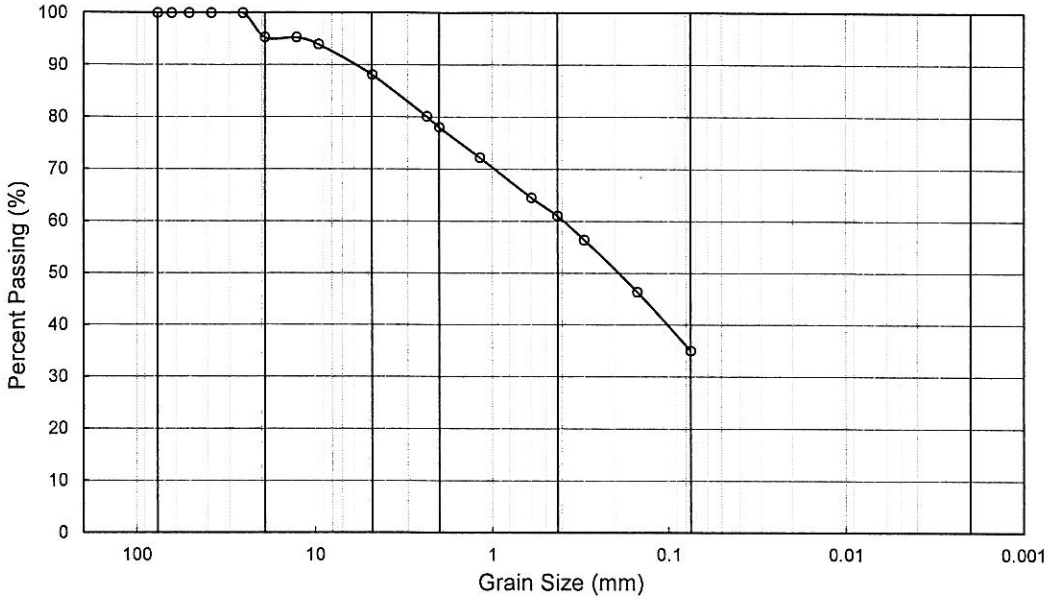
ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

AGS FORM E-7

Project Name: Oak Valley Town Center
Location: Calimesa
Project No.: 2004-01
Date: 05-2020

Excavation: T-5
Depth: 4 ft
Tested by: FV
Checked by: JC



COBBLE	GRAVEL		SAND			SILT	CLAY
	Coarse	Fine	Coarse	Medium	Fine		

Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	100
2 1/2 "	63.50	100
2 "	50.80	100
1 1/2 "	38.10	100
1 "	25.40	100
3/4 "	19.05	95
1/2 "	12.70	95
3/8 "	9.53	94
# 4	4.75	88.1
# 8	2.36	80.1
#10	2.00	78.1
#16	1.18	72.3
# 30	0.60	64.5
# 40	0.425	61.0
# 50	0.30	56.4
# 100	0.15	46.4
# 200	0.075	35.0

Summary	
% Gravel =	11.9
% Sand =	53.1
% Fines =	35.0
Sum =	100.0

LL= n/a
PL= n/a
PI = n/a

Soil Type: SC-SM

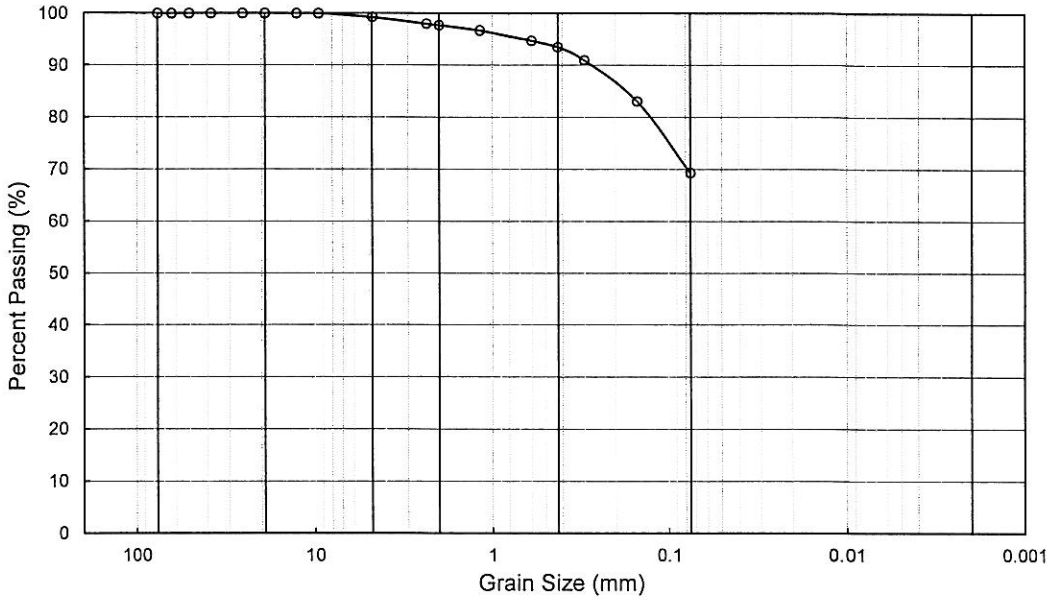
ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

AGS FORM E-7

Project Name: Oak Valley Town Center
Location: Calimesa
Project No.: 2004-01
Date: 05-2020

Excavation: T-10
Depth: 12 ft
Tested by: FV
Checked by: JC



COBBLE	GRAVEL		SAND			SILT	CLAY
	Coarse	Fine	Coarse	Medium	Fine		

Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	100
2 1/2 "	63.50	100
2 "	50.80	100
1 1/2 "	38.10	100
1 "	25.40	100
3/4 "	19.05	100
1/2 "	12.70	100
3/8 "	9.53	100
# 4	4.75	99.3
# 8	2.36	98.0
#10	2.00	97.7
#16	1.18	96.7
# 30	0.60	94.7
# 40	0.425	93.5
# 50	0.30	91.0
# 100	0.15	83.1
# 200	0.075	69.3

Summary	
% Gravel =	0.7
% Sand =	30.0
% Fines =	69.3
Sum =	100.0

LL= n/a
PL= n/a
PI = n/a

Soil Type: SC-SM

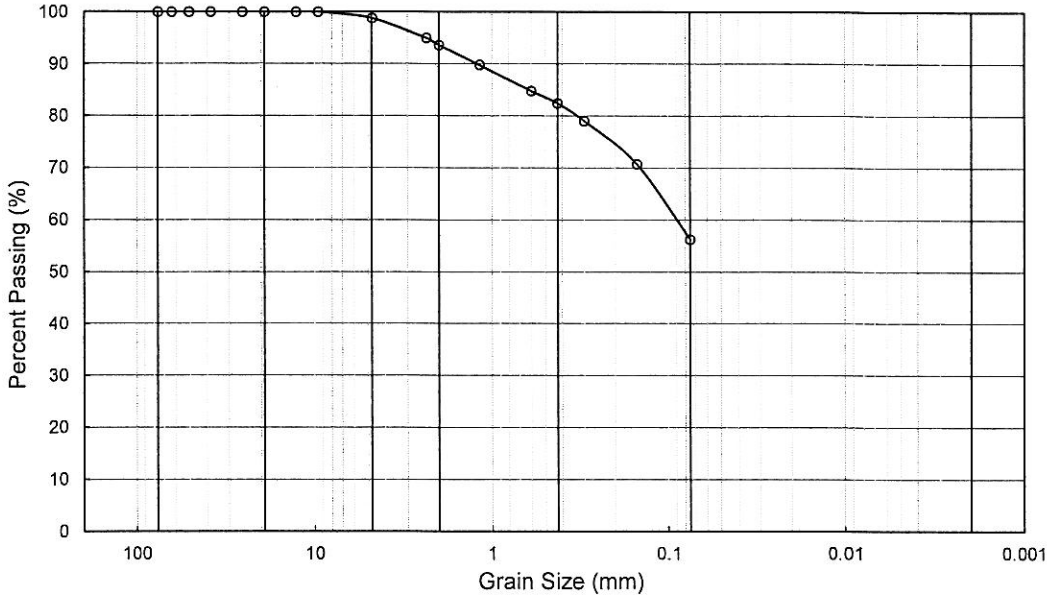
ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

AGS FORM E-7

Project Name: Oak Valley Town Center
Location: Calimesa
Project No.: 2004-01
Date: 05-2020

Excavation: T-11
Depth: 7.5 ft
Tested by: FV
Checked by: JC



COBBLE	GRAVEL		SAND			SILT	CLAY
	Coarse	Fine	Coarse	Medium	Fine		

Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	100
2 1/2 "	63.50	100
2 "	50.80	100
1 1/2 "	38.10	100
1 "	25.40	100
3/4 "	19.05	100
1/2 "	12.70	100
3/8 "	9.53	100
# 4	4.75	98.8
# 8	2.36	95.0
#10	2.00	93.6
#16	1.18	89.8
# 30	0.60	84.8
# 40	0.425	82.4
# 50	0.30	79.1
# 100	0.15	70.7
# 200	0.075	56.3

Summary	
% Gravel =	1.2
% Sand =	42.5
% Fines =	56.3
Sum =	100.0

LL= n/a
PL= n/a
PI = n/a

Soil Type: CL-ML

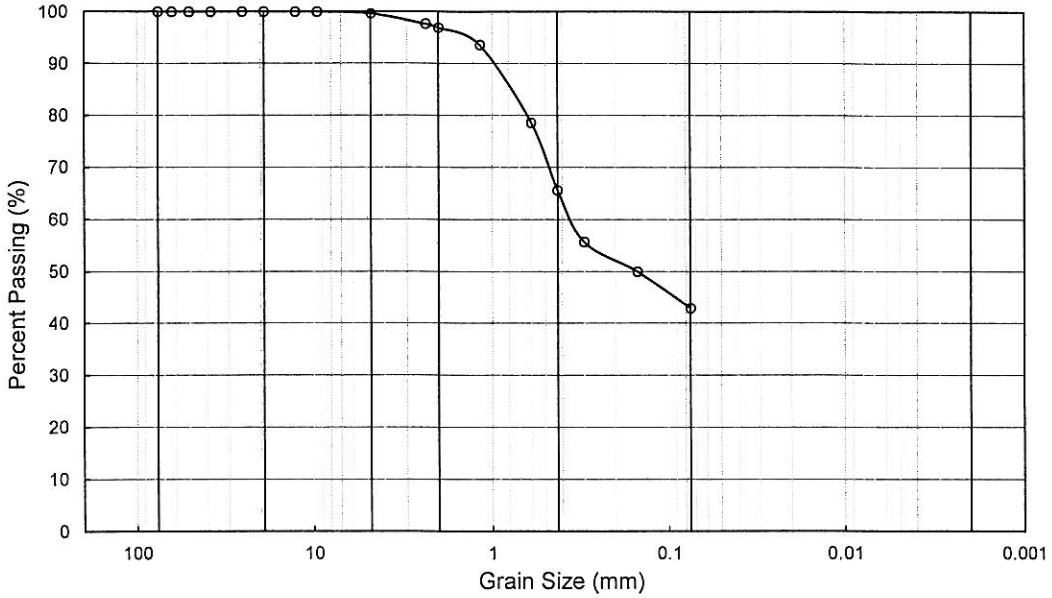
ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

AGS FORM E-7

Project Name: Oak Valley Town Center
Location: Calimesa
Project No.: 2004-01
Date: 05-2020

Excavation: T-17
Depth: 13-14 ft
Tested by: FV
Checked by: JC



COBBLE	GRAVEL		SAND			SILT	CLAY
	Coarse	Fine	Coarse	Medium	Fine		

Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	100
2 1/2 "	63.50	100
2 "	50.80	100
1 1/2 "	38.10	100
1 "	25.40	100
3/4 "	19.05	100
1/2 "	12.70	100
3/8 "	9.53	100
# 4	4.75	99.6
# 8	2.36	97.6
#10	2.00	96.9
#16	1.18	93.6
# 30	0.60	78.6
# 40	0.425	65.6
# 50	0.30	55.7
# 100	0.15	50.0
# 200	0.075	42.8

Summary	
% Gravel =	0.4
% Sand =	56.8
% Fines =	42.8
Sum =	100.0

LL= n/a
PL= n/a
PI = n/a

Soil Type: SC-SM

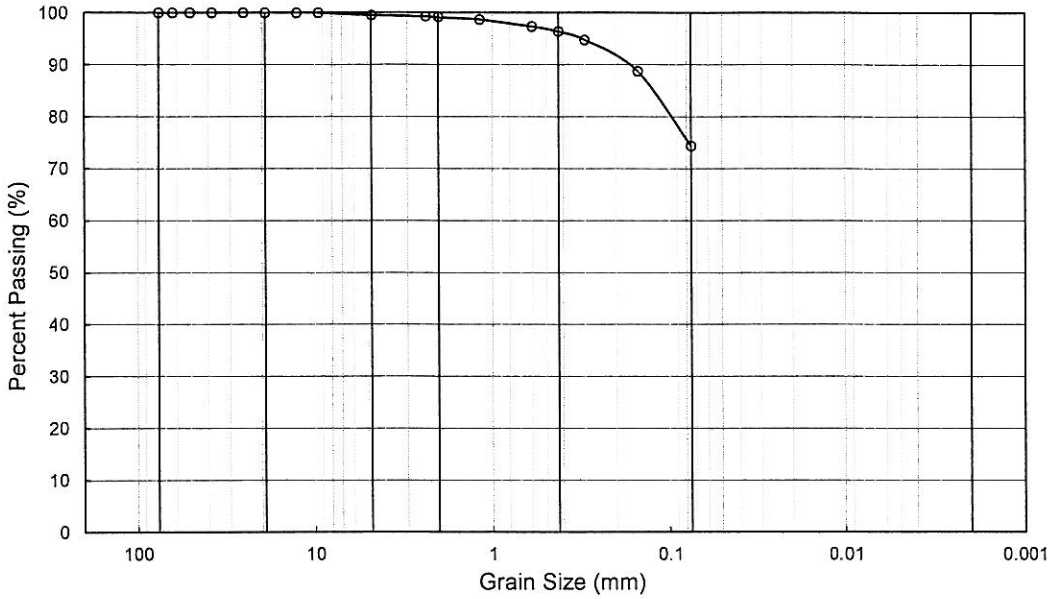
ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

AGS FORM E-7

Project Name: Oak Valley Town Center
Location: Calimesa
Project No.: 2004-01
Date: 09-2020

Excavation: AGS-3
Depth: 10 ft
Tested by: FV
Checked by: SS



COBBLE	GRAVEL		SAND			SILT	CLAY
	Coarse	Fine	Coarse	Medium	Fine		

Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	100
2 1/2 "	63.50	100
2 "	50.80	100
1 1/2 "	38.10	100
1 "	25.40	100
3/4 "	19.05	100
1/2 "	12.70	100
3/8 "	9.53	100
# 4	4.75	99.5
# 8	2.36	99.3
#10	2.00	99.2
#16	1.18	98.7
# 30	0.60	97.4
# 40	0.425	96.4
# 50	0.30	94.8
# 100	0.15	88.8
# 200	0.075	74.3

Summary	
% Gravel =	0.5
% Sand =	25.2
% Fines =	74.3
Sum =	100.0

LL= n/a
PL= n/a
PI = n/a

Soil Type: ML-CL

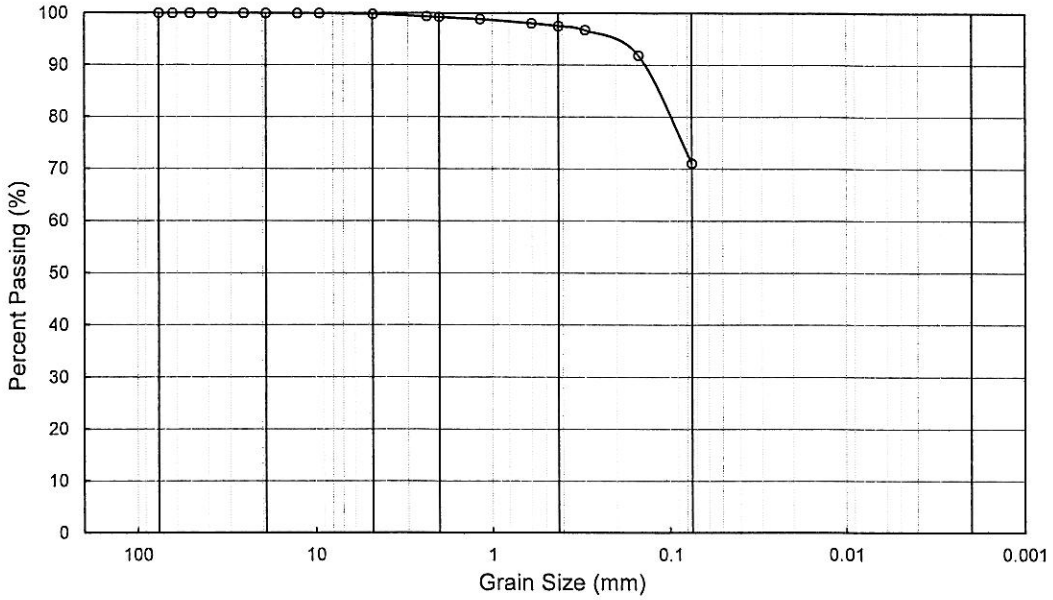
ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

AGS FORM E-7

Project Name: Oak Valley Town Center
Location: Calimesa
Project No.: 2004-01
Date: 09-2020

Excavation: AGS-3
Depth: 20 ft
Tested by: FV
Checked by: SS



COBBLE	GRAVEL		SAND			SILT	CLAY
	Coarse	Fine	Coarse	Medium	Fine		

Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	100
2 1/2 "	63.50	100
2 "	50.80	100
1 1/2 "	38.10	100
1 "	25.40	100
3/4 "	19.05	100
1/2 "	12.70	100
3/8 "	9.53	100
# 4	4.75	99.8
# 8	2.36	99.4
#10	2.00	99.3
#16	1.18	98.9
# 30	0.60	98.1
# 40	0.425	97.5
# 50	0.30	96.8
# 100	0.15	91.9
# 200	0.075	71.1

Summary	
% Gravel =	0.2
% Sand =	28.7
% Fines =	71.1
Sum =	100.0

LL= 46
PL= 29
PI = 17

Soil Type: ML

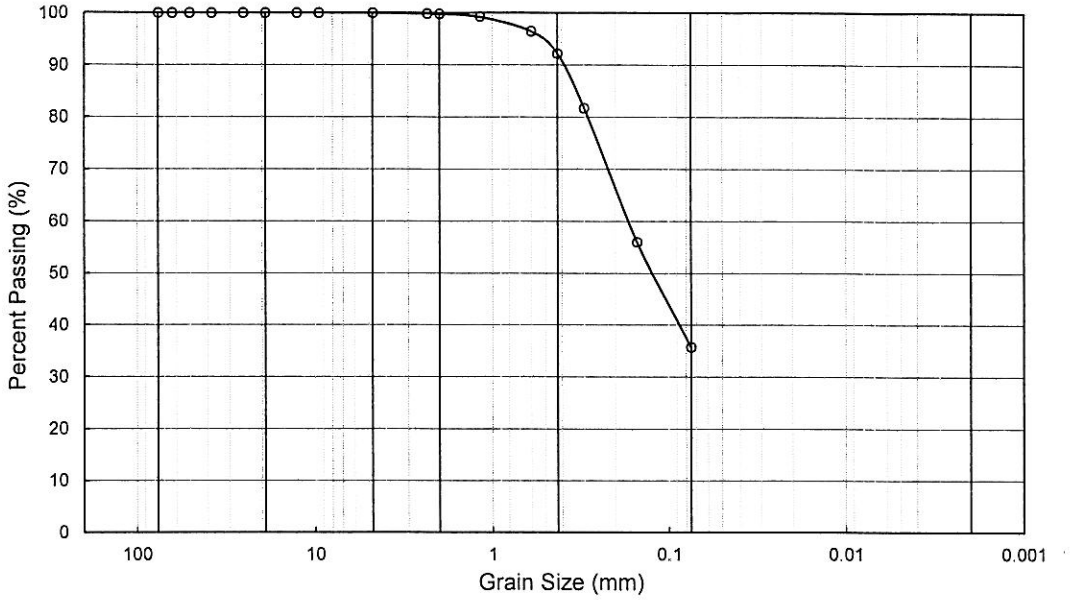
ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

AGS FORM E-7

Project Name: Oak Valley Town Center
Location: Calimesa
Project No.: 2004-01
Date: 09-2020

Excavation: AGS-3
Depth: 30 ft
Tested by: FV
Checked by: SS



COBBLE	GRAVEL		SAND			SILT	CLAY
	Coarse	Fine	Coarse	Medium	Fine		

Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	100
2 1/2 "	63.50	100
2 "	50.80	100
1 1/2 "	38.10	100
1 "	25.40	100
3/4 "	19.05	100
1/2 "	12.70	100
3/8 "	9.53	100
# 4	4.75	100.0
# 8	2.36	99.9
#10	2.00	99.8
#16	1.18	99.3
# 30	0.60	96.5
# 40	0.425	92.2
# 50	0.30	81.7
# 100	0.15	55.9
# 200	0.075	35.7

Summary	
% Gravel =	0.0
% Sand =	64.3
% Fines =	35.7
Sum =	100.0

LL= 31.5
PL= 21.5
PI = 10

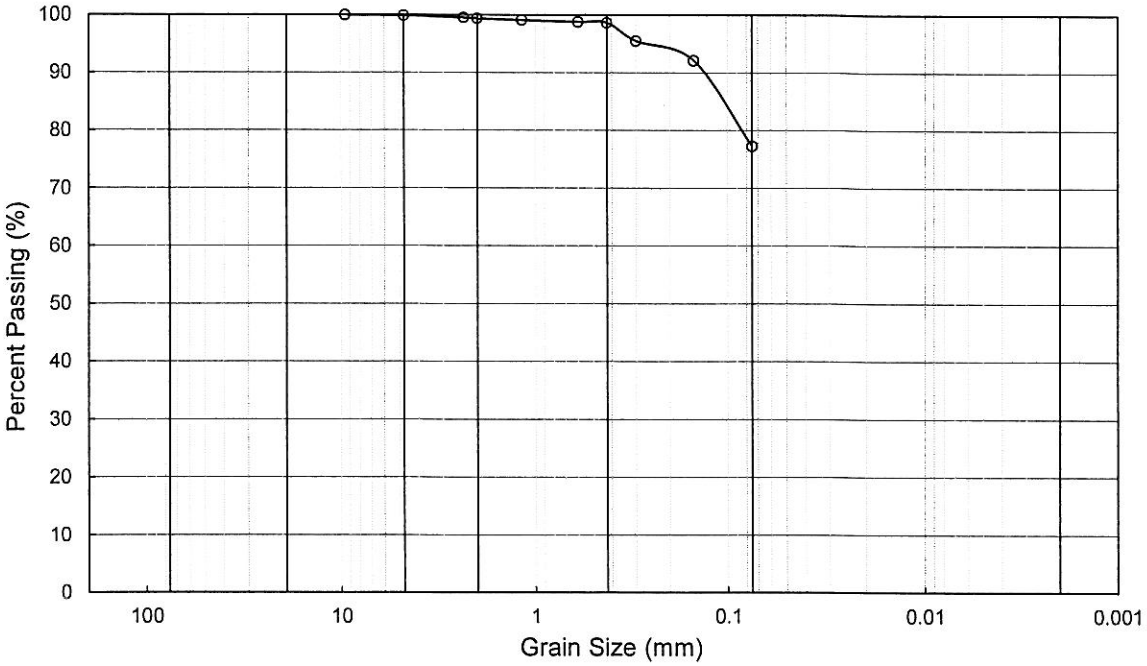
Soil Type: SC-SM

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

AGS FORM E-7

Project Name:	Oak Valley town Center	Excavation:	AGS-3
Location:	Calimesa	Depth:	35 ft
Project No.:	2004-01	Tested by:	FV
Date:	10-2020	Checked by:	AB



COBBLE	GRAVEL		SAND			SILT	CLAY
	Coarse	Fine	Coarse	Medium	Fine		

Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	
2 1/2 "	63.50	
2 "	50.80	
1 1/2 "	38.10	
1 "	25.40	
3/4 "	19.05	
1/2 "	12.70	
3/8 "	9.53	100
# 4	4.75	99.9
# 8	2.36	99.6
#10	2.00	99.4
#16	1.18	99.1
# 30	0.60	98.8
# 40	0.425	98.7
# 50	0.30	95.5
# 100	0.15	92.2
# 200	0.075	77.3

Summary	
% Gravel =	0.1
% Sand =	22.6
% Fines =	77.3
Sum =	100.0

LL=	35
PL=	28
PI =	7

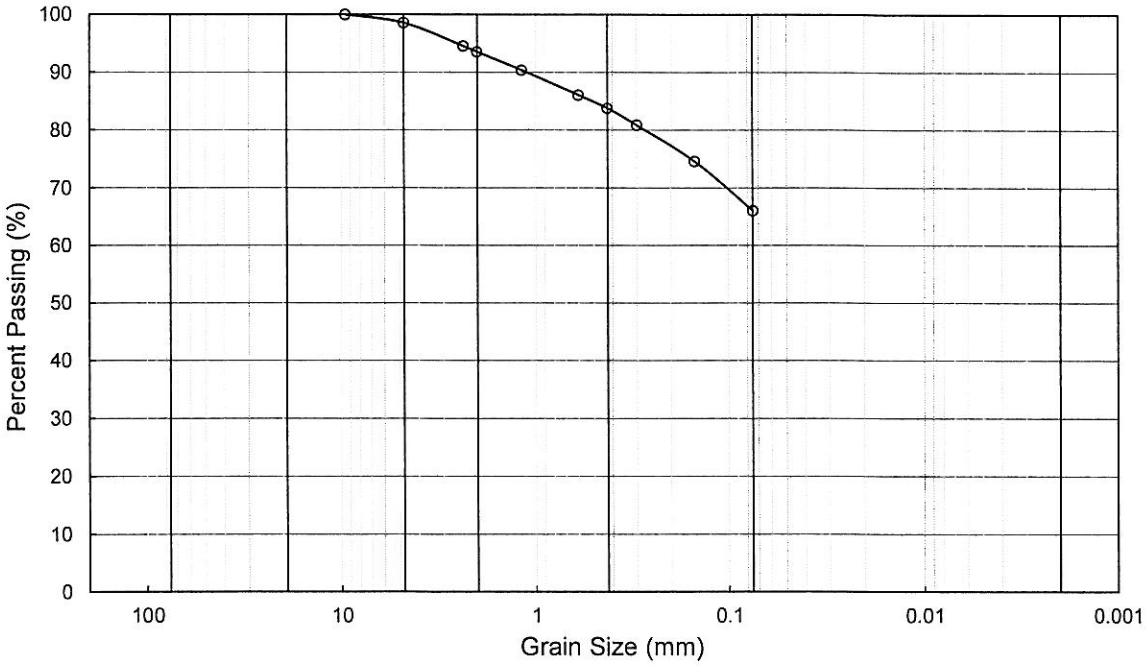
Soil Type: ML

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

AGS FORM E-7

Project Name:	Oak Valley Town Center	Excavation:	AGS-3
Location:	Calimesa	Depth:	40 ft
Project No.:	2004-01	Tested by:	FV
Date:	10-2020	Checked by:	AB



COBBLE	GRAVEL		SAND			SILT	CLAY
	Coarse	Fine	Coarse	Medium	Fine		

Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	
2 1/2 "	63.50	
2 "	50.80	
1 1/2 "	38.10	
1 "	25.40	
3/4 "	19.05	
1/2 "	12.70	
3/8 "	9.53	100
# 4	4.75	98.6
# 8	2.36	94.6
#10	2.00	93.6
#16	1.18	90.4
# 30	0.60	86.1
# 40	0.425	83.8
# 50	0.30	80.9
# 100	0.15	74.6
# 200	0.075	66.1

Summary	
% Gravel =	1.4
% Sand =	32.4
% Fines =	66.1
Sum =	100.0

LL=	43
PL=	21
PI =	22

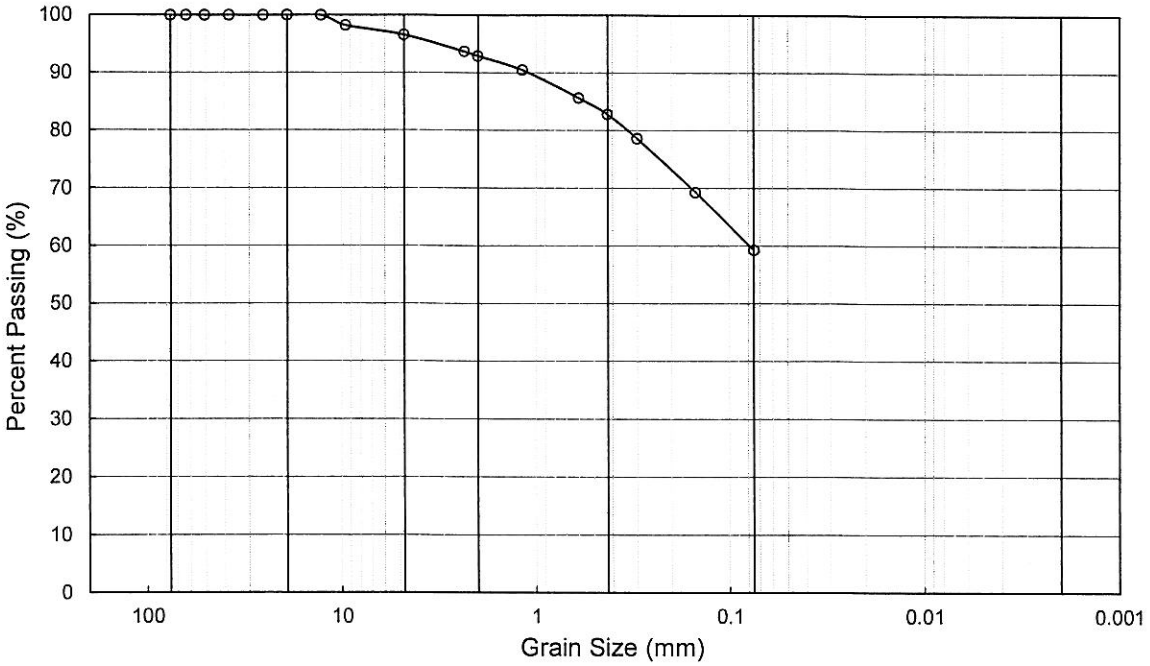
Soil Type: CL

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

AGS FORM E-7

Project Name:	Oak Valley Town Center	Excavation:	AGS-3
Location:	Calimesa	Depth:	50 ft
Project No.:	2004-01	Tested by:	FV
Date:	09-2020	Checked by:	SS



COBBLE	GRAVEL		SAND			SILT	CLAY
	Coarse	Fine	Coarse	Medium	Fine		

Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	100
2 1/2 "	63.50	100
2 "	50.80	100
1 1/2 "	38.10	100
1 "	25.40	100
3/4 "	19.05	100
1/2 "	12.70	100
3/8 "	9.53	98
# 4	4.75	96.6
# 8	2.36	93.7
#10	2.00	92.9
#16	1.18	90.5
# 30	0.60	85.6
# 40	0.425	82.8
# 50	0.30	78.7
# 100	0.15	69.3
# 200	0.075	59.3

Summary	
% Gravel =	3.4
% Sand =	37.3
% Fines =	59.3
Sum =	100.0

LL=	n/a
PL=	n/a
PI =	n/a

Soil Type: ML

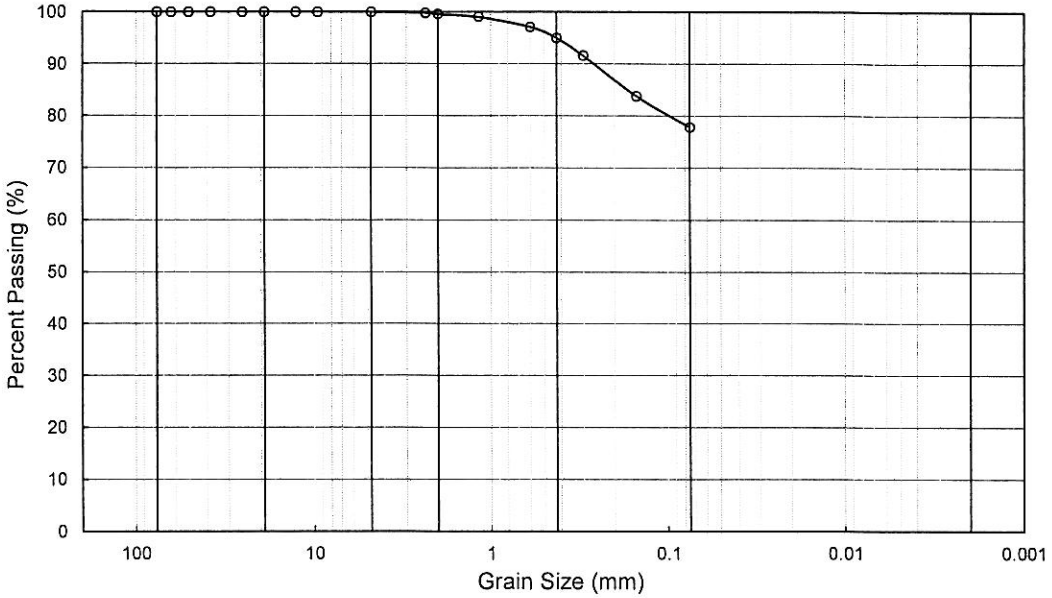
ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

AGS FORM E-7

Project Name: Oak Valley Town Center
Location: Calimesa
Project No.: 2004-01
Date: 09-2020

Excavation: AGS-16
Depth: 15 ft
Tested by: FV
Checked by: SS



COBBLE	GRAVEL		SAND			SILT	CLAY
	Coarse	Fine	Coarse	Medium	Fine		

Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	100
2 1/2 "	63.50	100
2 "	50.80	100
1 1/2 "	38.10	100
1 "	25.40	100
3/4 "	19.05	100
1/2 "	12.70	100
3/8 "	9.53	100
# 4	4.75	100.0
# 8	2.36	99.8
#10	2.00	99.6
#16	1.18	99.1
# 30	0.60	97.1
# 40	0.425	95.0
# 50	0.30	91.6
# 100	0.15	83.8
# 200	0.075	77.9

Summary	
% Gravel =	0.0
% Sand =	22.1
% Fines =	77.9
Sum =	100.0

LL= n/a
PL= n/a
PI = n/a

Soil Type: ML-CL

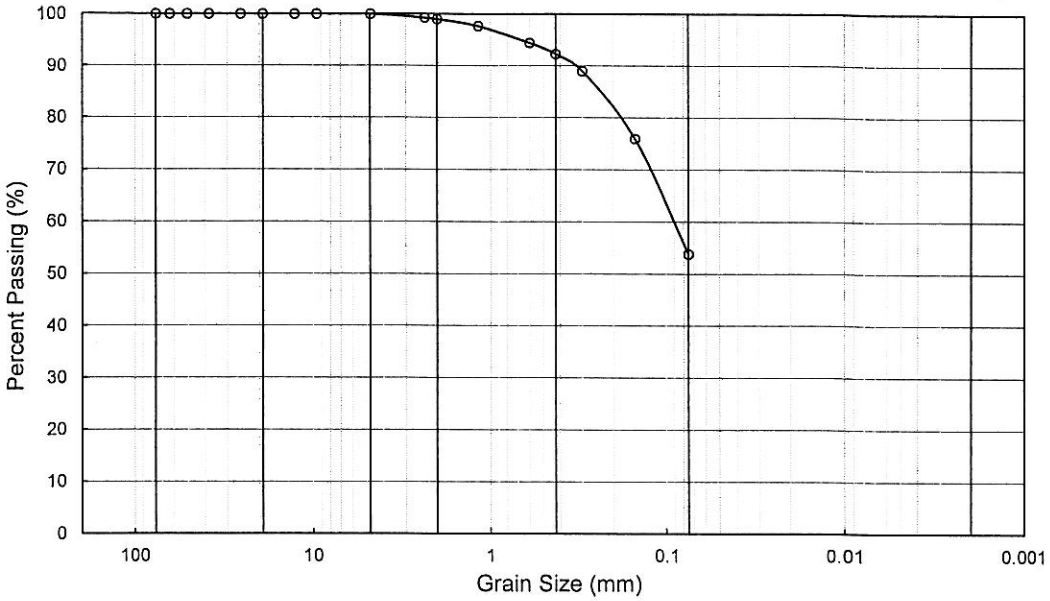
ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

AGS FORM E-7

Project Name: Oak Valley Town Center
Location: Calimesa
Project No.: 2004-01
Date: 09-2020

Excavation: AGS-16
Depth: 25 ft
Tested by: FV
Checked by: SS



COBBLE	GRAVEL		SAND			SILT	CLAY
	Coarse	Fine	Coarse	Medium	Fine		

Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	100
2 1/2 "	63.50	100
2 "	50.80	100
1 1/2 "	38.10	100
1 "	25.40	100
3/4 "	19.05	100
1/2 "	12.70	100
3/8 "	9.53	100
# 4	4.75	100.0
# 8	2.36	99.3
#10	2.00	99.0
#16	1.18	97.7
# 30	0.60	94.4
# 40	0.425	92.3
# 50	0.30	89.0
# 100	0.15	75.9
# 200	0.075	53.8

Summary	
% Gravel =	0.0
% Sand =	46.2
% Fines =	53.8
Sum =	100.0

LL= 43
PL= 23
PI = 20

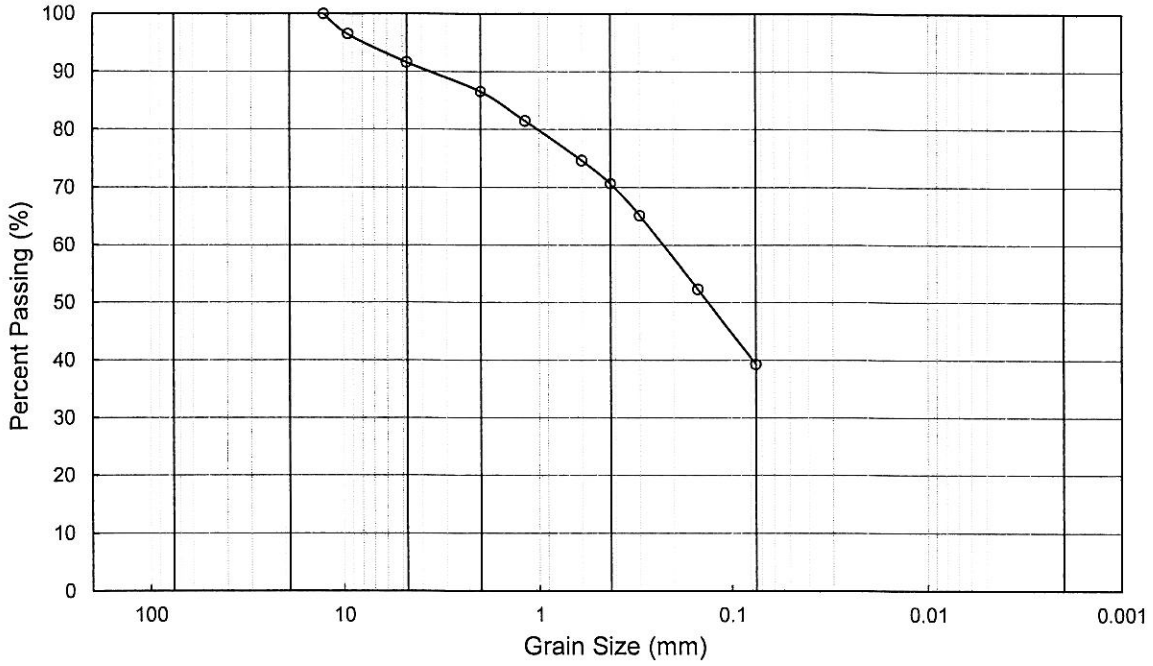
Soil Type: CL

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

AGS FORM E-7

Project Name:	Oak Valley Town Center	Excavation:	AGS-16
Location:	Calimesa	Depth:	30 ft
Project No.:	2004-01	Tested by:	FV
Date:	10-2020	Checked by:	AB



COBBLE	GRAVEL		SAND			SILT	CLAY
	Coarse	Fine	Coarse	Medium	Fine		

Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	
2 1/2 "	63.50	
2 "	50.80	
1 1/2 "	38.10	
1 "	25.40	
3/4 "	19.05	
1/2 "	12.70	100
3/8 "	9.53	97
# 4	4.75	91.6
#10	2.00	86.6
#16	1.18	81.5
# 30	0.60	74.7
# 40	0.425	70.6
# 50	0.30	65.1
# 100	0.15	52.3
# 200	0.075	39.3

Summary	
% Gravel =	8.4
% Sand =	52.4
% Fines =	39.3
Sum =	100.0

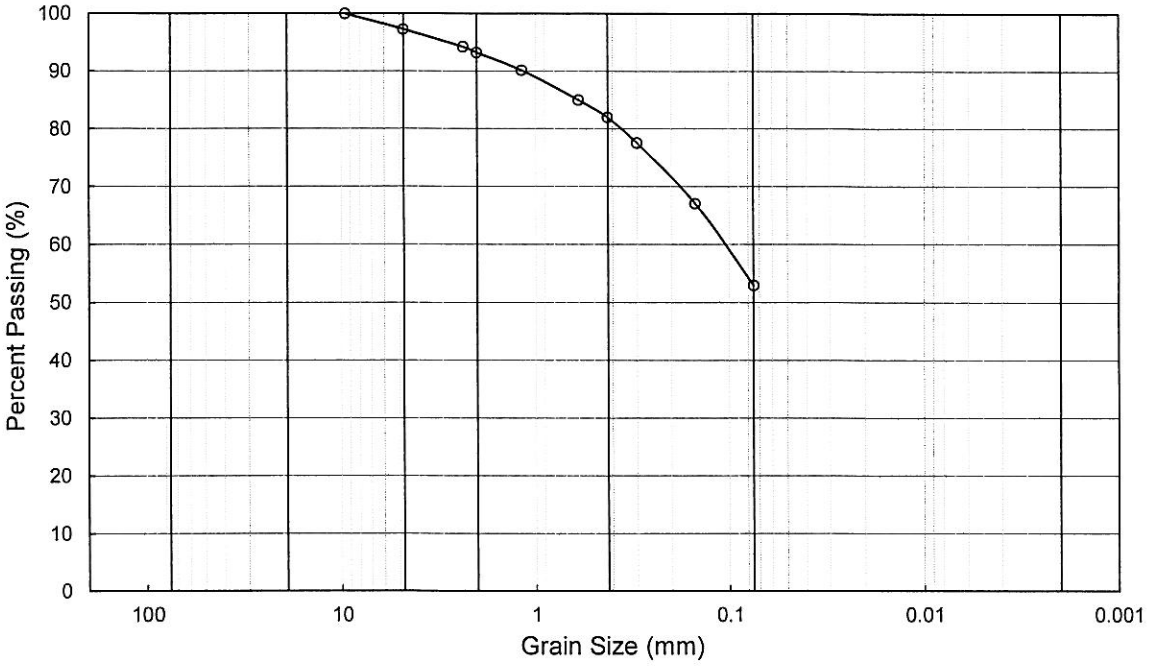
LL=	29
PL=	21
PI =	8
Soil Type:	SC

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

AGS FORM E-7

Project Name:	Oak Valley Town Center	Excavation:	AGS-16
Location:	Calimesa	Depth:	35 ft
Project No.:	2004-01	Tested by:	FV
Date:	10-2020	Checked by:	AB



COBBLE	GRAVEL		SAND			SILT	CLAY
	Coarse	Fine	Coarse	Medium	Fine		

Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	
2 1/2 "	63.50	
2 "	50.80	
1 1/2 "	38.10	
1 "	25.40	
3/4 "	19.05	
1/2 "	12.70	
3/8 "	9.53	100
# 4	4.75	97.3
# 8	2.36	94.3
#10	2.00	93.2
#16	1.18	90.2
# 30	0.60	85.0
# 40	0.425	82.0
# 50	0.30	77.6
# 100	0.15	67.1
# 200	0.075	52.9

Summary	
% Gravel =	2.7
% Sand =	44.3
% Fines =	52.9
Sum =	100.0

LL=	33
PL=	20
PI =	13

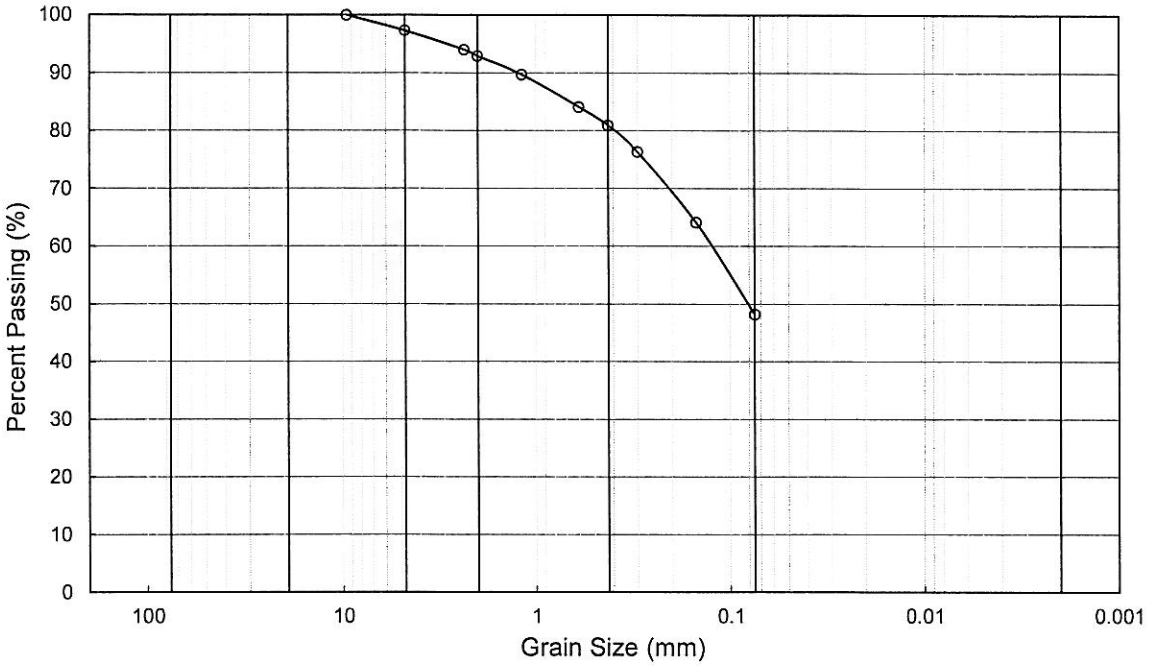
Soil Type: SC-CL

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

AGS FORM E-7

Project Name:	Oak Valley Town Center	Excavation:	AGS-16
Location:	Calimesa	Depth:	45 ft
Project No.:	2004-01	Tested by:	FV
Date:	10-2020	Checked by:	AB



COBBLE	GRAVEL		SAND			SILT	CLAY
	Coarse	Fine	Coarse	Medium	Fine		

Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	
2 1/2 "	63.50	
2 "	50.80	
1 1/2 "	38.10	
1 "	25.40	
3/4 "	19.05	
1/2 "	12.70	
3/8 "	9.53	100
# 4	4.75	97.3
# 8	2.36	94.0
#10	2.00	92.9
#16	1.18	89.7
# 30	0.60	84.1
# 40	0.425	81.0
# 50	0.30	76.4
# 100	0.15	64.1
# 200	0.075	48.2

Summary	
% Gravel =	2.7
% Sand =	49.1
% Fines =	48.2
Sum =	100.0

LL=	28
PL=	20
PI =	8

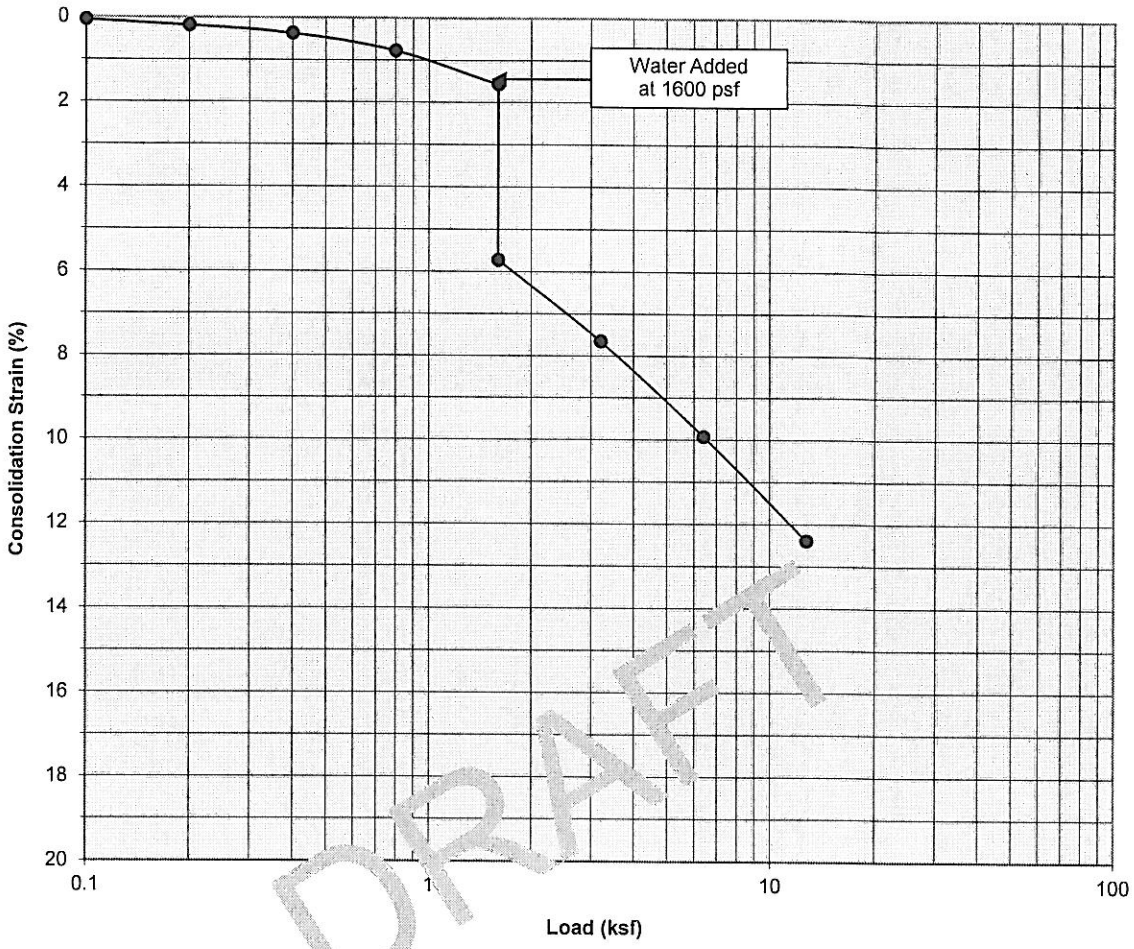
Soil Type: SC-CL

APPENDIX C-3

Laboratory Testing

SGC, 2020

Consolidation/Collapse Test Results



Classification: Older Alluvium: Light Red Brown Silty fine to coarse Sand

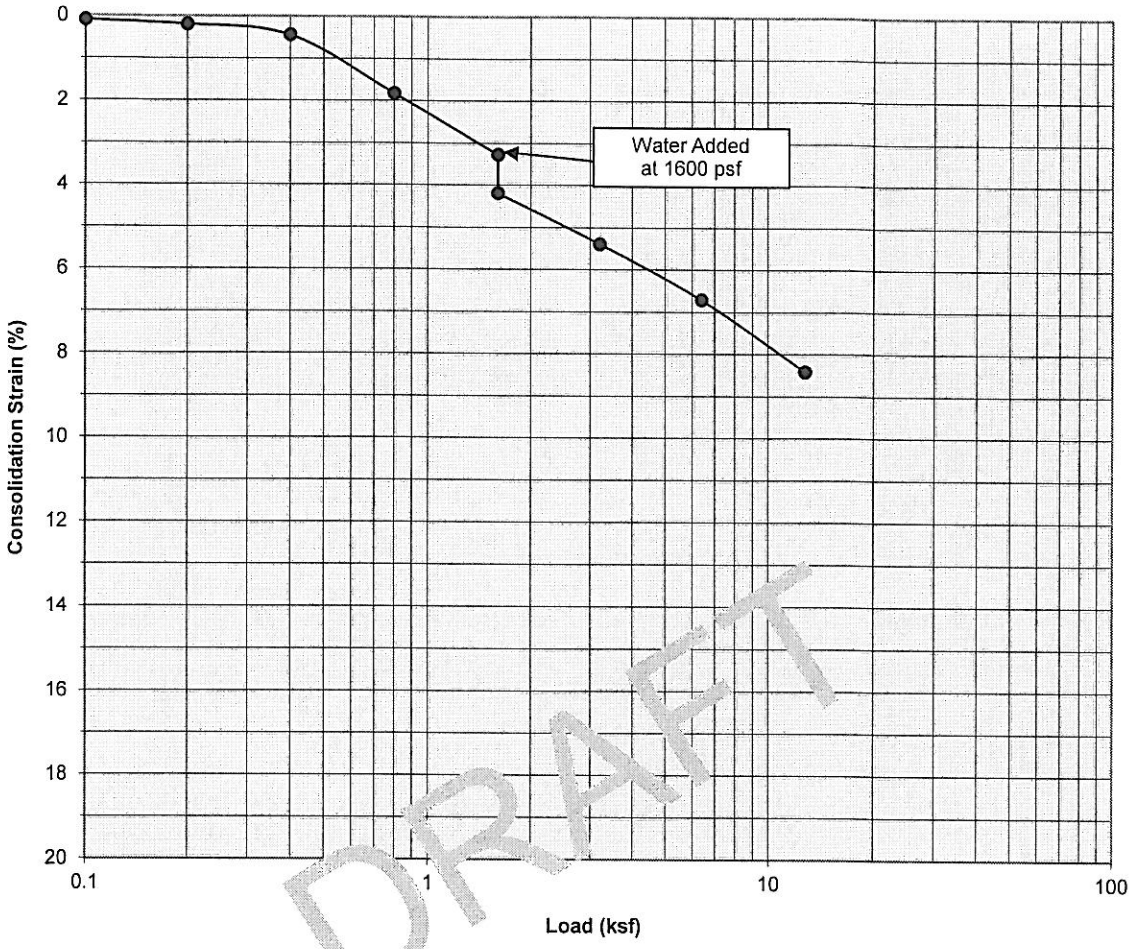
Boring Number:	SCG-1	Initial Moisture Content (%)	3
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	13.5 to 14.5	Initial Dry Density (pcf)	111.8
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	127.8
Specimen Thickness (in)	1.0	Percent Collapse (%)	4.15

Proposed Commerical/Industrial Development
Calimesa, California
Project No. 20G144-1

PLATE C- 1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Alluvium: Red Brown Silty fine Sand, trace medium to coarse Sand

Boring Number:	SCG-2	Initial Moisture Content (%)	9
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	8.5 to 9.5	Initial Dry Density (pcf)	121.1
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	130.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.92

Proposed Commerical/Industrial Development
Calimesa, California
Project No. 20G144-1

PLATE C- 2

SoCalGeo
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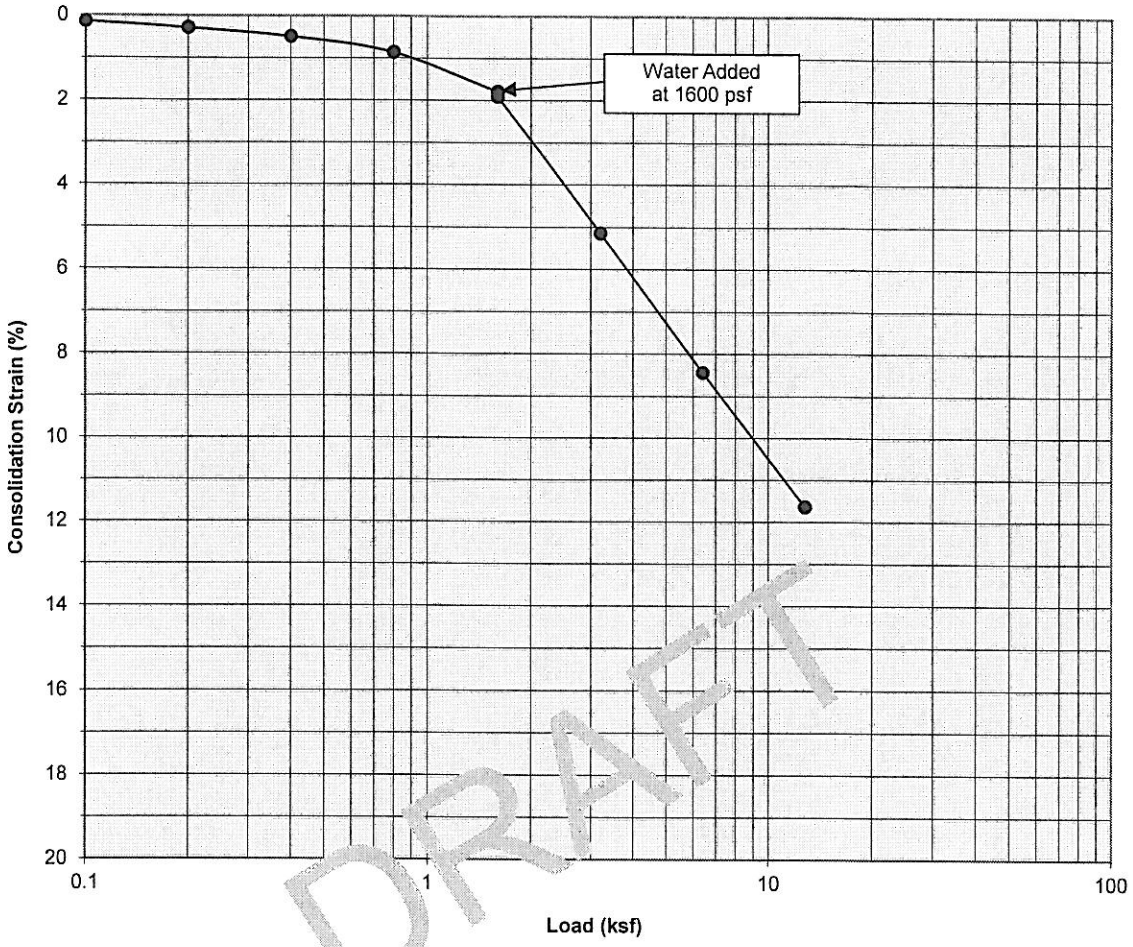
Consolidation/Collapse Test Results



Classification: Colluvium: Dark Gray Brown Silty fine to medium Sand

Boring Number:	SCG-3	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	3.5 to 4.5	Initial Dry Density (pcf)	99.5
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	110.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.12

Proposed Commerical/Industrial Development
Calimesa, California
Project No. 20G144-1

PLATE C- 3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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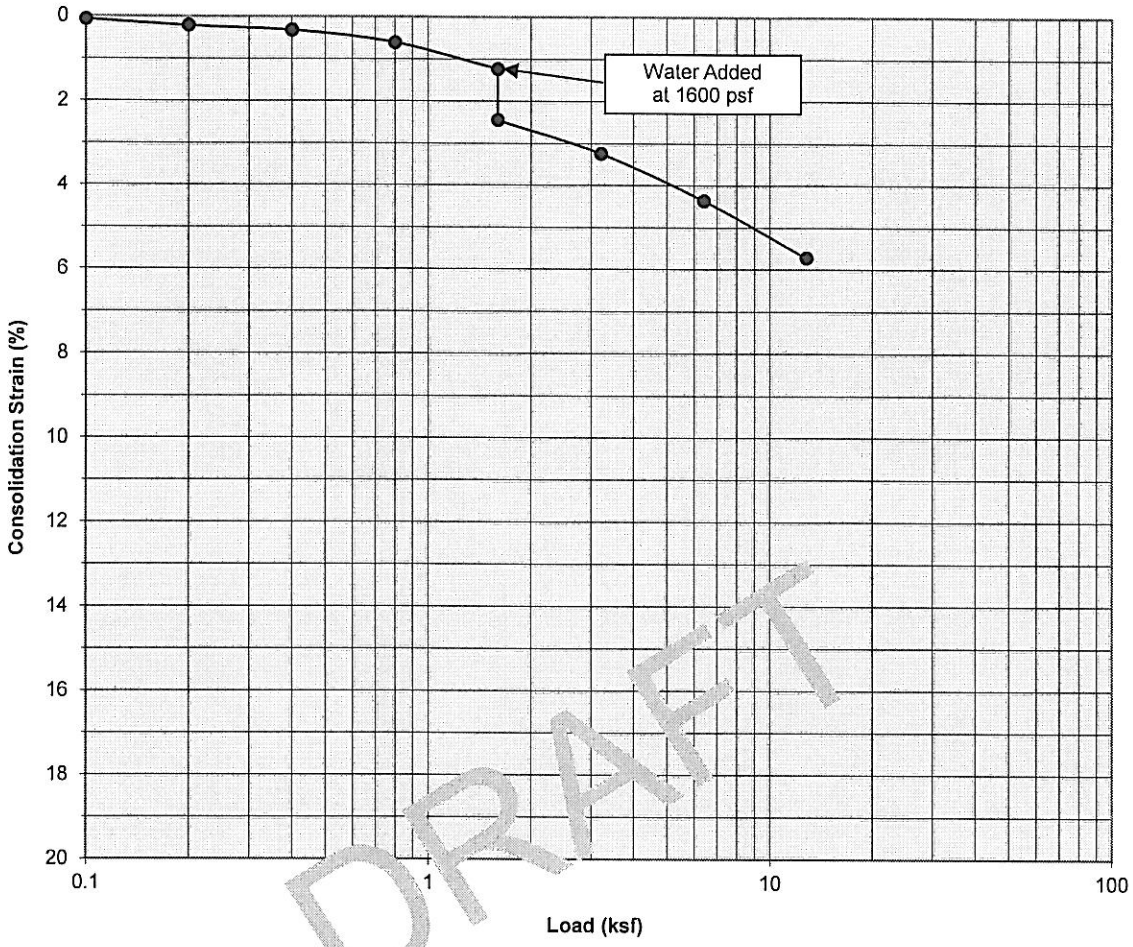
Consolidation/Collapse Test Results



Classification: Alluvium: Brown Silty fine Sand, trace medium to coarse Sand

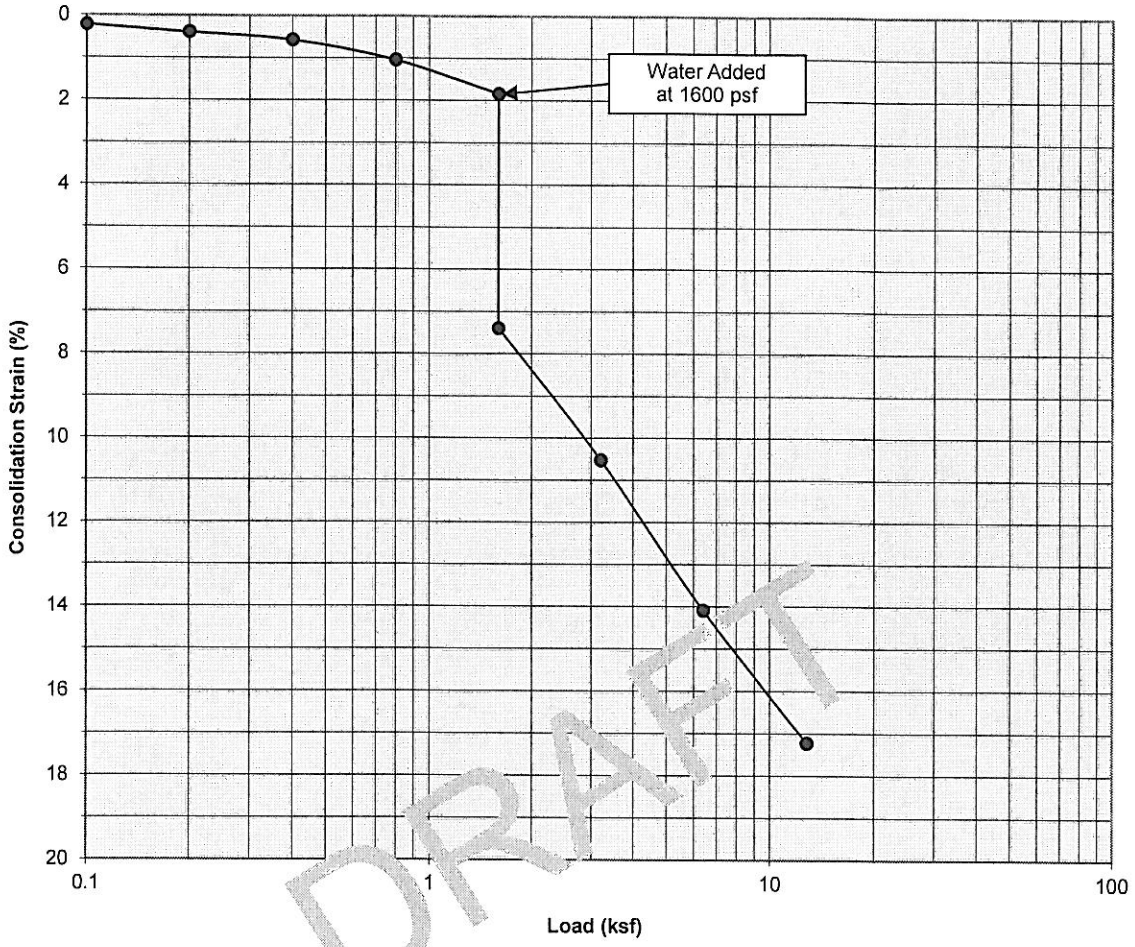
Boring Number:	SCG-3	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	13.5 to 14.5	Initial Dry Density (pcf)	125.8
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	133.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.21

Proposed Commerical/Industrial Development
Calimesa, California
Project No. 20G144-1

PLATE C- 4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Alluvium: Dark Gray Brown Silty fine to medium Sand

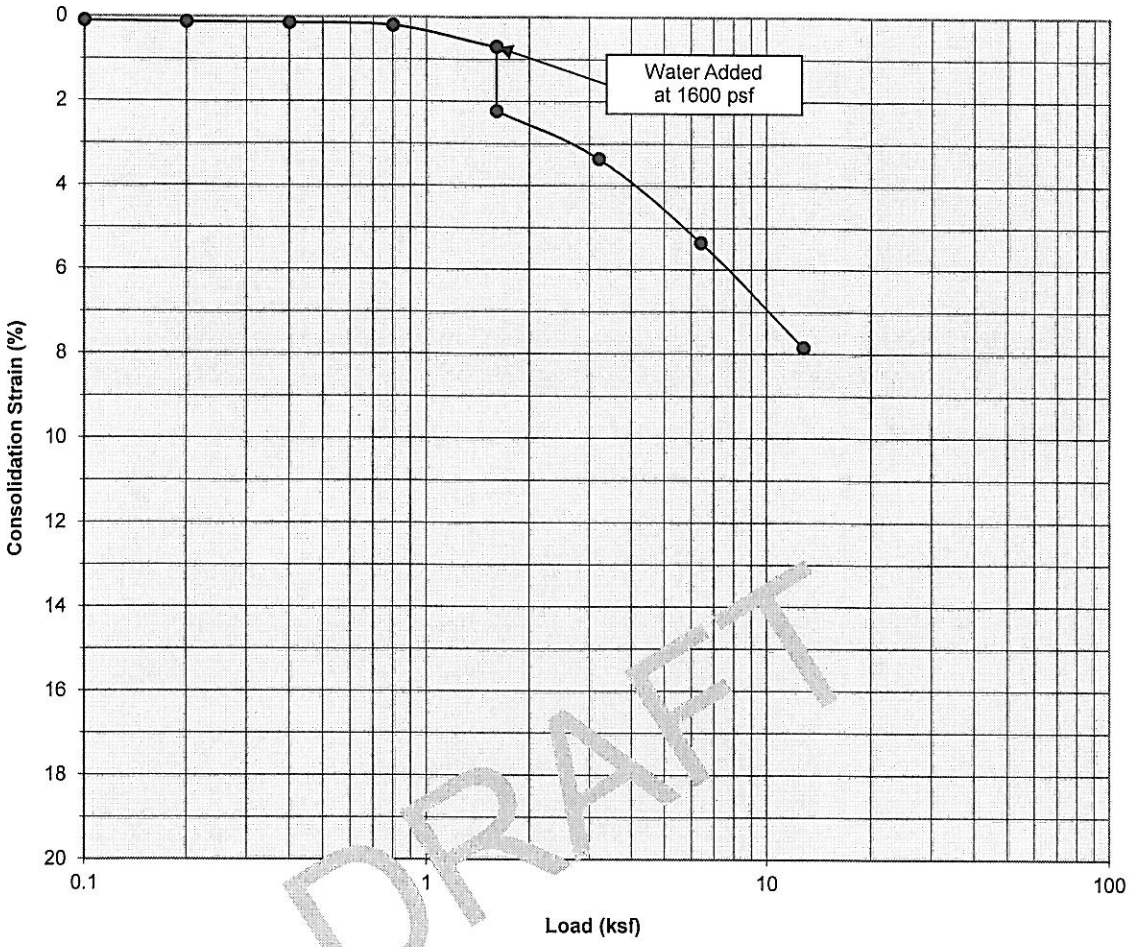
Boring Number:	SCG-4	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	3.5 to 4.5	Initial Dry Density (pcf)	102.1
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	124.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	5.56

Proposed Commerical/Industrial Development
Calimesa, California
Project No. 20G144-1

PLATE C- 5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Alluvium: Brown Silty fine Sand

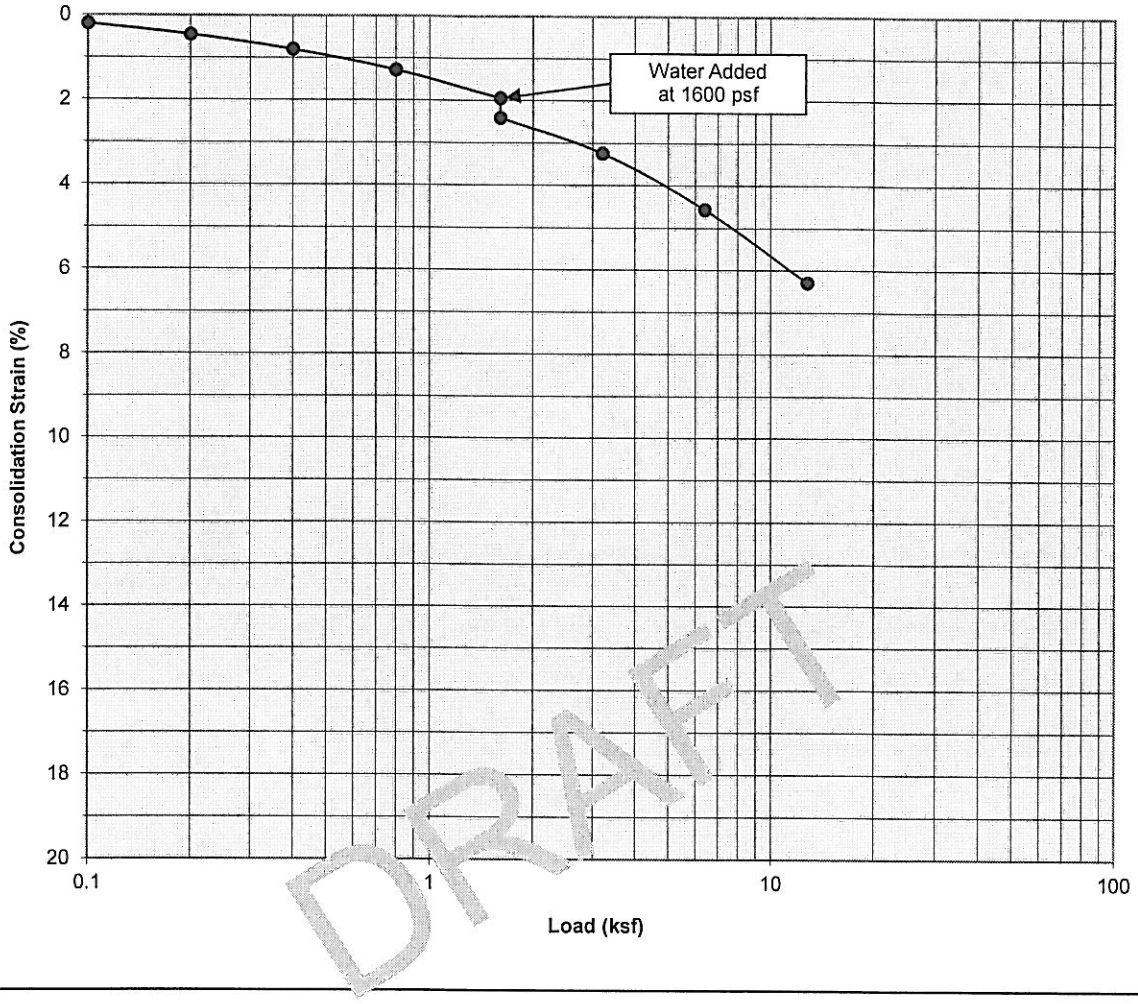
Boring Number:	SCG-4	Initial Moisture Content (%)	2
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	13.5 to 14.5	Initial Dry Density (pcf)	126.6
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	134.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.52

Proposed Commerical/Industrial Development
Calimesa, California
Project No. 20G144-1

PLATE C- 6

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: FILL: Black to Dark Brown Clayey Silt

Boring Number:	SCG-5	Initial Moisture Content (%)	13
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	3.5 to 4.5	Initial Dry Density (pcf)	115.9
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	122.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.46

Proposed Commerical/Industrial Development
Calimesa, California
Project No. 20G144-1

PLATE C- 7

SoCalGeo
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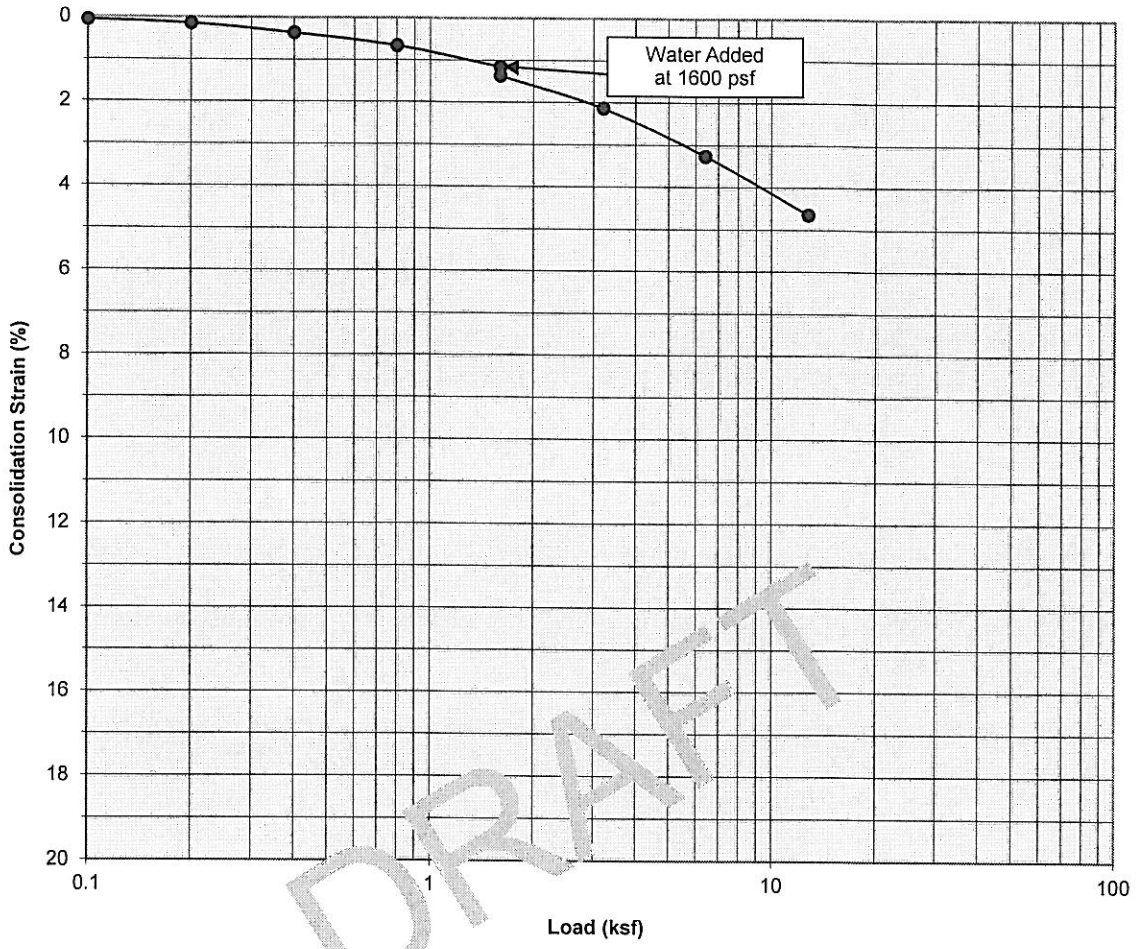
Consolidation/Collapse Test Results



Classification: Alluvium: Bray Brown Silty Clay, little fine to medium Sand

Boring Number:	SCG-5	Initial Moisture Content (%)	2
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	23.5 to 24.5	Initial Dry Density (pcf)	131.6
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	124.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.21

Proposed Commerical/Industrial Development
Calimesa, California
Project No. 20G144-1

PLATE C- 8

SoCalGeo
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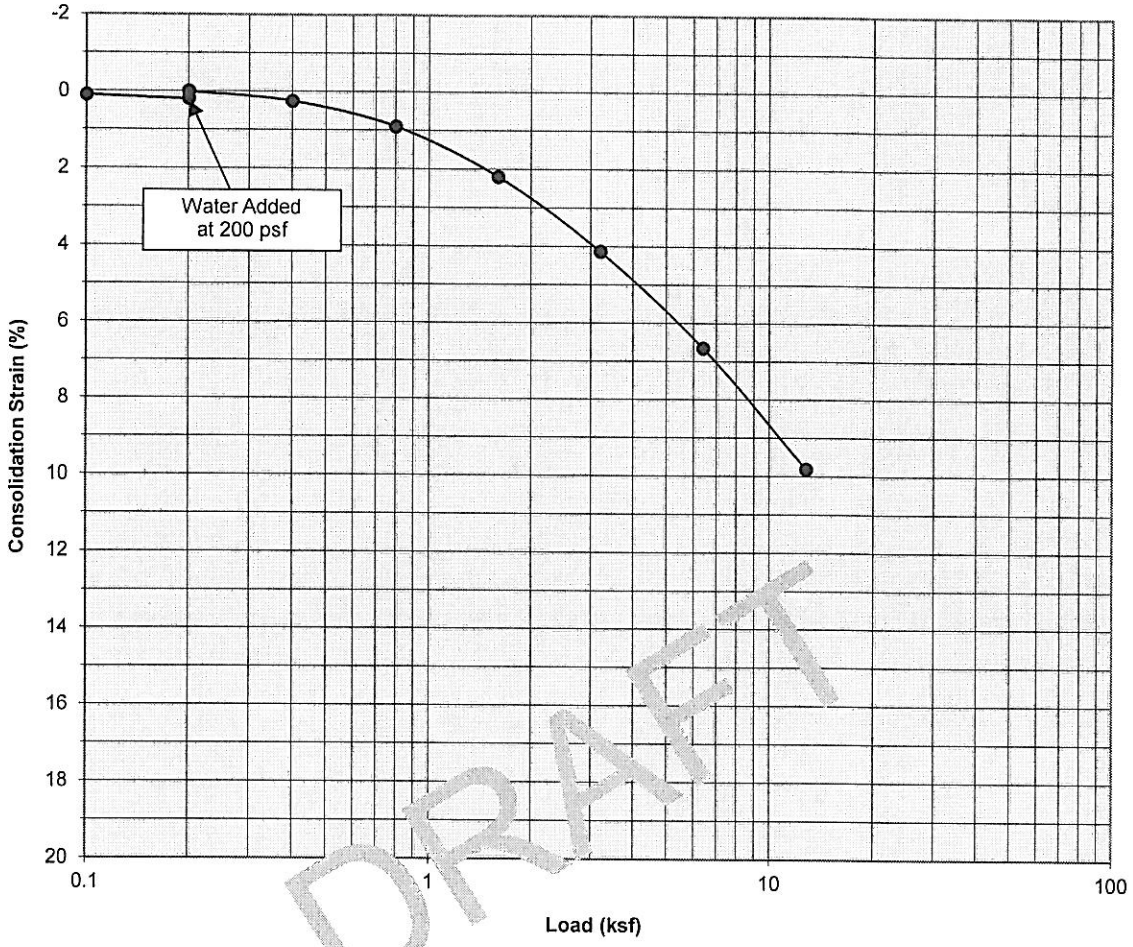
Consolidation/Collapse Test Results



Classification: Alluvium: Dark Brown Silty Clay, trace fine Sand

Boring Number:	SCG-6	Initial Moisture Content (%)	16
Sample Number:	---	Final Moisture Content (%)	19
Depth (ft)	8.5 to 9.5	Initial Dry Density (pcf)	102.6
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	113.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	-0.20

Proposed Commerical/Industrial Development
Calimesa, California
Project No. 20G144-1

PLATE C- 9

SoCalGeo
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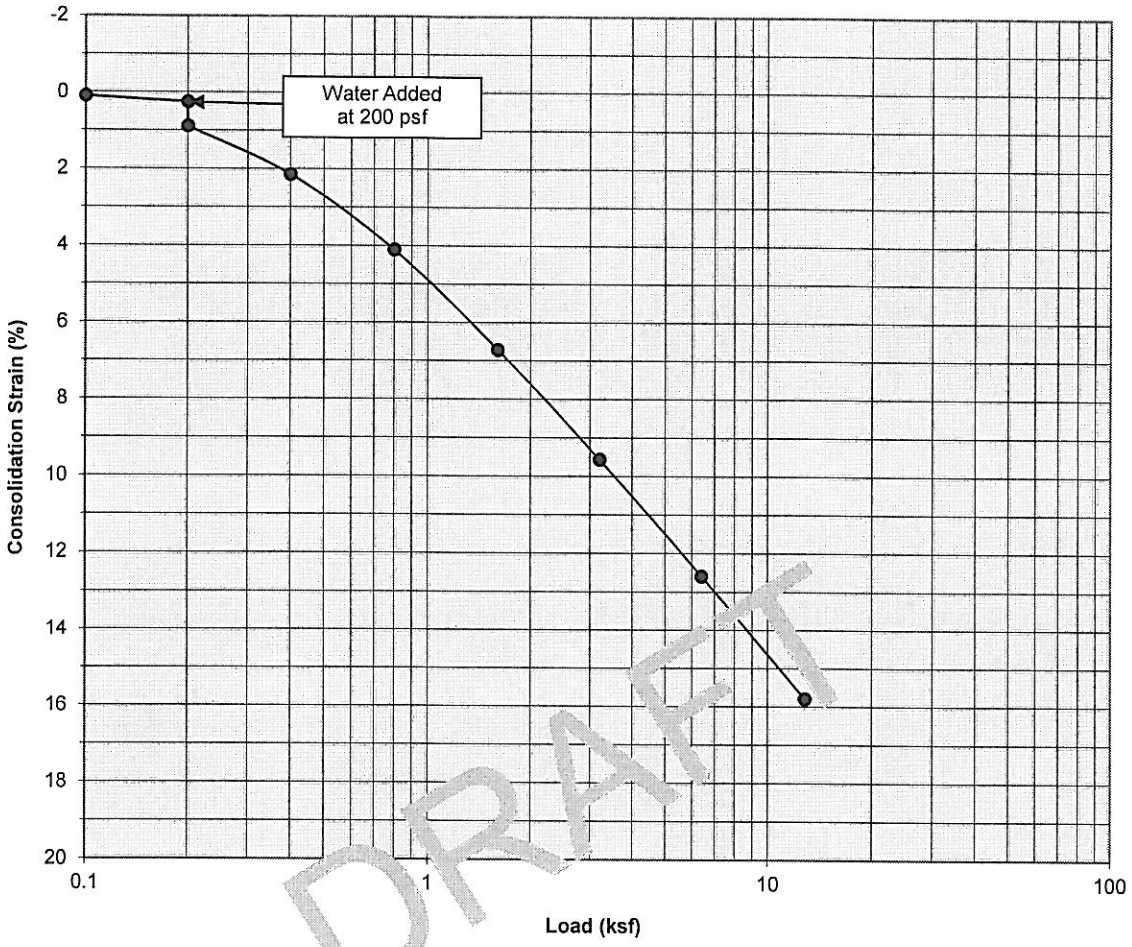
Consolidation/Collapse Test Results



Classification: Alluvium: Light Brown Silty fine Sand

Boring Number:	SCG-6	Initial Moisture Content (%)	16
Sample Number:	---	Final Moisture Content (%)	20
Depth (ft)	18.5 to 19.5	Initial Dry Density (pcf)	95.8
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	112.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.64

Proposed Commerical/Industrial Development
Calimesa, California
Project No. 20G144-1

PLATE C- 10

SoCalGeo
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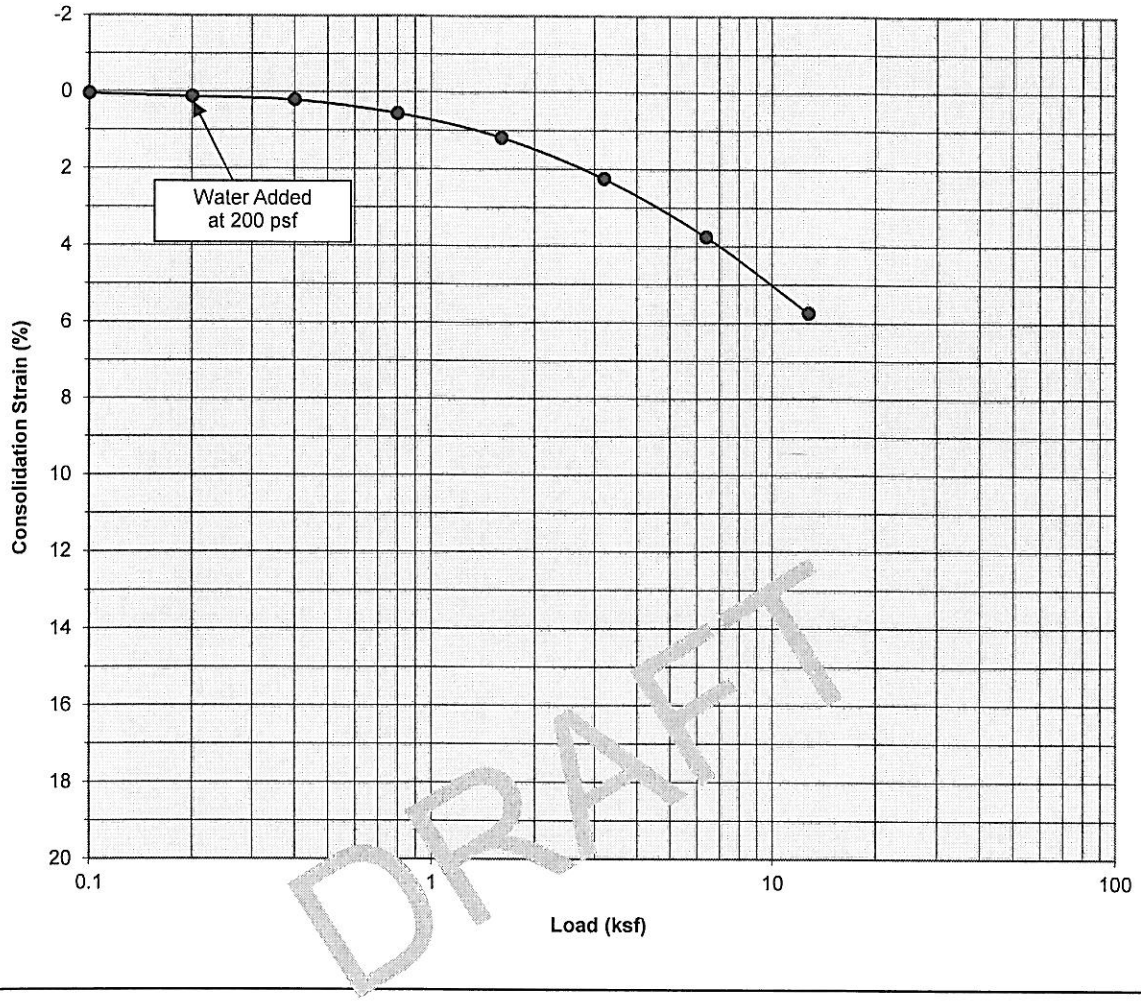
Consolidation/Collapse Test Results



Classification: Alluvium: Dark Brown Clayey Silt, trace fine to coarse Sand

Boring Number:	SCG-7	Initial Moisture Content (%)	12
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	3.5 to 4.5	Initial Dry Density (pcf)	117.7
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	122.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.00

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Calimesa, California
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PLATE C- 11

SoCalGeo
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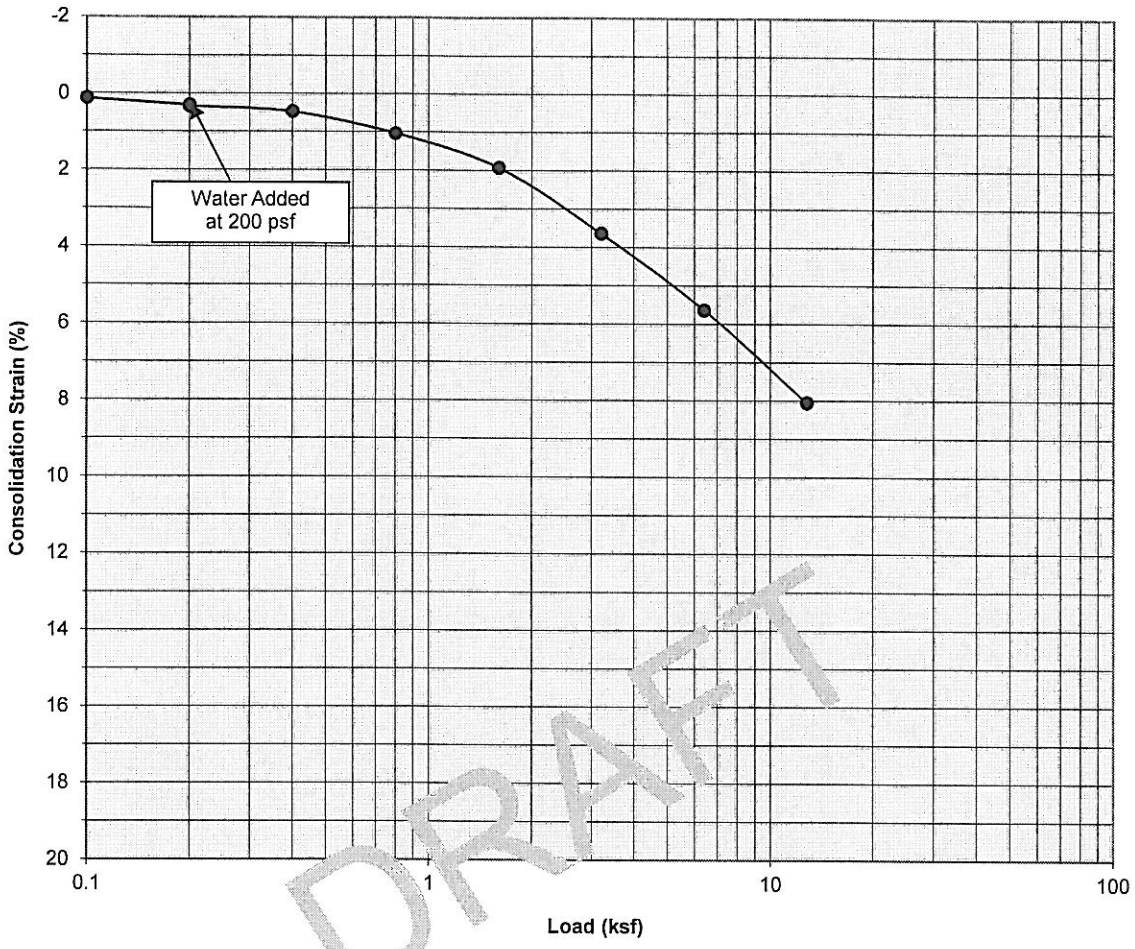
Consolidation/Collapse Test Results



Classification: Alluvium: Light to Dark Brown Clayey Silt, trace fine Sand

Boring Number:	SCG-7	Initial Moisture Content (%)	21
Sample Number:	---	Final Moisture Content (%)	19
Depth (ft)	13.5 to 14.5	Initial Dry Density (pcf)	108.6
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	117.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.03

Proposed Commerical/Industrial Development
Calimesa, California
Project No. 20G144-1
PLATE C- 12

SoCalGeo
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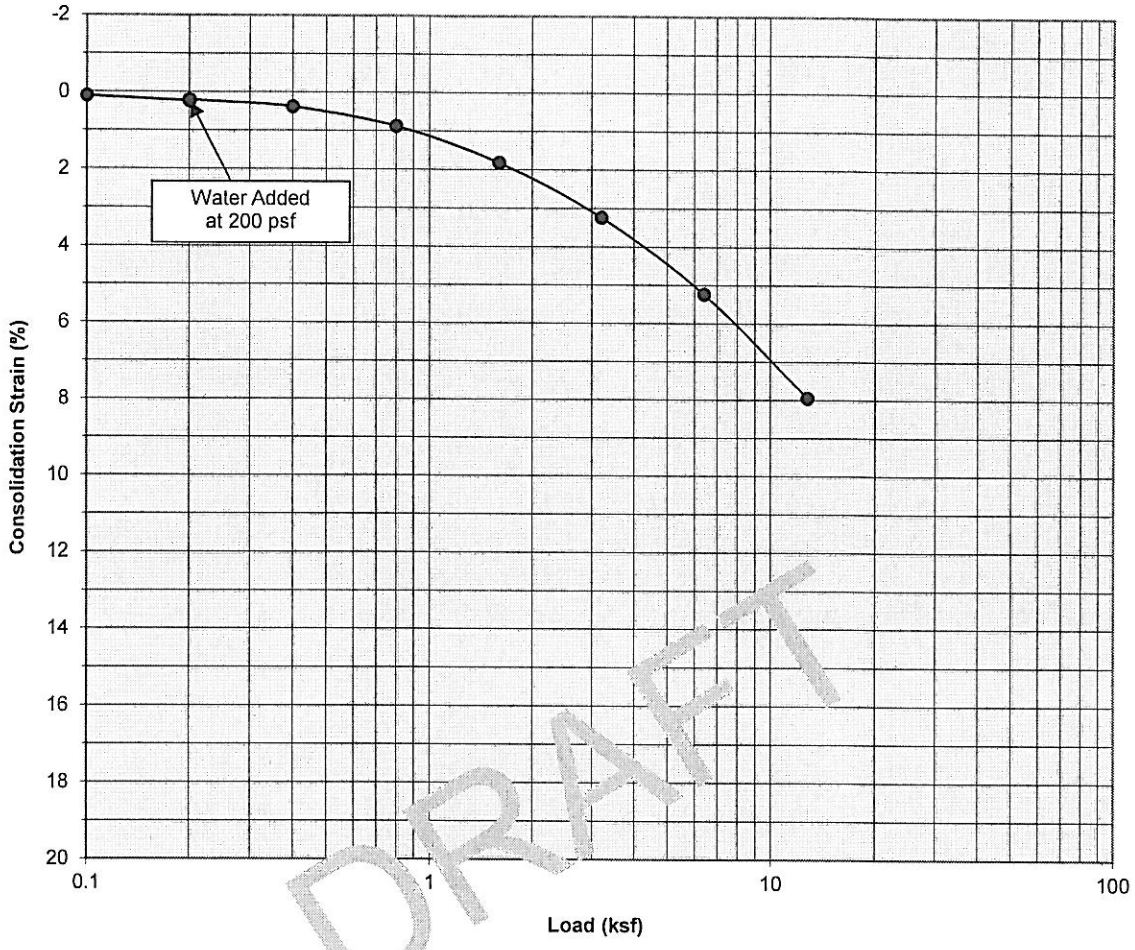
Consolidation/Collapse Test Results



Classification: Light to Dark Brown Clayey Silt, trace fine Sand

Boring Number:	SCG-7	Initial Moisture Content (%)	21
Sample Number:	---	Final Moisture Content (%)	19
Depth (ft)	23.5 to 24.5	Initial Dry Density (pcf)	109.7
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	118.8
Specimen Thickness (in)	1.0	Percent Collapse (%)	-0.03

Proposed Commerical/Industrial Development
Calimesa, California
Project No. 20G144-1
PLATE C- 13

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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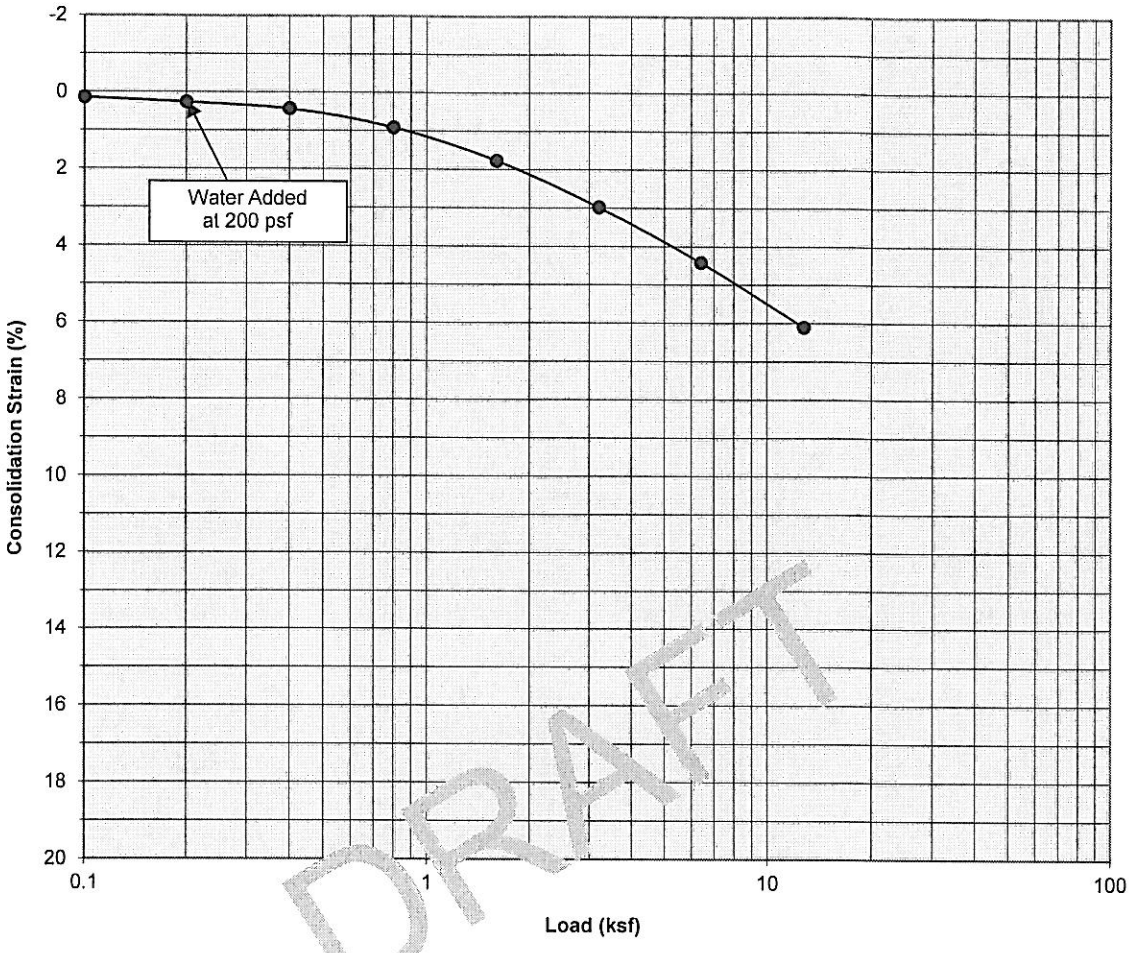
Consolidation/Collapse Test Results



Classification: Green Blue Silty fine Sand

Boring Number:	SCG-7	Initial Moisture Content (%)	16
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	33.5 to 34.5	Initial Dry Density (pcf)	113.8
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	120.6
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.00

Proposed Commerical/Industrial Development
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PLATE C- 14

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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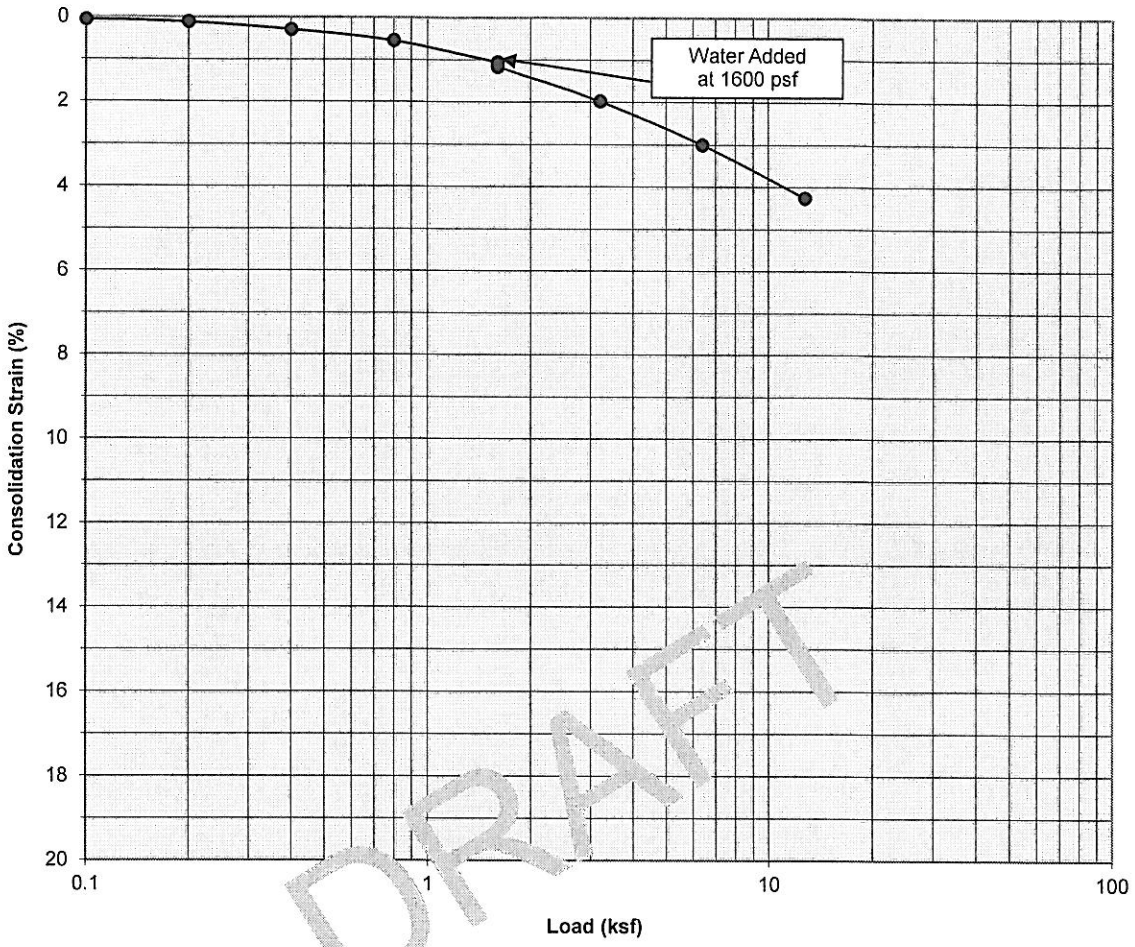
Consolidation/Collapse Test Results



Classification: Alluvium: Gray Brown Silty fine to coarse Sand

Boring Number:	SCG-7	Initial Moisture Content (%)	3
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	43.5 to 44.5	Initial Dry Density (pcf)	114.4
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	117.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.11

Proposed Commerical/Industrial Development
Calimesa, California
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PLATE C- 15

SoCalGeo
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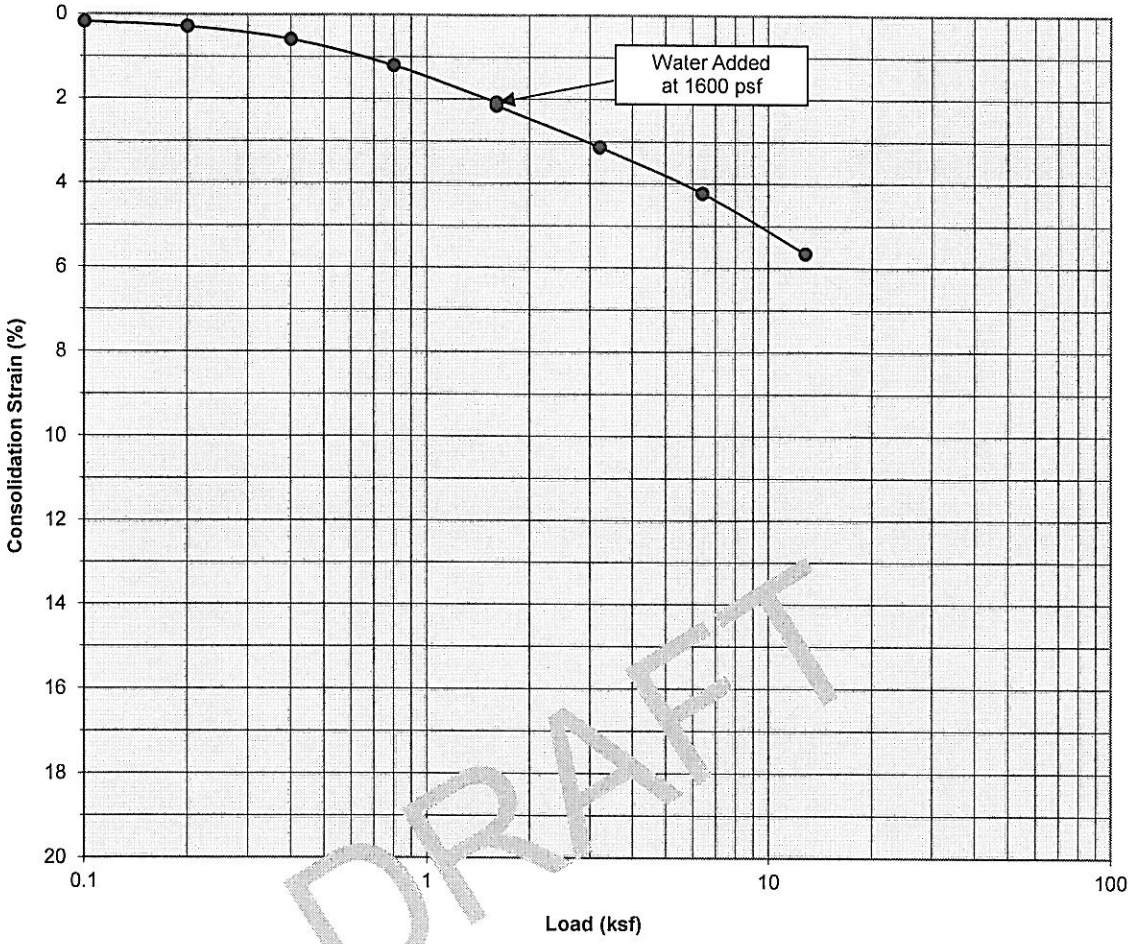
Consolidation/Collapse Test Results



Classification: Alluvium: Blue Green Clayey fine Sand, trace medium to coarse Sand

Boring Number:	SCG-7	Initial Moisture Content (%)	16
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	53.5 to 54.5	Initial Dry Density (pcf)	112.3
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	121.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.08

Proposed Commerical/Industrial Development
Calimesa, California
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PLATE C- 16

SoCalGeo
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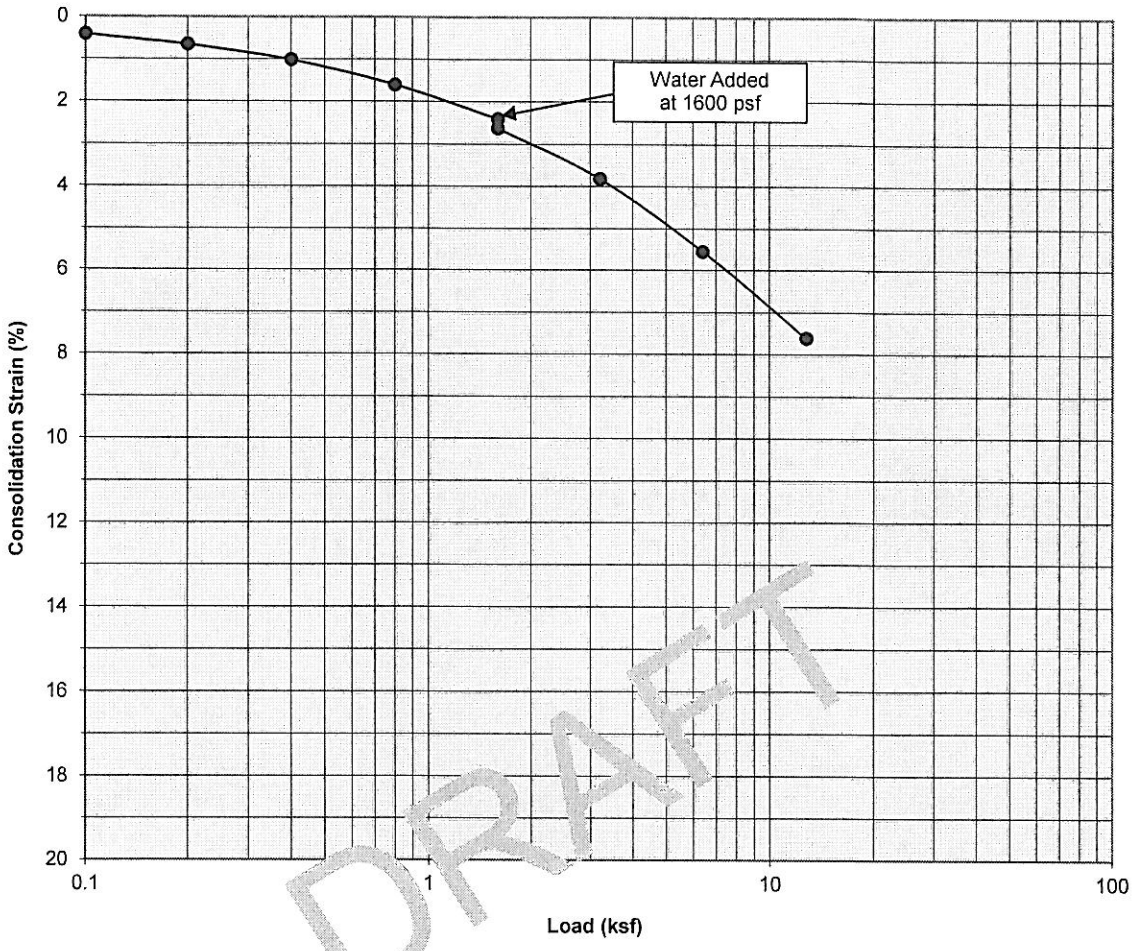
Consolidation/Collapse Test Results



Classification: Alluvium: Brown Silty fine Sand

Boring Number:	SCG-8	Initial Moisture Content (%)	13
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	8.5 to 9.5	Initial Dry Density (pcf)	117.7
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	126.0
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.22

Proposed Commerical/Industrial Development
Calimesa, California
Project No. 20G144-1

PLATE C- 17

SoCalGeo
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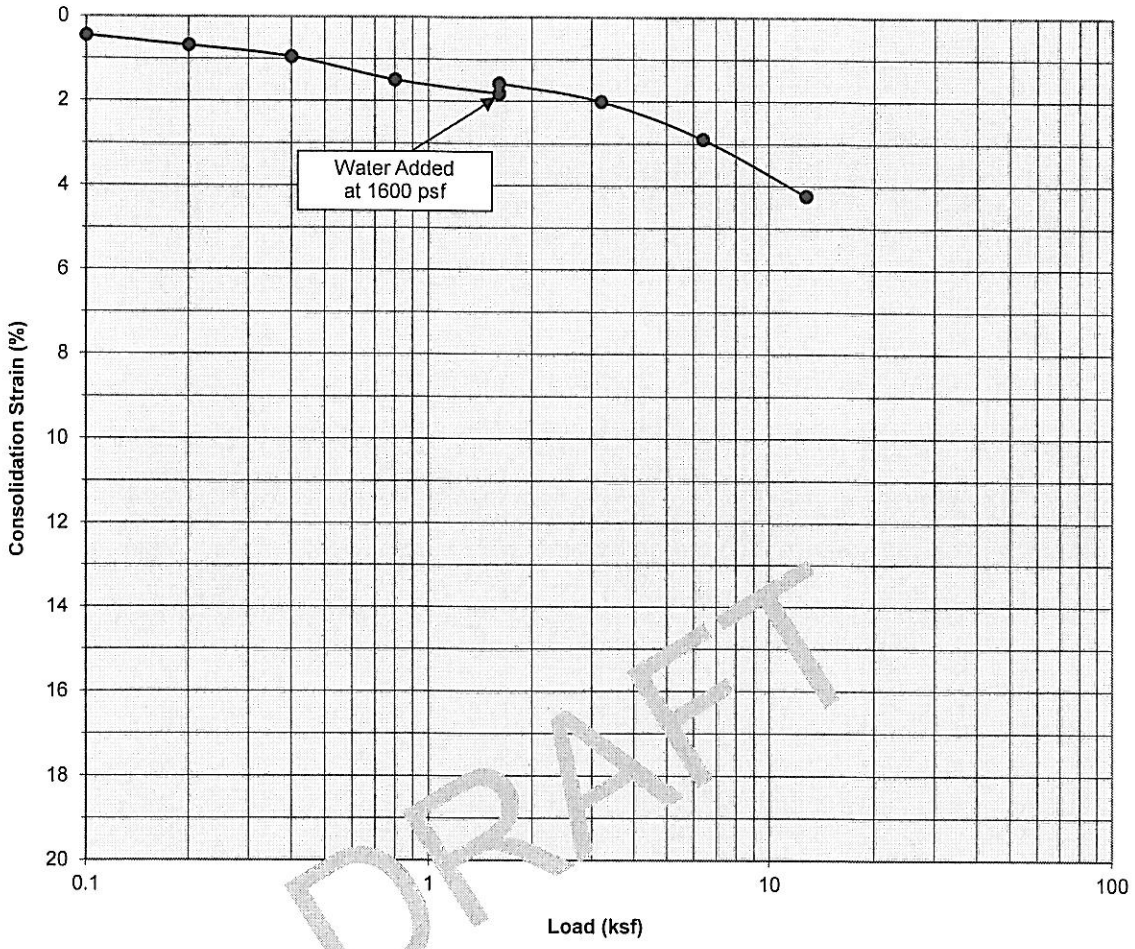
Consolidation/Collapse Test Results



Classification: Alluvium: Clayey fine Sand, trace medium to coarse Sand

Boring Number:	SCG-8	Initial Moisture Content (%)	11
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	18.5 to 19.5	Initial Dry Density (pcf)	122.9
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	125.0
Specimen Thickness (in)	1.0	Percent Collapse (%)	-0.24

Proposed Commerical/Industrial Development
Calimesa, California
Project No. 20G144-1

PLATE C- 18

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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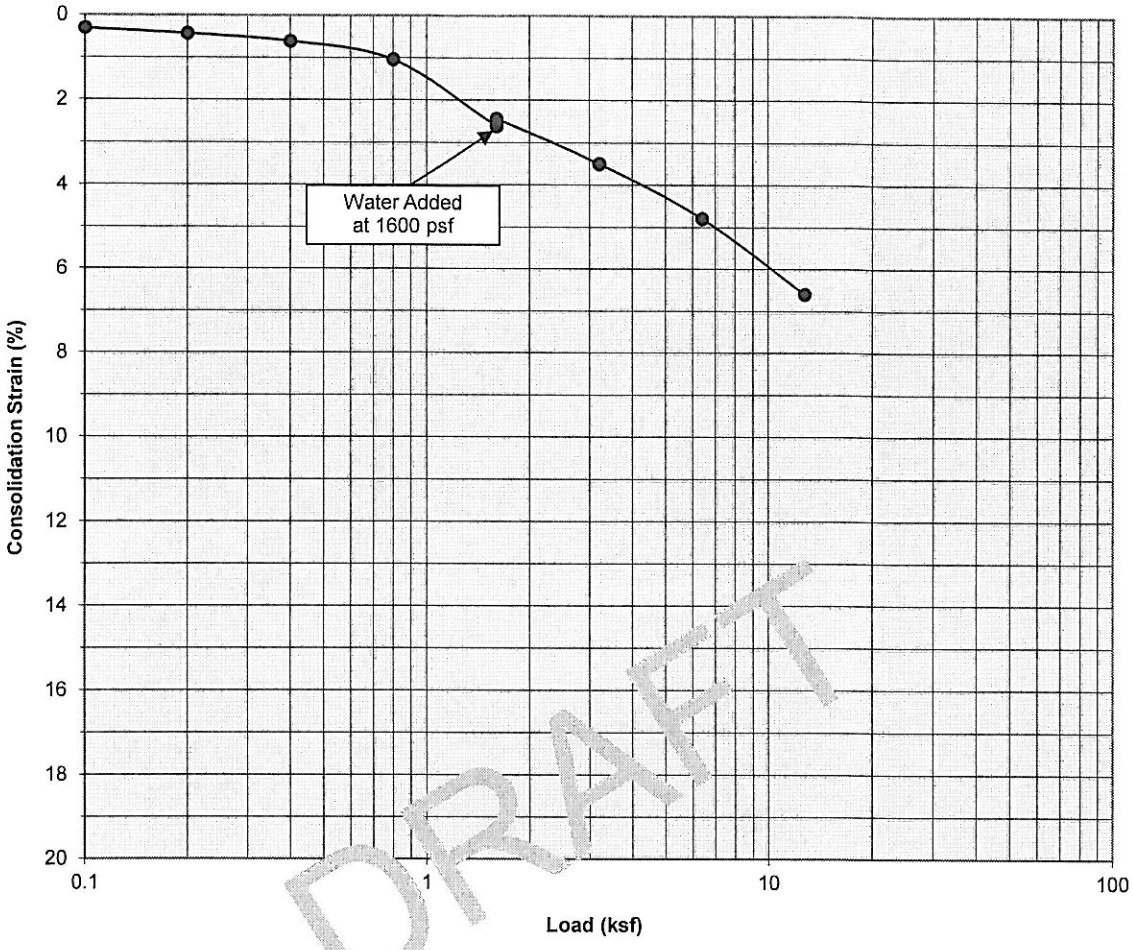
Consolidation/Collapse Test Results



Classification: Alluvium: Brown Silty fine Sand, trace Clay

Boring Number:	SCG-9	Initial Moisture Content (%)	7
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	3.5 to 4.5	Initial Dry Density (pcf)	118.1
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	123.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	-0.18

Proposed Commerical/Industrial Development
Calimesa, California
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PLATE C- 19

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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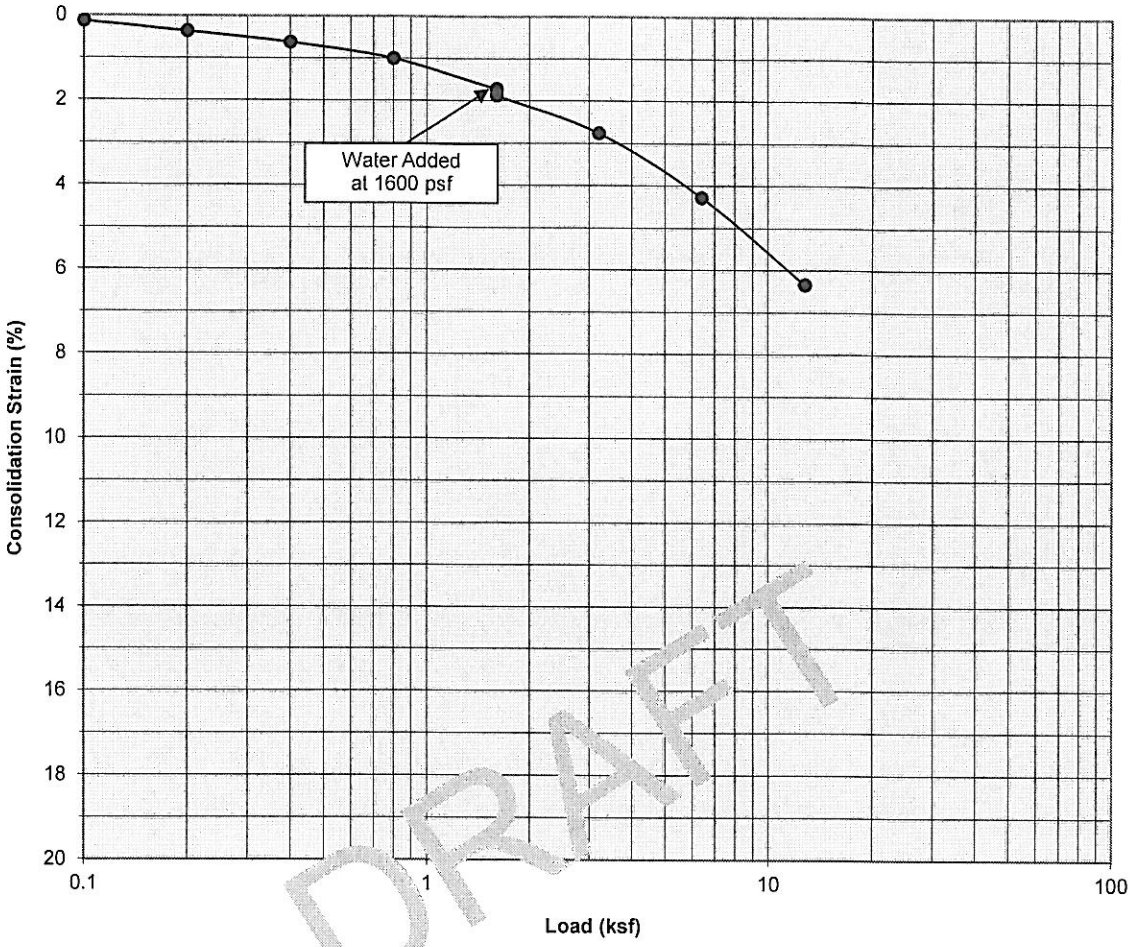
Consolidation/Collapse Test Results



Classification: Alluvium: Brown Silty fine Sand, trace Clay

Boring Number:	SCG-9	Initial Moisture Content (%)	7
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	13.5 to 14.5	Initial Dry Density (pcf)	131.7
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	133.0
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.15

Proposed Commerical/Industrial Development
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PLATE C- 20

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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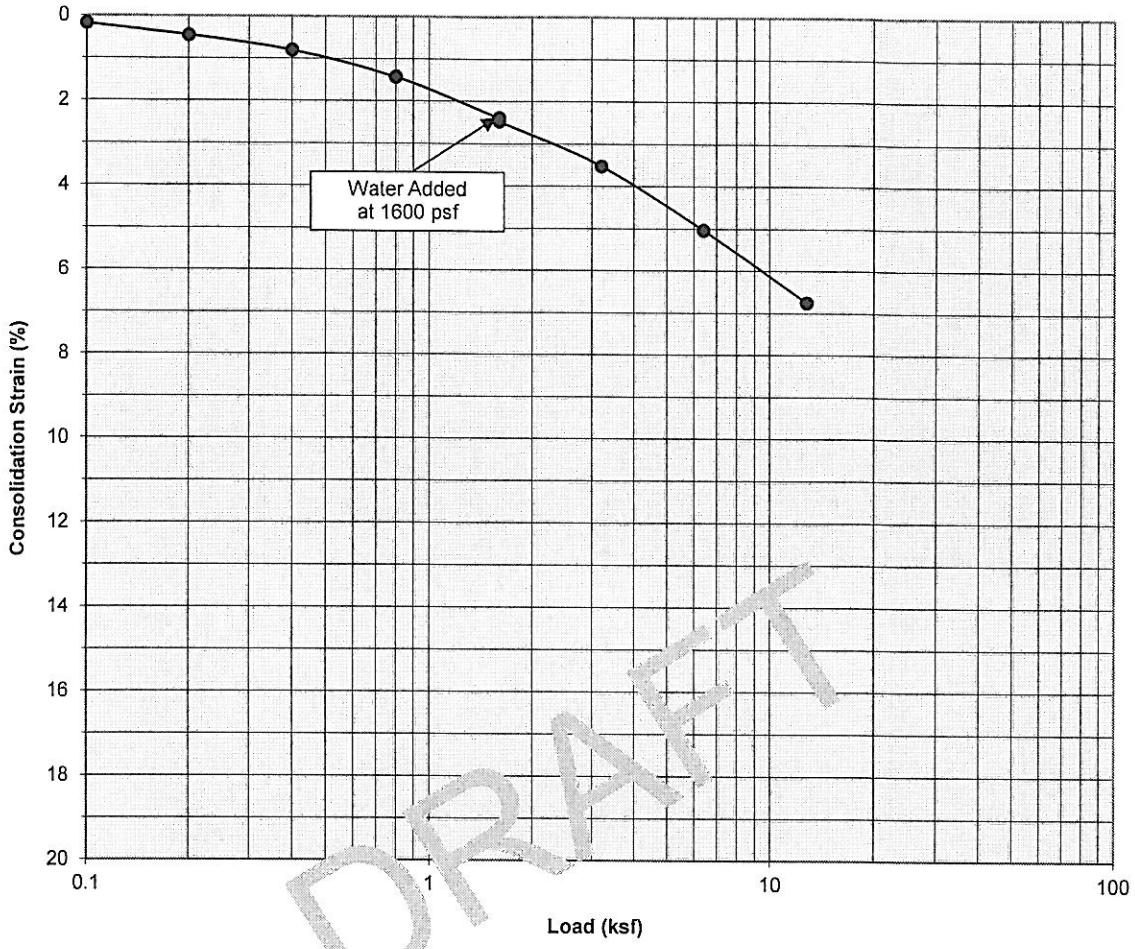
Consolidation/Collapse Test Results



Classification: Alluvium: Brown Silty fine Sand, trace Clay

Boring Number:	SCG-9	Initial Moisture Content (%)	13
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	23.5 to 24.5	Initial Dry Density (pcf)	117.8
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	125.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.08

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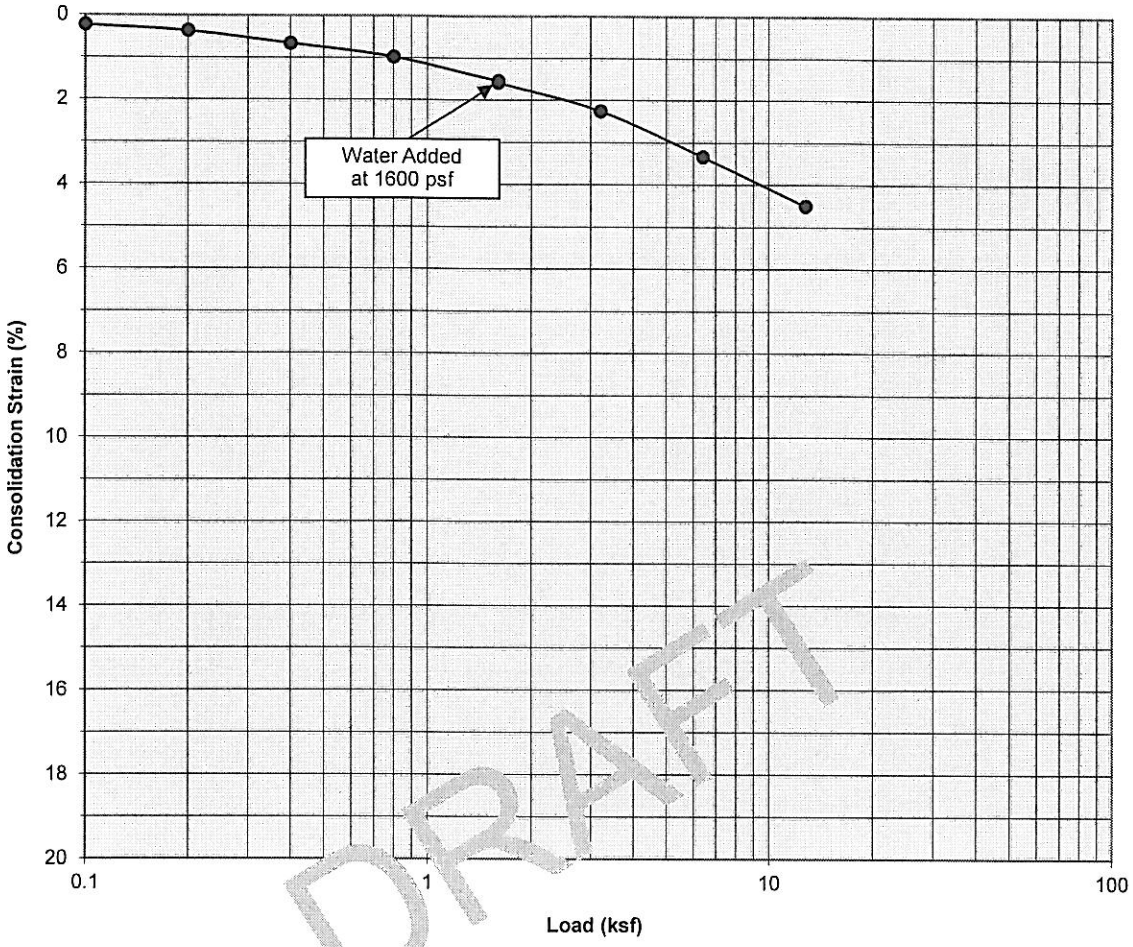
PLATE C- 21

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Older Alluvium: Brown Silty fine Sand

Boring Number:	SCG-10	Initial Moisture Content (%)	15
Sample Number:	---	Final Moisture Content (%)	18
Depth (ft)	28.5 to 29.5	Initial Dry Density (pcf)	116.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	118.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.04

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PLATE C- 22

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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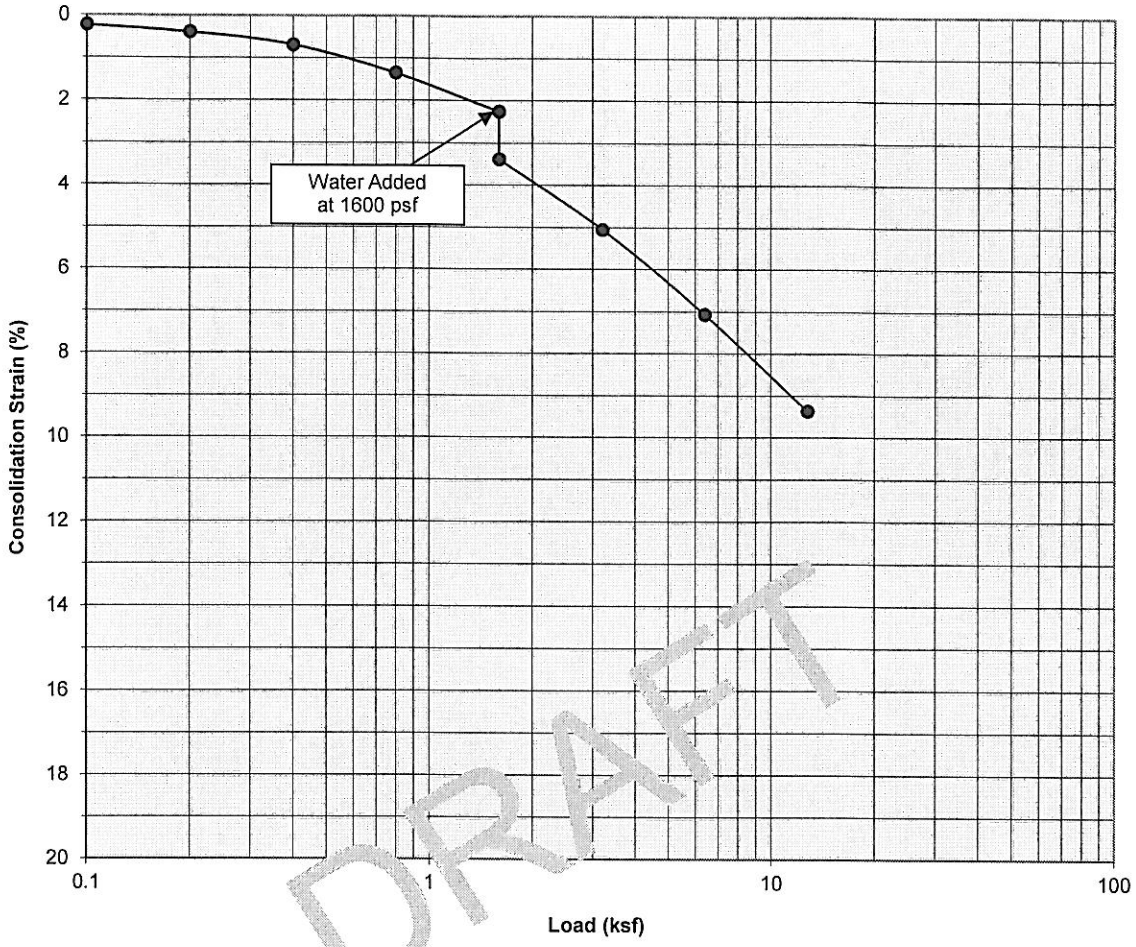
Consolidation/Collapse Test Results



Classification: Older Alluvium: Brown Silty fine Sand, trace medium Sand

Boring Number:	SCG-10	Initial Moisture Content (%)	11
Sample Number:	---	Final Moisture Content (%)	21
Depth (ft)	38.5 to 39.5	Initial Dry Density (pcf)	103.3
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	113.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.13

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PLATE C- 23

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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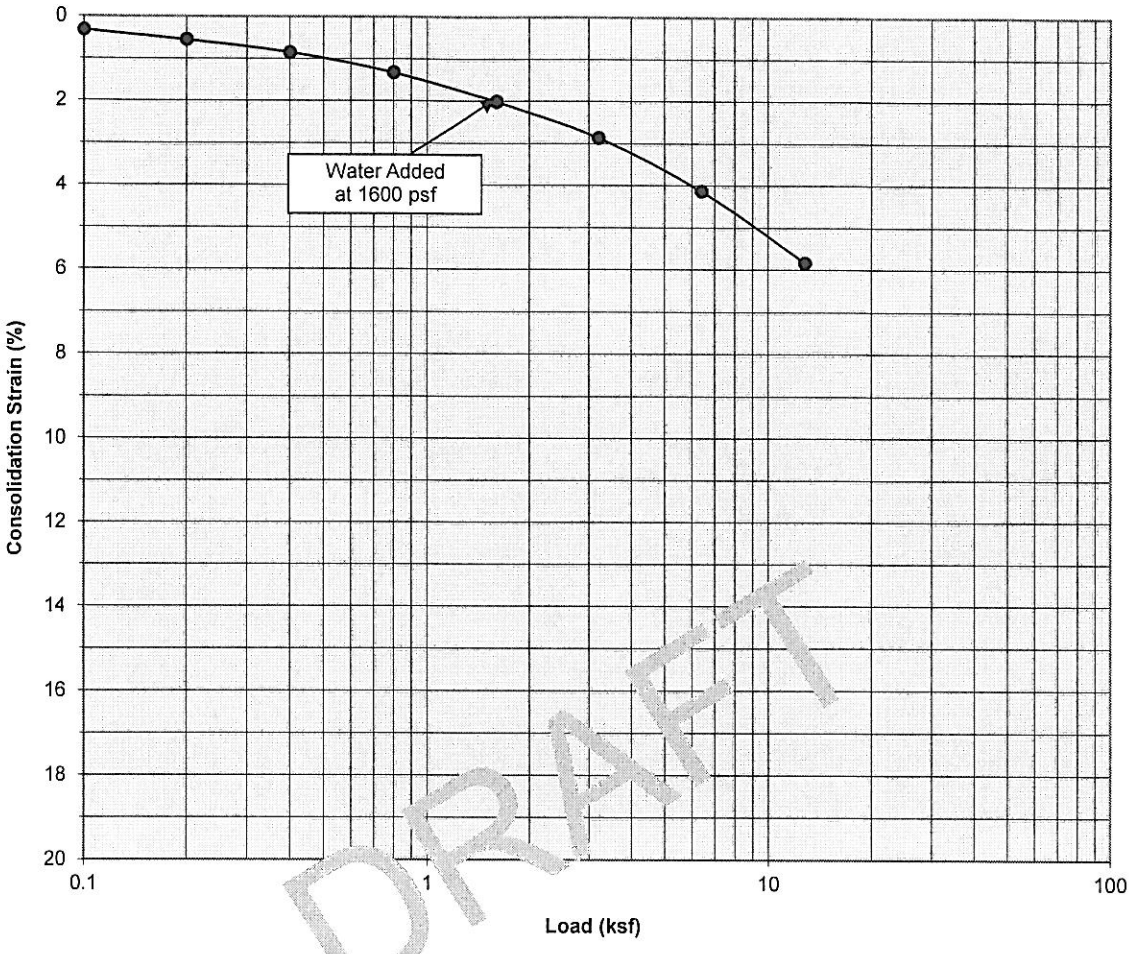
Consolidation/Collapse Test Results



Classification: Older Alluvium: Green Blue Silty fine Sand

Boring Number:	SCG-10	Initial Moisture Content (%)	15
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	48.5 to 49.5	Initial Dry Density (pcf)	116.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	120.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.01

Proposed Commerical/Industrial Development
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PLATE C- 24

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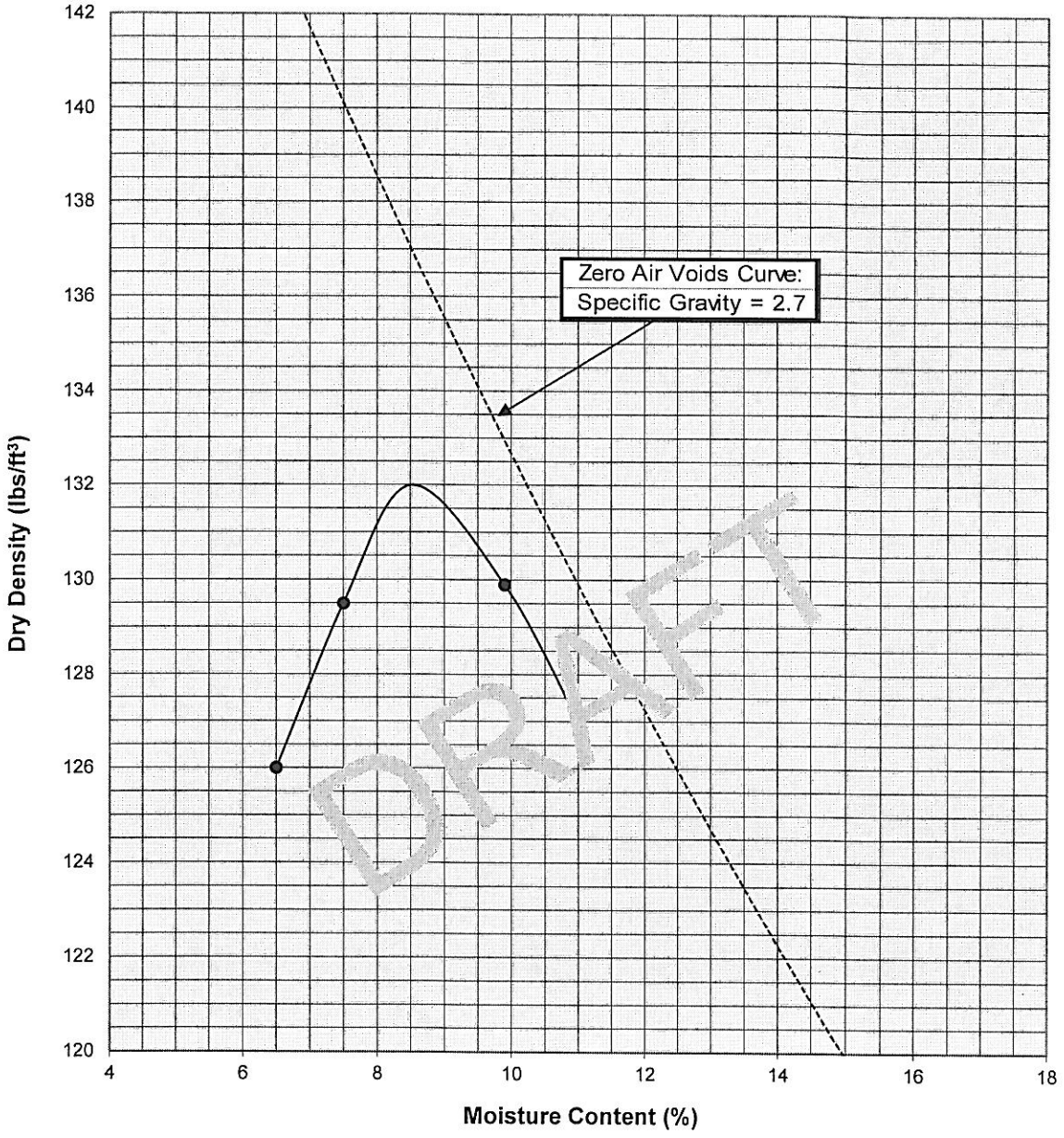
Moisture/Density Relationship
ASTM D-1557



Soil ID Number	SCG-2 @ 0-5'
Optimum Moisture (%)	8.5
Maximum Dry Density (pcf)	132
Soil Classification	Orange Brown fine Sandy Silt, trace Clay

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PLATE C-25

SoCalGeo
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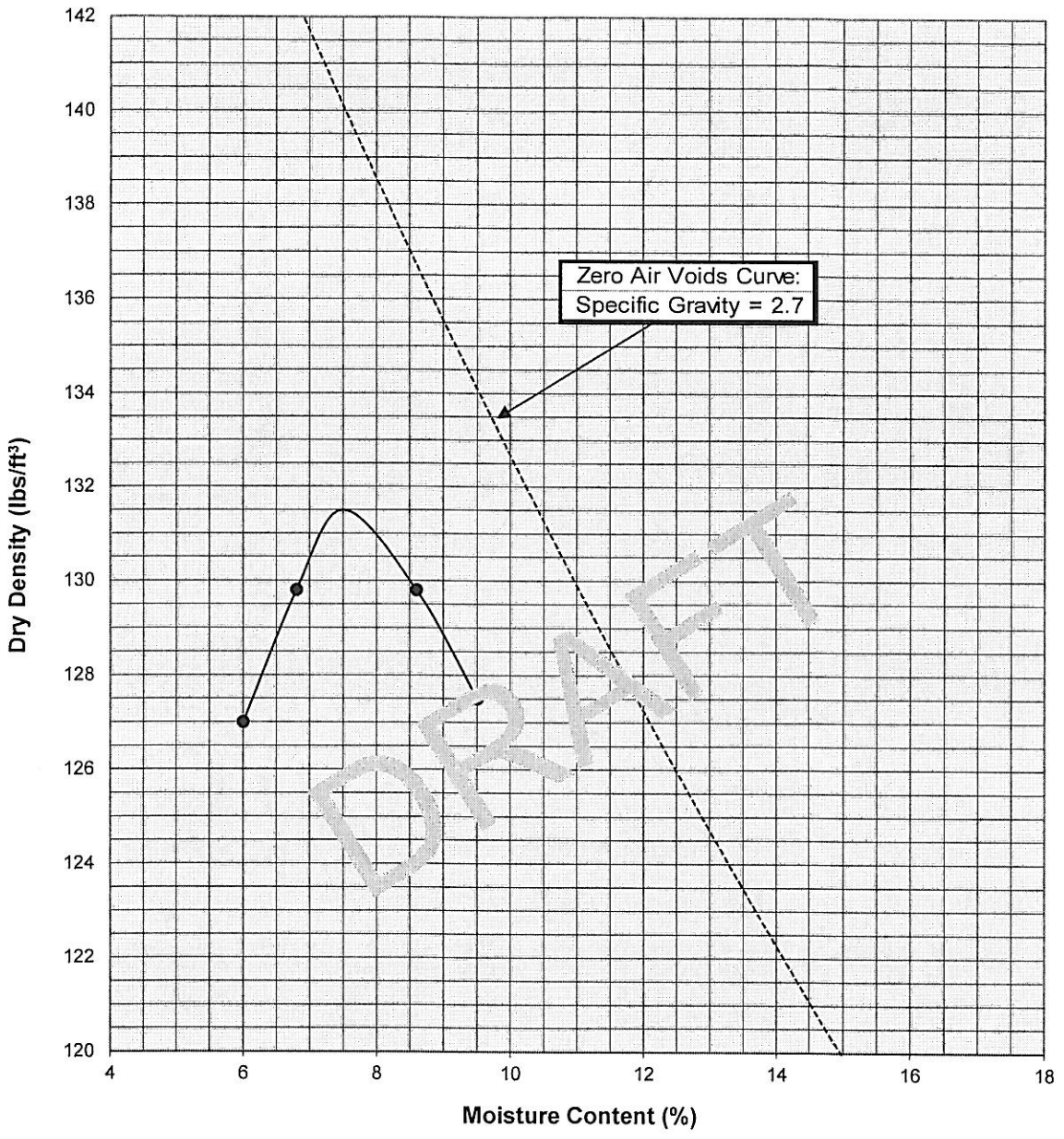
A California Corporation

Moisture/Density Relationship
ASTM D-1557



Soil ID Number	SCG-4 @ 0-5'
Optimum Moisture (%)	7.5
Maximum Dry Density (pcf)	131.5
Soil Classification	Dark Gray Brown Silty fine to medium Sand, trace to little course Sand, trace to little fine Gravel

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PLATE C-26

SoCalGeo
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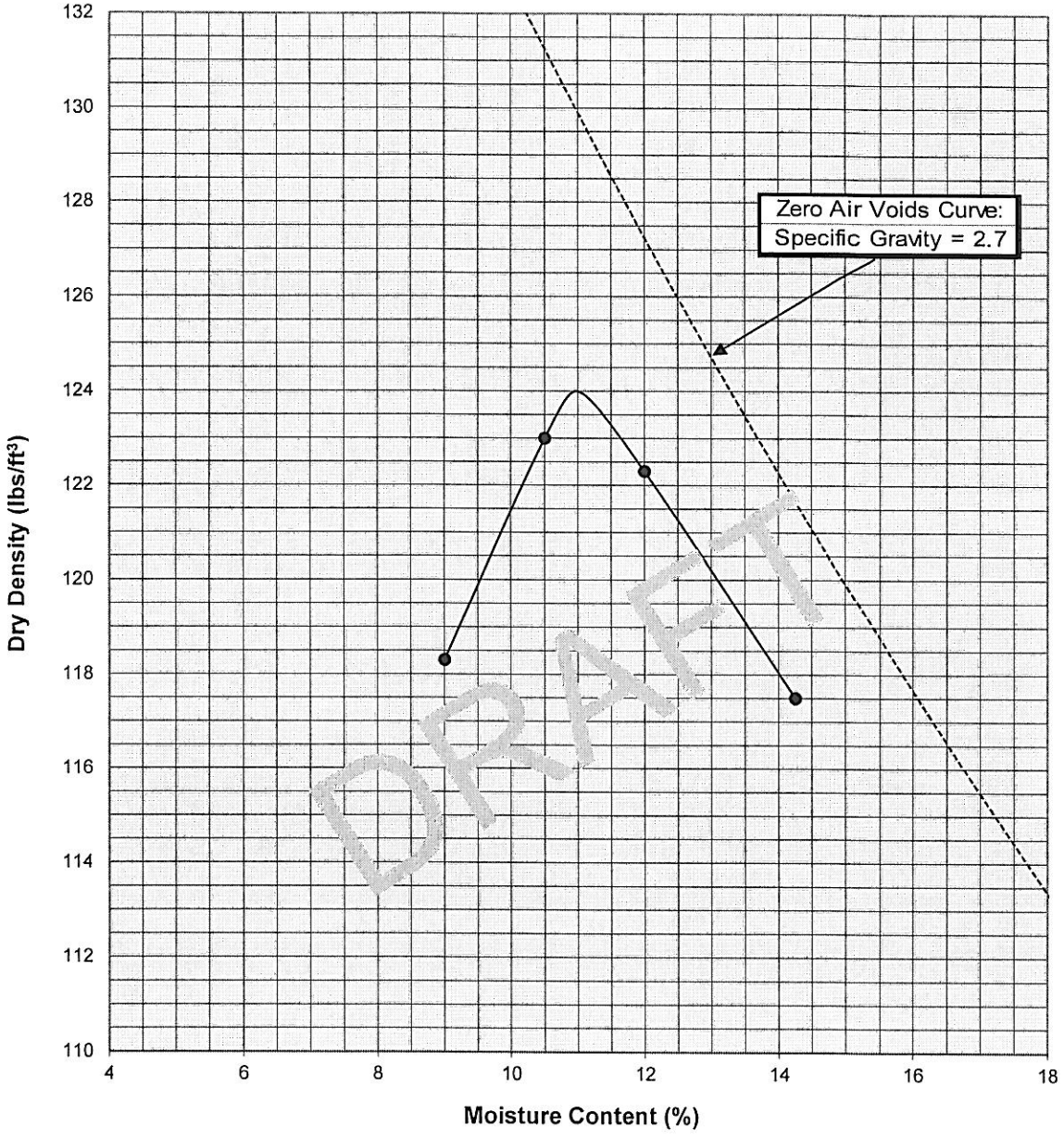
Moisture/Density Relationship
ASTM D-1557



Soil ID Number	SCG-5 @ 0-5'
Optimum Moisture (%)	11
Maximum Dry Density (pcf)	124
Soil Classification	Dark Brown Clayey Silt, trace fine to medium Sand

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PLATE C-27

SoCalGeo
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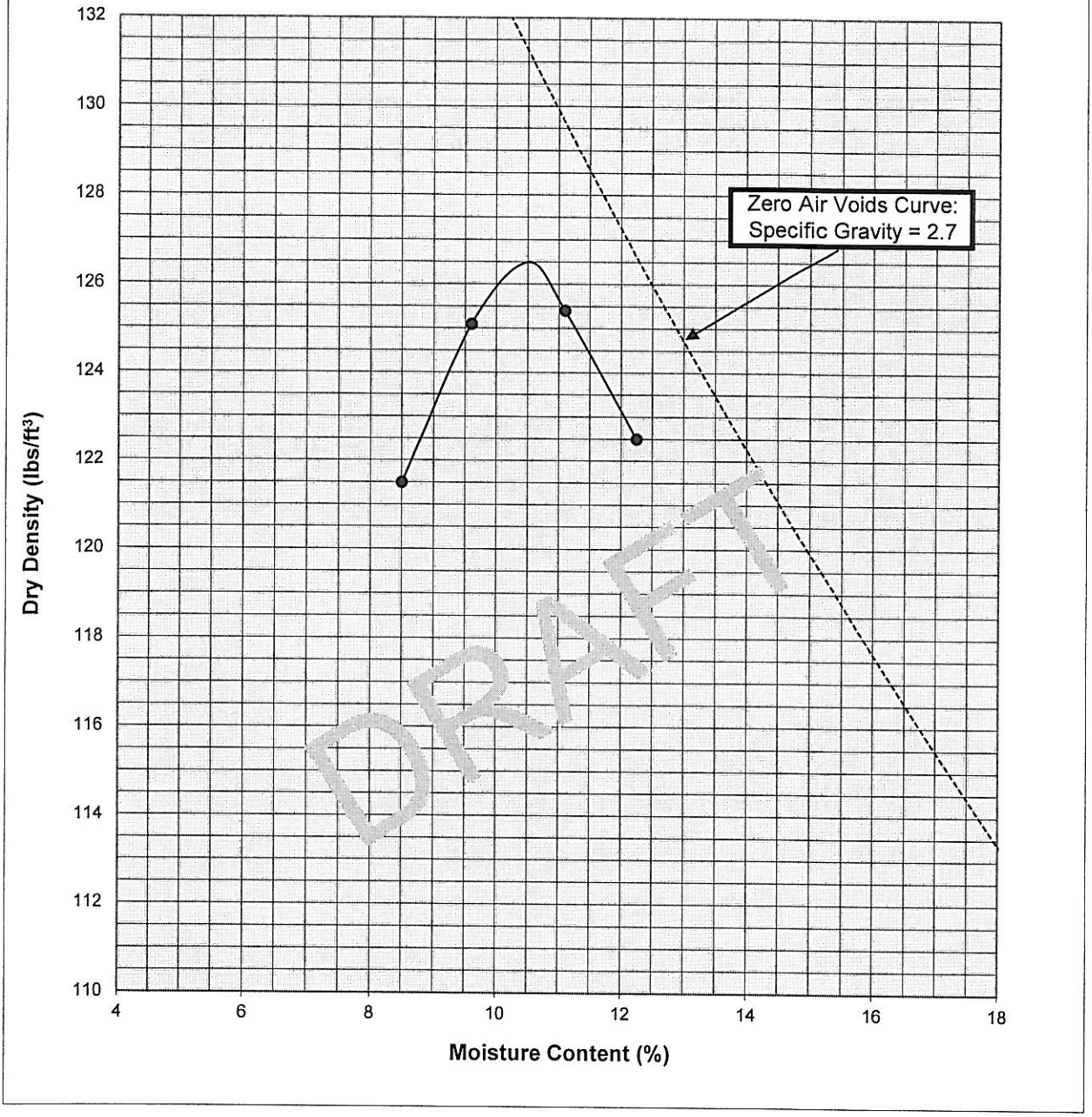
Moisture/Density Relationship
ASTM D-1557



Soil ID Number	SCG-10 @ 0-5'
Optimum Moisture (%)	10.5
Maximum Dry Density (pcf)	126.5
Soil Classification	Brown Silty fine Sand, trace medium to coarse Sand

Proposed Commercial/Industrial Development
Calimesa, California
Project No. 20G144-1

PLATE C-28

SoCalGeo
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APPENDIX D

Earthwork Specifications

ALTA CALIFORNIA GEOTECHNICAL, INC.
EARTHWORK SPECIFICATIONS

These specifications present the generally accepted standards and minimum earthwork requirements for the development of the project. These specifications shall be the project guidelines for earthwork except where specifically superseded in preliminary geology and soils reports, grading plan review reports or by the prevailing grading codes or ordinances of the controlling agency.

A. GENERAL

1. The Contractor shall be responsible for the satisfactory completion of all earthwork in accordance with the project plans and specifications.

2. The project Geotechnical Engineer and Engineering Geologist, or their representatives, shall provide observation and testing services, and Geotechnical consultation for the duration of the project.

3. All clearing, grubbing, stripping and site preparation for the project shall be accomplished by the Contractor to the satisfaction of the Geotechnical Engineer/Engineering Geologist.

4. It is the Contractor's responsibility to prepare the ground surface to receive fill to the satisfaction of the Geotechnical Engineer and to place, spread, mix, moisture condition, and compact the fill in accordance with the job specifications and as required by the Geotechnical Engineer. The Contractor shall also remove all material considered by the Geotechnical Engineer to be unsuitable for use in the construction of engineered fills.

5. The Contractor shall have suitable and sufficient equipment in operation to handle the amount of fill being placed. When necessary, equipment will be shut down temporarily in order to permit the proper preparation of fills.

B. PREPARATION OF FILL AREAS

1. Excessive vegetation and all deleterious material should be disposed of offsite as required by the Geotechnical Engineer.

   Existing fill, soil, alluvium or rock materials determined by the Geotechnical Engineer as being unsuitable for placement in compacted fills shall be removed and hauled from the site. Where applicable, the Contractor may obtain the

approval of the Soils Engineer and the controlling authorities for the project to dispose of the above described materials, or a portion thereof, in designated areas onsite.

After removal of the deleterious materials have been accomplished, earth materials deemed unsuitable in their natural, in-place condition, shall be removed as recommended by the Geotechnical Engineer/Engineering Geologist.

2. Upon achieving a suitable bottom for fill placement, the exposed removal bottom shall be disced or bladed by the Contractor to the satisfaction of the Geotechnical Engineer. The prepared ground surfaces shall then be brought to the specified moisture content mixed as required, and compacted and tested as specified. In localities where it is necessary to obtain the approval of the controlling agency prior to placing fill, it will be the Contractor's responsibility to contact the proper authorities to visit the site.

3. Any underground structure such as cesspools, cisterns, mining shafts, tunnels, septic tanks, wells, pipelines or other structures not located prior to grading are to be removed or treated in a manner prescribed by the Geotechnical Engineer and/or the controlling agency for the project.

C. ENGINEERED FILLS

1. Any material imported or excavated on the property may be utilized as fill, provided the material has been determined to be suitable by the Geotechnical Engineer. Deleterious materials shall be removed from the fill as directed by the Geotechnical Engineer.

2. Rock or rock fragments less than twelve inches in the largest dimension may be utilized in the fill, provided they are not placed in concentrated pockets and the distribution of the rocks is approved by the Geotechnical Engineer.

3. Rocks greater than twelve inches in the largest dimension shall be taken offsite, or placed in accordance with the recommendations of the Geotechnical Engineer in areas designated as suitable for rock disposal.

4. All materials to be used as fill, shall be tested in the laboratory by the Geotechnical Engineer. Proposed import materials shall be approved by the Geotechnical Engineer 48 hours prior to importation.

5. The fill materials shall be placed by the Contractor in lifts, that when compacted, shall not exceed six inches. Each lift shall be spread evenly and shall be

thoroughly mixed to achieve a near uniform moisture condition and a uniform blend of materials.

All compaction shall be achieved at or above the optimum moisture content, as determined by the applicable laboratory standard. The Contractor will be notified if the fill materials are too wet or too dry to achieve the required compaction standard.

6. When the moisture content of the fill material is below the limit specified by the Geotechnical Engineer, water shall be added and the materials shall be blended until a uniform moisture content, within specified limits, is achieved. When the moisture content of the fill material is above the limits specified by the Geotechnical Engineer, the fill materials shall be aerated by discing, blading, mixed with dryer fill materials, or other satisfactory methods until the moisture content is within the specified limits.

7. Each fill lift shall be compacted to the minimum project standards, in compliance with the testing methods specified by the controlling governmental agency, and in accordance with recommendations of the Geotechnical Engineer.

   In the absence of specific recommendations by the Geotechnical Engineer to the contrary, the compaction standard shall be the most recent version of ASTM:D 1557.

8. Where a slope receiving fill exceeds a ratio of five-horizontal to one-vertical, the fill shall be keyed and benched through all unsuitable materials into sound bedrock or firm material, in accordance with the recommendations and approval of the Geotechnical Engineer.

9. Side hill fills shall have a minimum key width of 15 feet into bedrock or firm materials, unless otherwise specified in the soil report and approved by the Geotechnical Engineer in the field.

10. Drainage terraces and subdrainage devices shall be constructed in compliance with the ordinances of the controlling governmental agency and/or with the recommendations of the Geotechnical Engineer and Engineering Geologist.

11. The Contractor shall be required to maintain the specified minimum relative compaction out to the finish slope face of fill slopes, buttresses, and stabilization fills as directed by the Geotechnical Engineer and/or the governing agency for the project. This may be achieved by either overbuilding the slope and cutting

back to the compacted core; by direct compaction of the slope face with suitable equipment; or by any other procedure which produces the required result.

12. The fill portion of fill-over-cut slopes shall be properly keyed into rock or firm material; and the fill area shall be stripped of all soil or unsuitable materials prior to placing fill.

    The design cut portion of the slope should be made first and evaluated for suitability by the Engineering Geologist prior to placement of fill in the keyway above the cut slope.

13. Pad areas in cut or natural ground shall be approved by the Geotechnical Engineer. Finished surfaces of these pads may require scarification and recompaction, or over excavation as determined by the Geotechnical Engineer.

D. CUT SLOPES

1. The Engineering Geologist shall observe all cut slopes and shall be notified by the Contractor when cut slopes are to be started.

2. If, during the course of grading, unforeseen adverse or potentially adverse geologic conditions are encountered, the Engineering Geologist and Soil Engineer shall investigate, analyze and make recommendations to remediate these problems.

3. Non-erodible interceptor swales shall be placed at the top of cut slopes that face the same direction as the superjacent, prevailing drainage.

4. Unless otherwise specified in specific geotechnical reports, no cut slopes shall be excavated higher or steeper than that allowed by the ordinances of controlling governmental agencies.

5. Drainage terraces shall be constructed in compliance with the ordinances of the controlling governmental agencies, and/or in accordance with the recommendations of the Geotechnical Engineer or Engineering Geologist.

E. GRADING CONTROL

1. Fill placement shall be observed and tested by the Geotechnical Engineer and/or his representative during grading.

   Field density tests shall be made by the Geotechnical Engineer and/or his representative to evaluate the compaction and moisture compliance of each fill lift. Density tests shall be conducted at intervals not to exceed two feet of fill

height. Where sheepsfoot rollers are used, the fill may be disturbed to a depth of several inches. Density determinations shall be taken in the compacted material below the disturbed surface at a depth determined by the Geotechnical Engineer or his representative.

2. Where tests indicate that the density of any layer of fill, or portion thereof, is below the required relative compaction, or improper moisture content is in evidence, that particular layer or portion thereof shall be reworked until the required density and/or moisture content has been attained. Additional fills shall not be placed over an area until the previous lift of fill has been tested and found to meet the density and moisture requirements for the project and the previous lift is approved by the Geotechnical Engineer.

3. When grading activities are interrupted by heavy rains, fill operations shall not be resumed until field observations and tests by the Geotechnical Engineer indicate the moisture content and density of the fill are within the specified limits.

4. During construction, the Contractor shall properly grade all surfaces to maintain good drainage and prevent the ponding of water. The Contractor shall take remedial action to control surface water and to prevent erosion of graded areas until such time as a permanent drainage and erosion devices have been installed.

5. Observation and testing by the Geotechnical Engineer and/or his representative shall be conducted during filling and compacting operations in order that he will be able to state in his opinion that all cut and filled areas are graded in accordance with the approved specifications.

6. Upon the completion of grading activities and after the Geotechnical Engineer and Engineering Geologist have finished their observations of the work, final reports shall be submitted. No further excavation or fill placement shall be undertaken without prior notification of the Geotechnical Engineer and/or Engineering Geologist.

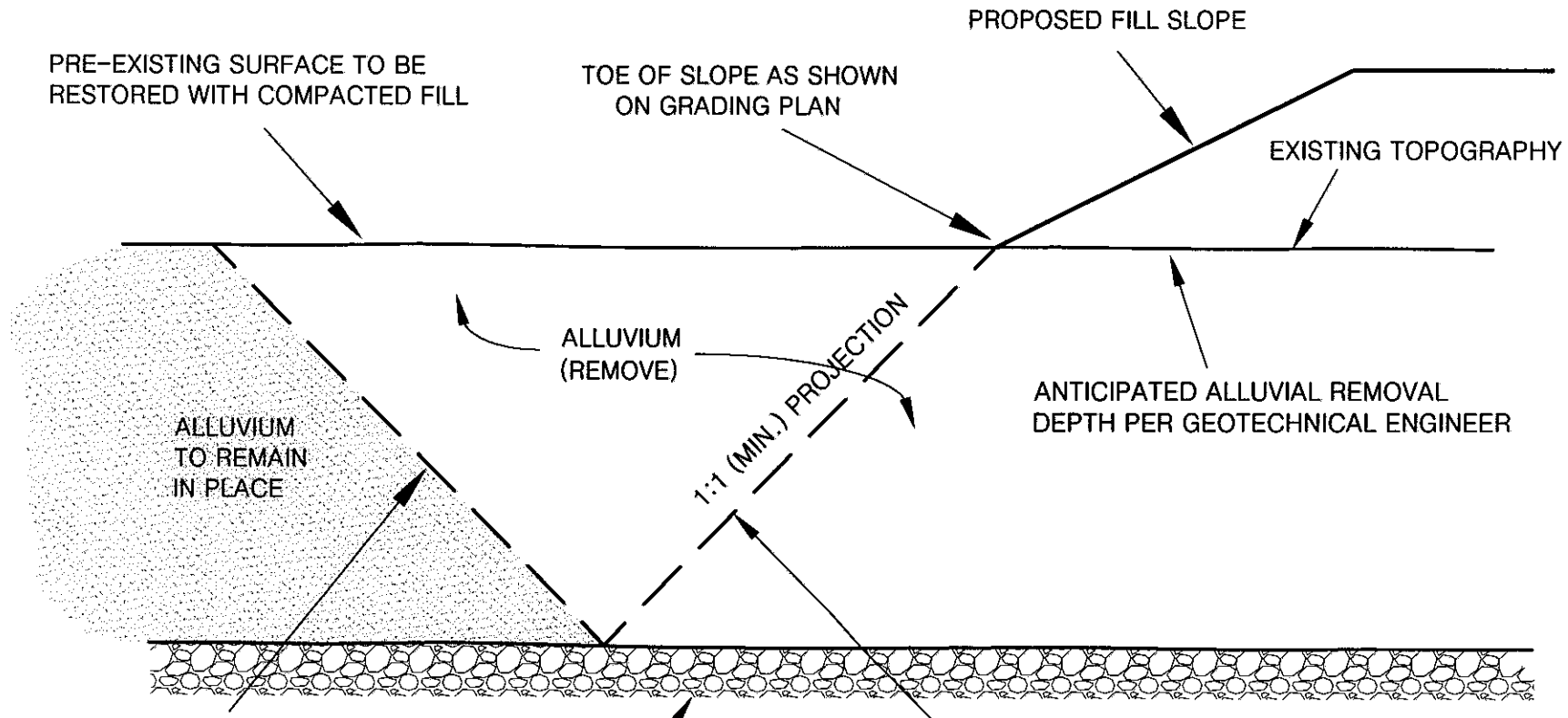
F. FINISHED SLOPES

All finished cut and fill slopes shall be planted and irrigated and/or protected from erosion in accordance with the project specifications, governing agencies, and/or as recommended by a landscape architect.

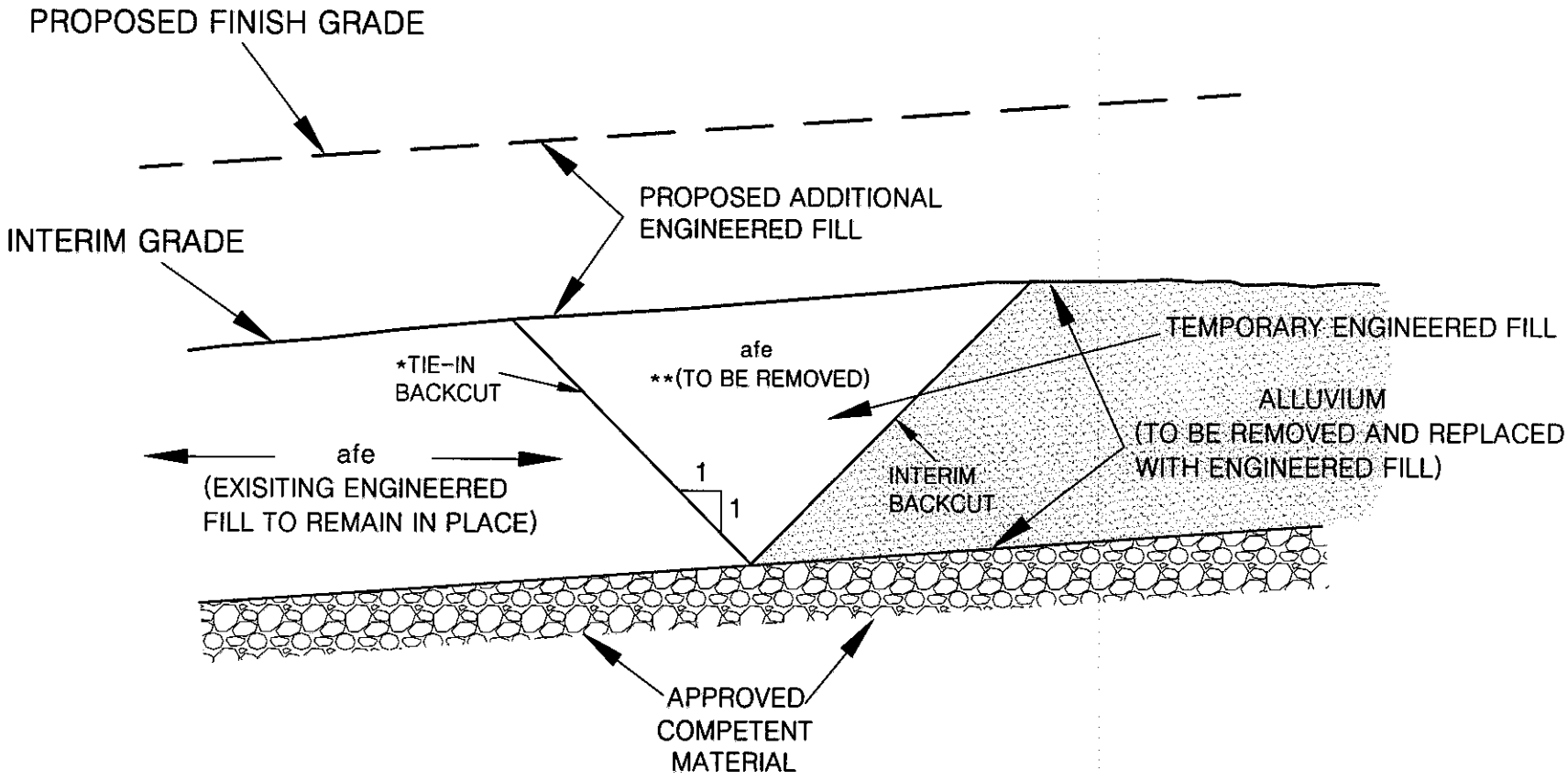
APPENDIX E

Grading Details

DETAIL FOR FILL SLOPE TOEING OUT ON FLAT ALLUVIATED CANYON



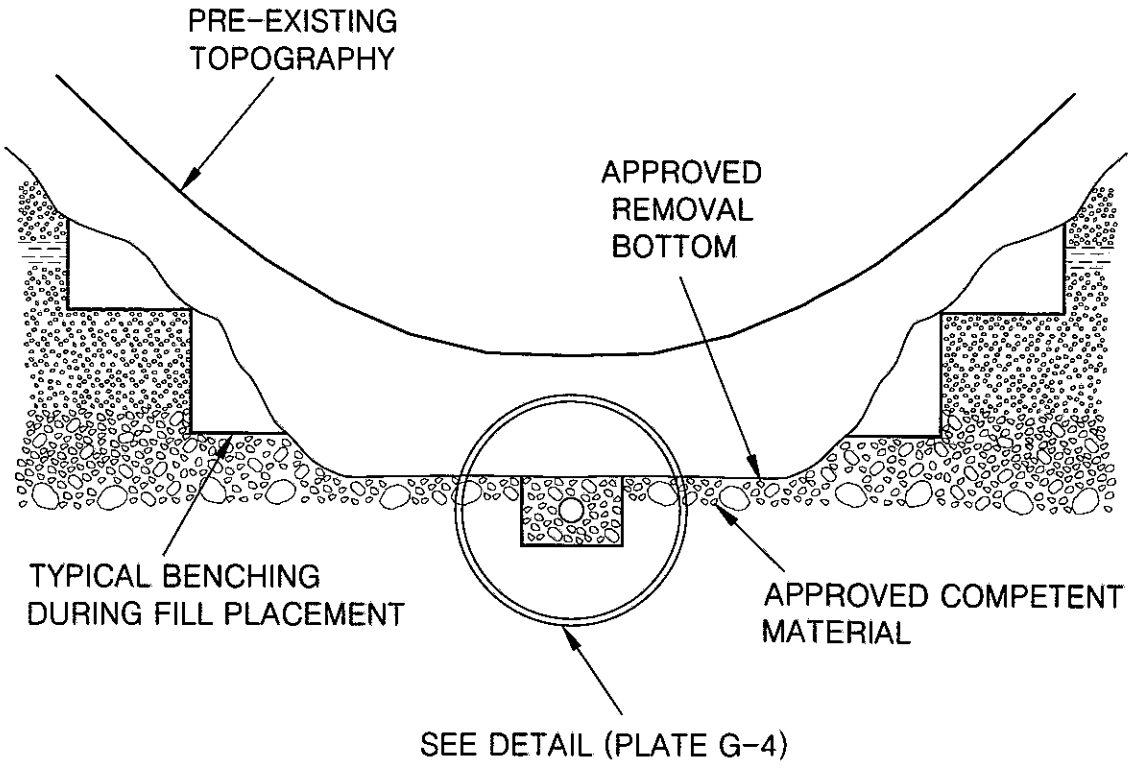
REMOVAL ADJACENT TO EXISTING FILL



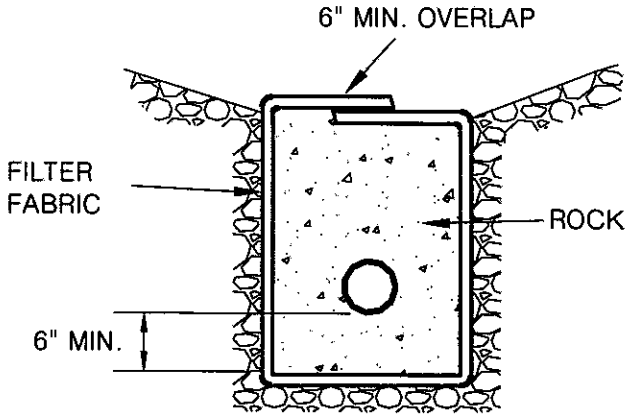
*INITIATE 1:1 TIE-IN BACKCUT TO INTERCEPT TOE OF INTERIM BACKCUT

**AS PART OF TIE-IN FOR ADDITIONAL ENGINEERED FILL

CANYON SUBDRAIN



CANYON SUBDRAIN DETAIL



PERFORATED PIPE SURROUNDED WITH ROCK AND FILTER FABRIC

ROCK: MIN. VOLUME OF 9 CU.FT. PER LINEAR FT. OF 3/4 IN. MAX. ROCK

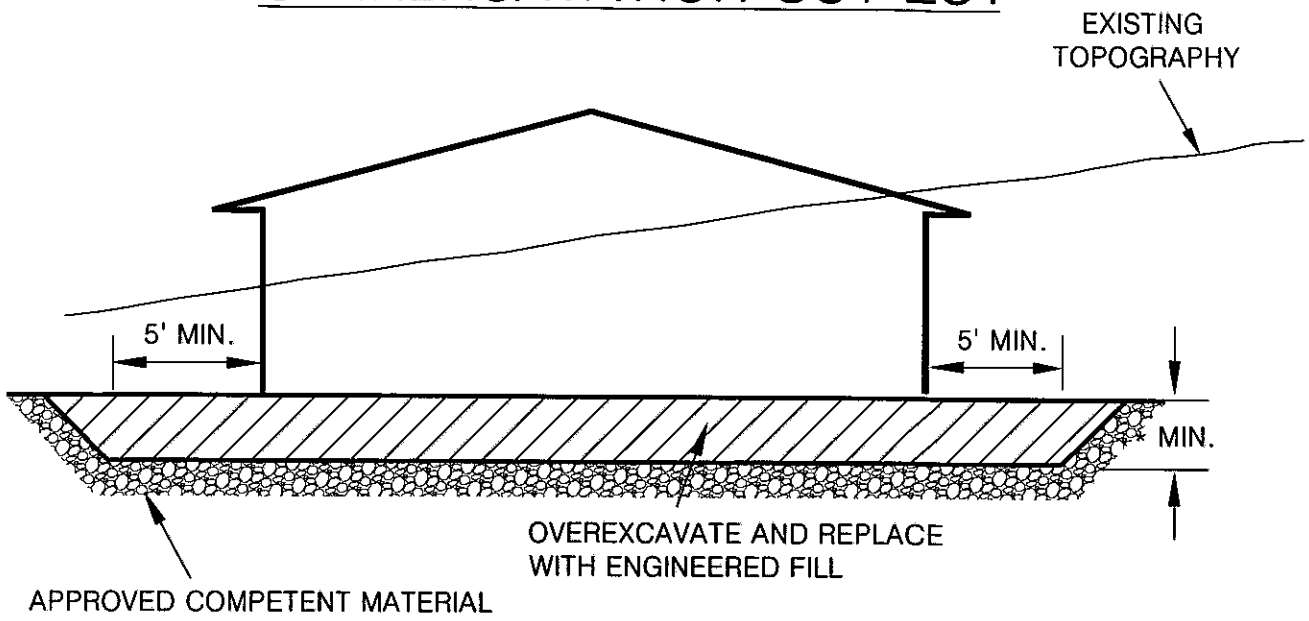
PIPE: 6 IN. ABS OR PVC PIPE WITH A MINIMUM OF 8 PERFORATIONS (1/4-IN. DIA.) PER LINEAL FT. IN BOTTOM HALF OF PIPE ASTM D2751, SDR 35, OR ASTM D3034 OR ASTM D1527, SCHD. 40 ASTM D1785, SCHD. 40

FILTER FABRIC: MIRAFI 140 FILTER FABRIC OR APPROVED EQUIVALENT

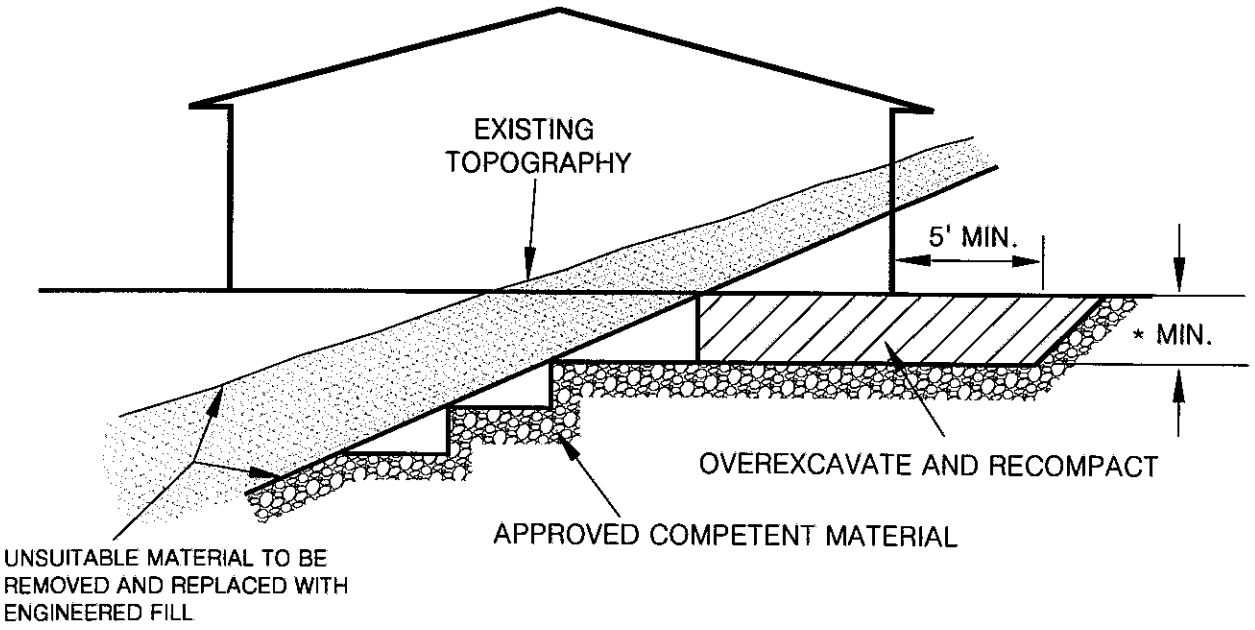
NOTES:

1. FOR CONTINUOUS RUN IN EXCESS OF 500. FT USE 8 IN. DIA. PIPE
2. ENGINEERED FILL PLACED BELOW DRAINS SHALL BE COMPACTED TO 93% OF THE LABORATORY MAXIMUM DRY DENSITY (ASTM:D1557)

OVEREXCAVATION CUT LOT



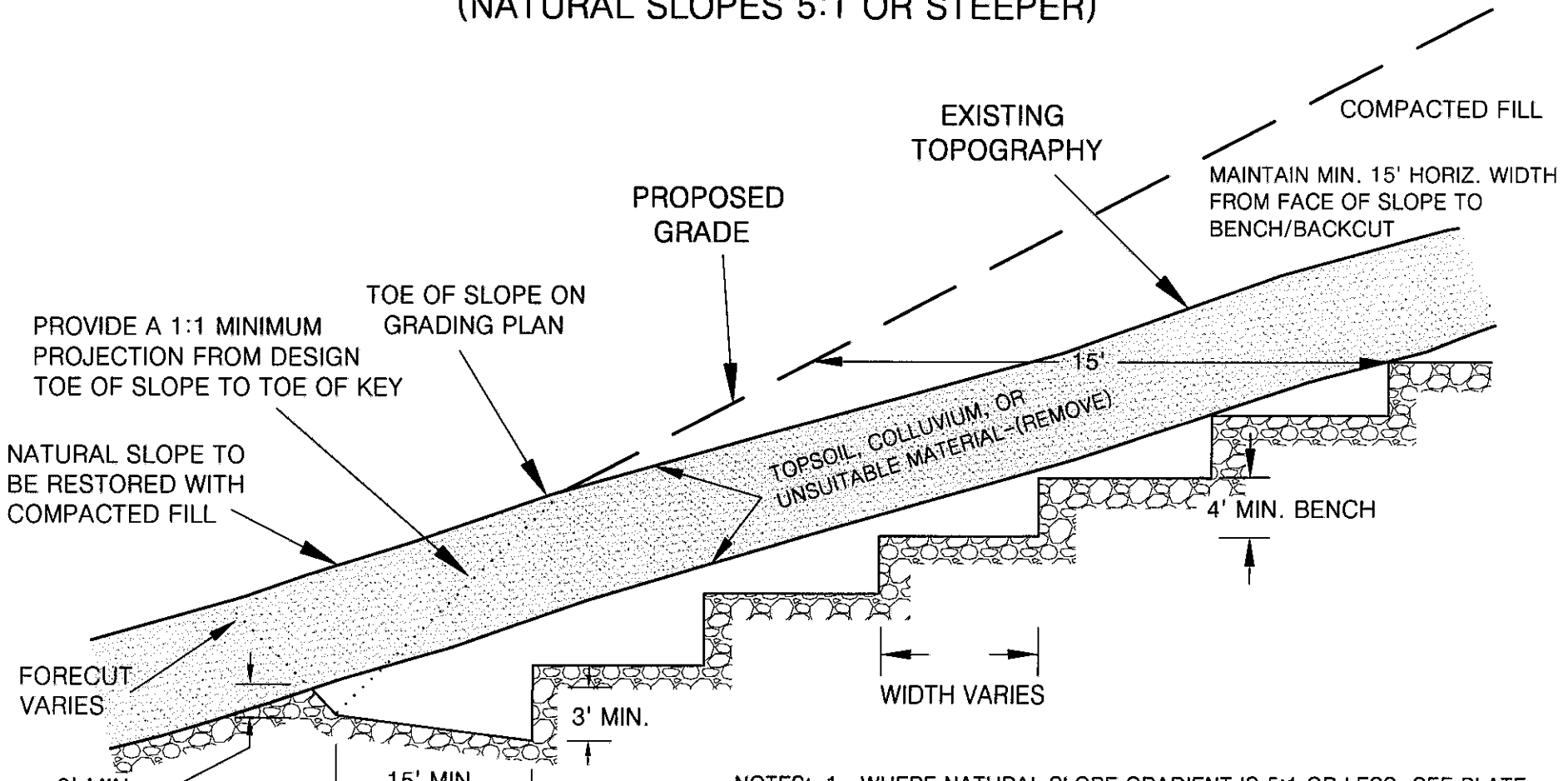
CUT-FILL LOT (TRANSITION)



*NOTE ALL BUILDING PADS SHALL BE OVER EXCAVATED TO A MINIMUM OF 1/3 OF THE MAXIMUM DEPTH OF FILL BELOW THE BUILDING PAD TO A MAXIMUM OF 17 FEET (SEE PLATE G-16)

SIDE HILL SLOPE FILL DETAIL

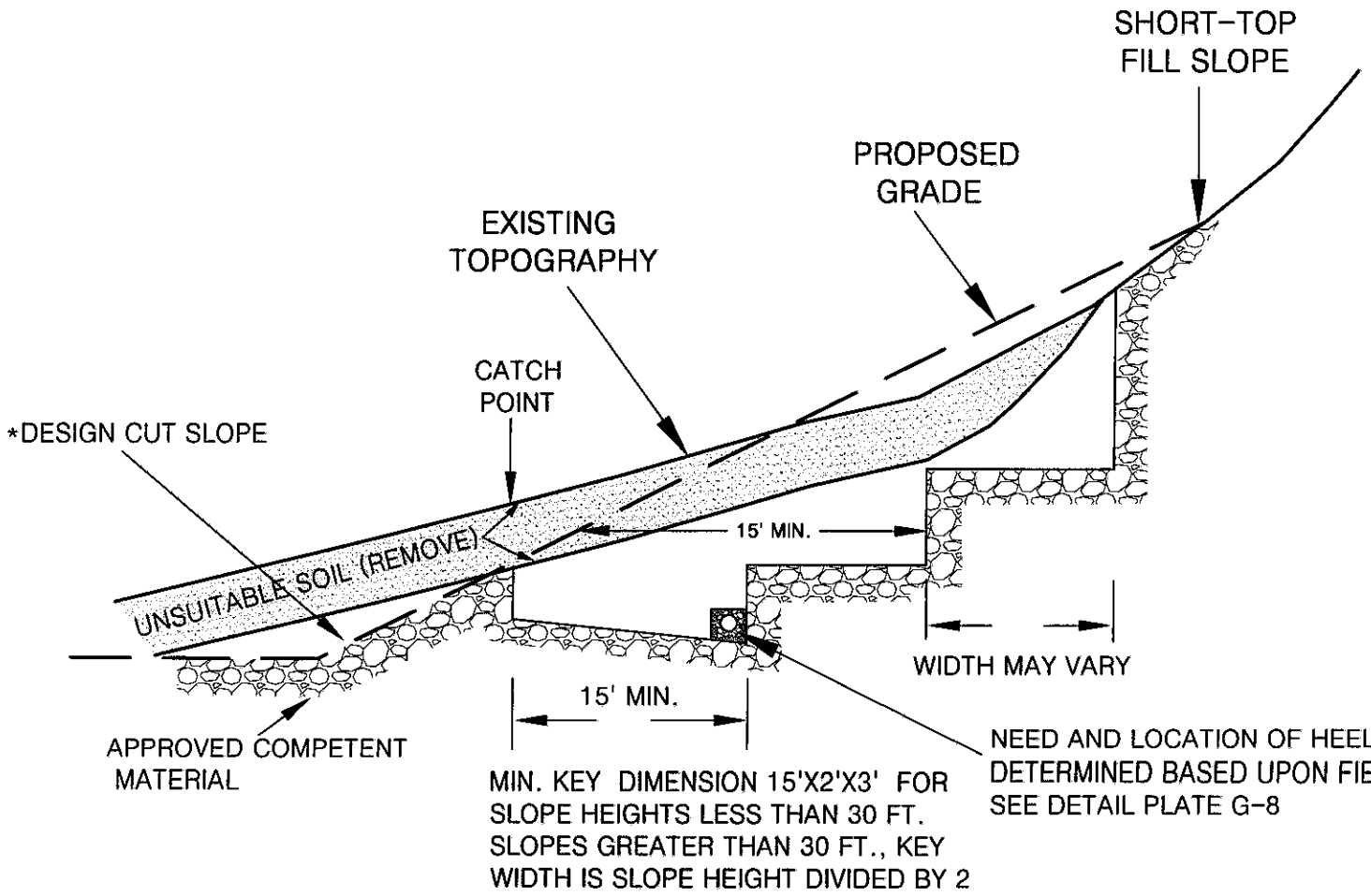
(NATURAL SLOPES 5:1 OR STEEPER)



NOTES:

1. WHERE NATURAL SLOPE GRADIENT IS 5:1 OR LESS, SEE PLATE G-1. WHERE THE NATURAL SLOPE APPROACHES OR EXCEEDS THE DESIGN SLOPE RATIO, SPECIAL RECOMMENDATIONS WILL BE PROVIDED BY THE GEOTECHNICAL ENGINEER.
2. THE NEED FOR AND PLACEMENT OF DRAINS WILL BE DETERMINED BY THE GEOTECHNICAL ENGINEER OR GEOLOGIST BASED UPON EXPOSED FIELD CONDITIONS.

FILL OVER CUT SLOPE DETAIL



*THE CUT PORTION OF THE SLOPE SHOULD BE EXCAVATED AND EVALUATED BY THE ENGINEERING GEOLOGIST/GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTING THE FILL SLOPE

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VER. 1/18

PLATE G-7

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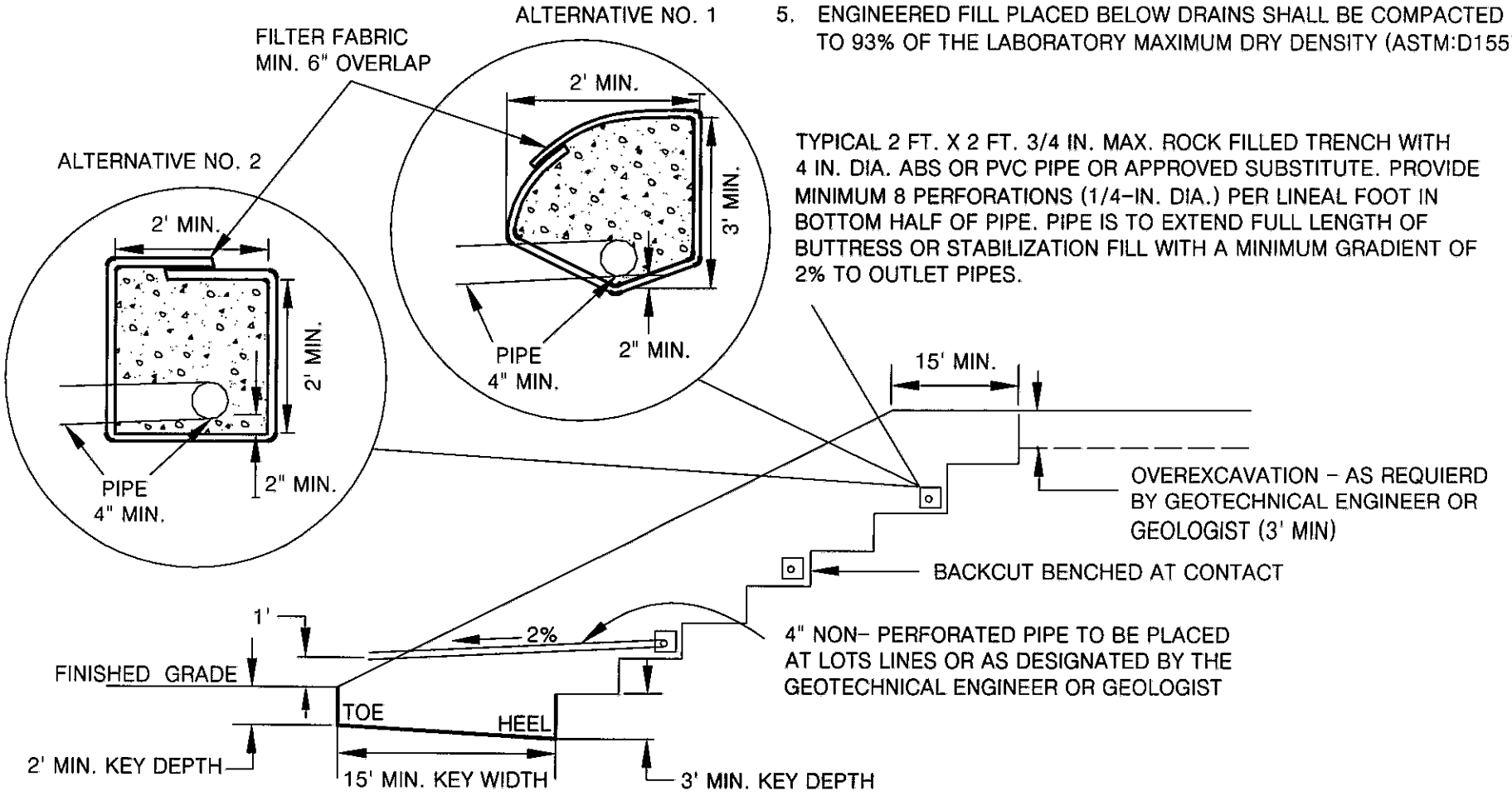
STABILIZATION/BUTTRESS FILL BACKDRAIN

NOTE:

1. ASTM D2751, SDR 35, OR ASTM D3034 OR ASTM D1527, SCHD. 40 ASTM D1785, SCHD. 40
2. SOLID PIPE OUTLETS TO BE PROVIDED EVERY 100 FT. AND JOINED TO PERFORATED BACKDRAIN PIPE WITH "L" OR "T"s. MIN. 2% GRADIENT.
3. GRAVEL TRENCH TO BE FILLED WITH 3/4 IN. MAXIMUM ROCK
4. THE NECESSITY FOR UPPER TIER BACKDRAINS SHALL BE DETERMINED IN THE FIELD BY THE GEOTECHNICAL ENGINEER OR GEOLOGIST. UPPER TIER OUTLETS SHOULD DRAIN INTO PAVED TERRACE DRAINS.
5. ENGINEERED FILL PLACED BELOW DRAINS SHALL BE COMPACTED TO 93% OF THE LABORATORY MAXIMUM DRY DENSITY (ASTM:D1557)



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VER. 3/12

PLATE G-8

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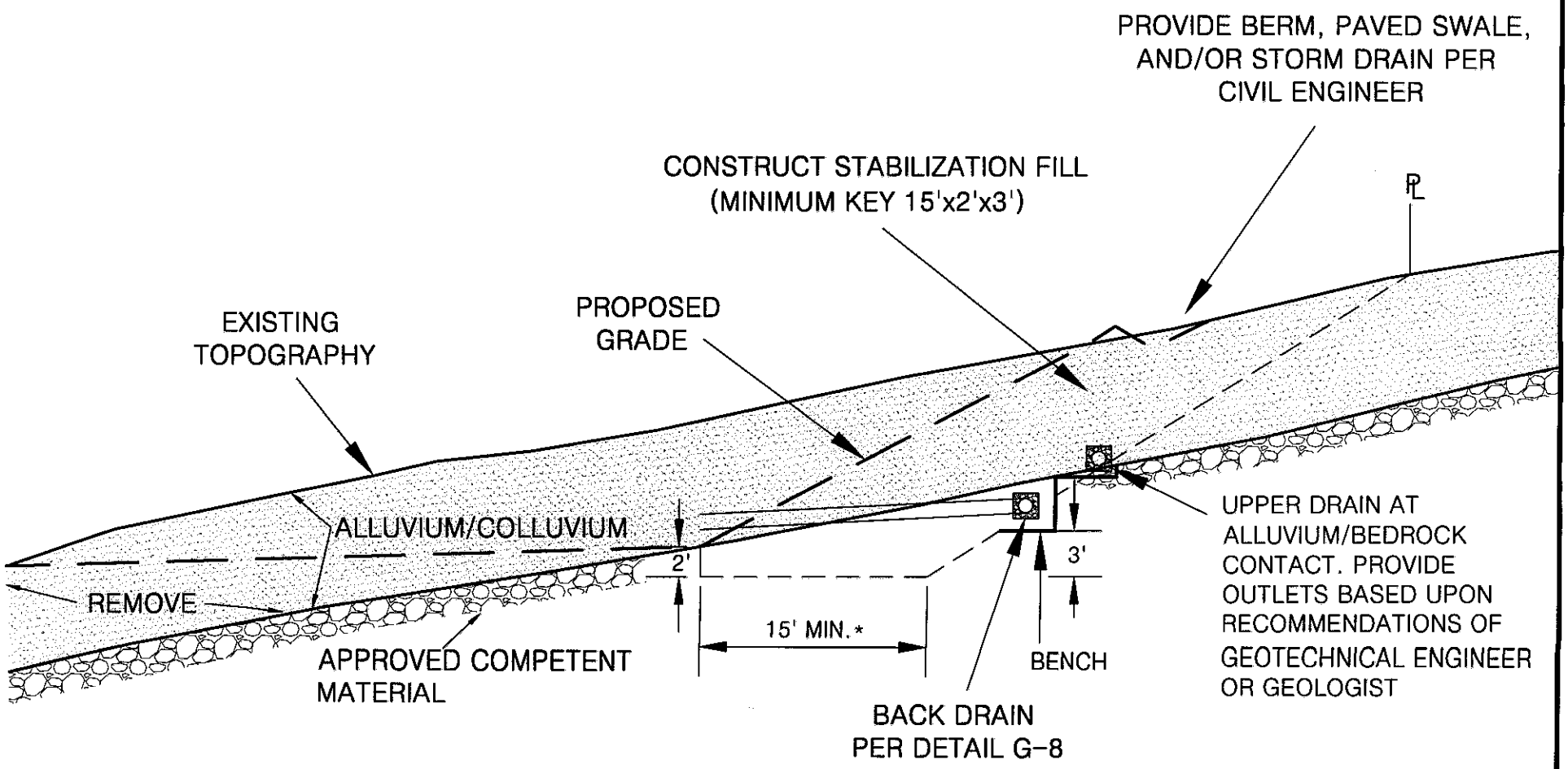
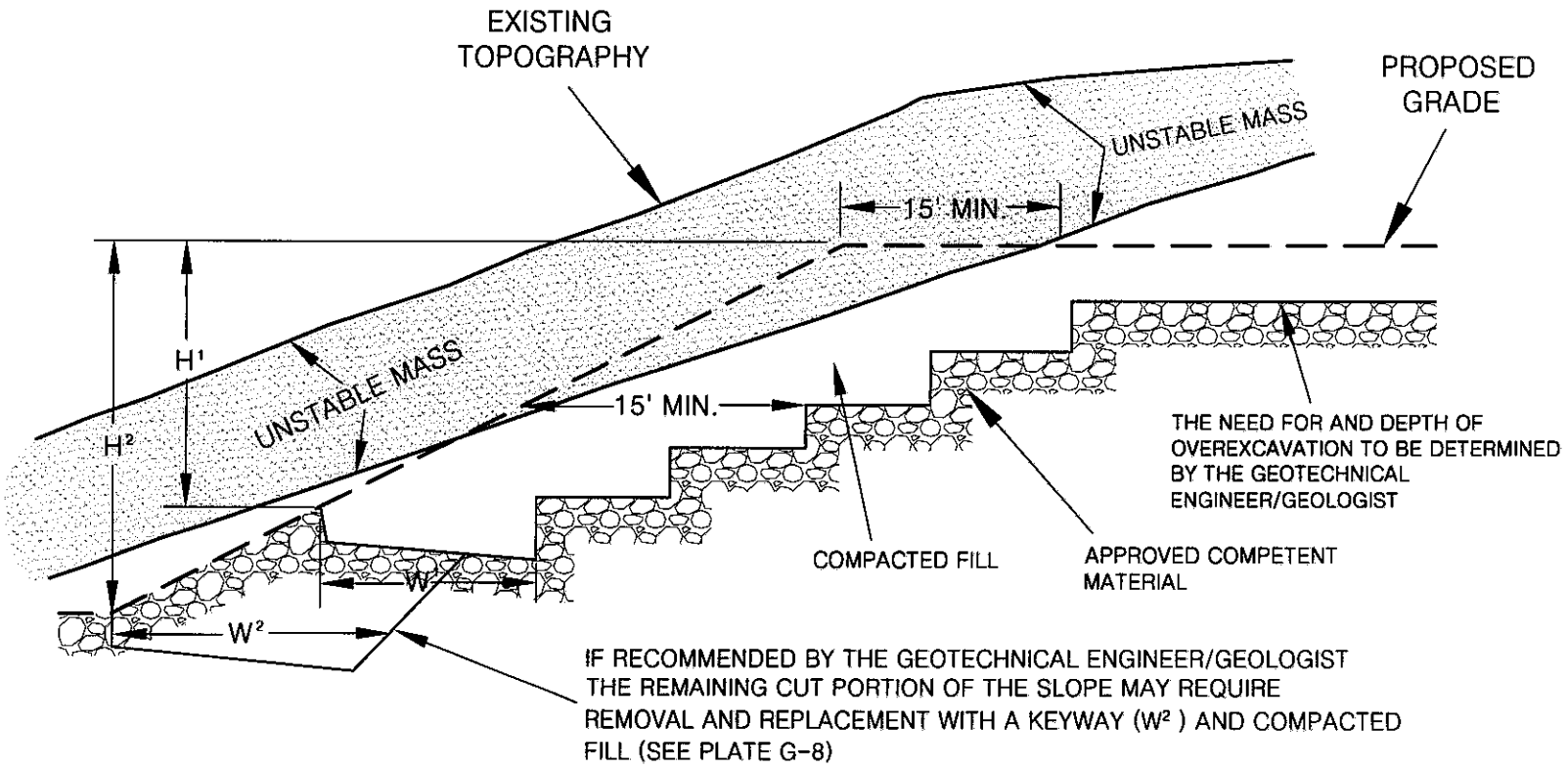
STABILIZATION FILL

(UPSLOPE ALLUVIATED AREA)



* FOR SLOPE HEIGHTS LESS THAN 30 FT. SLOPES GREATER THAN 30 FT., KEY WIDTH IS SLOPE HEIGHT DIVIDED BY 2

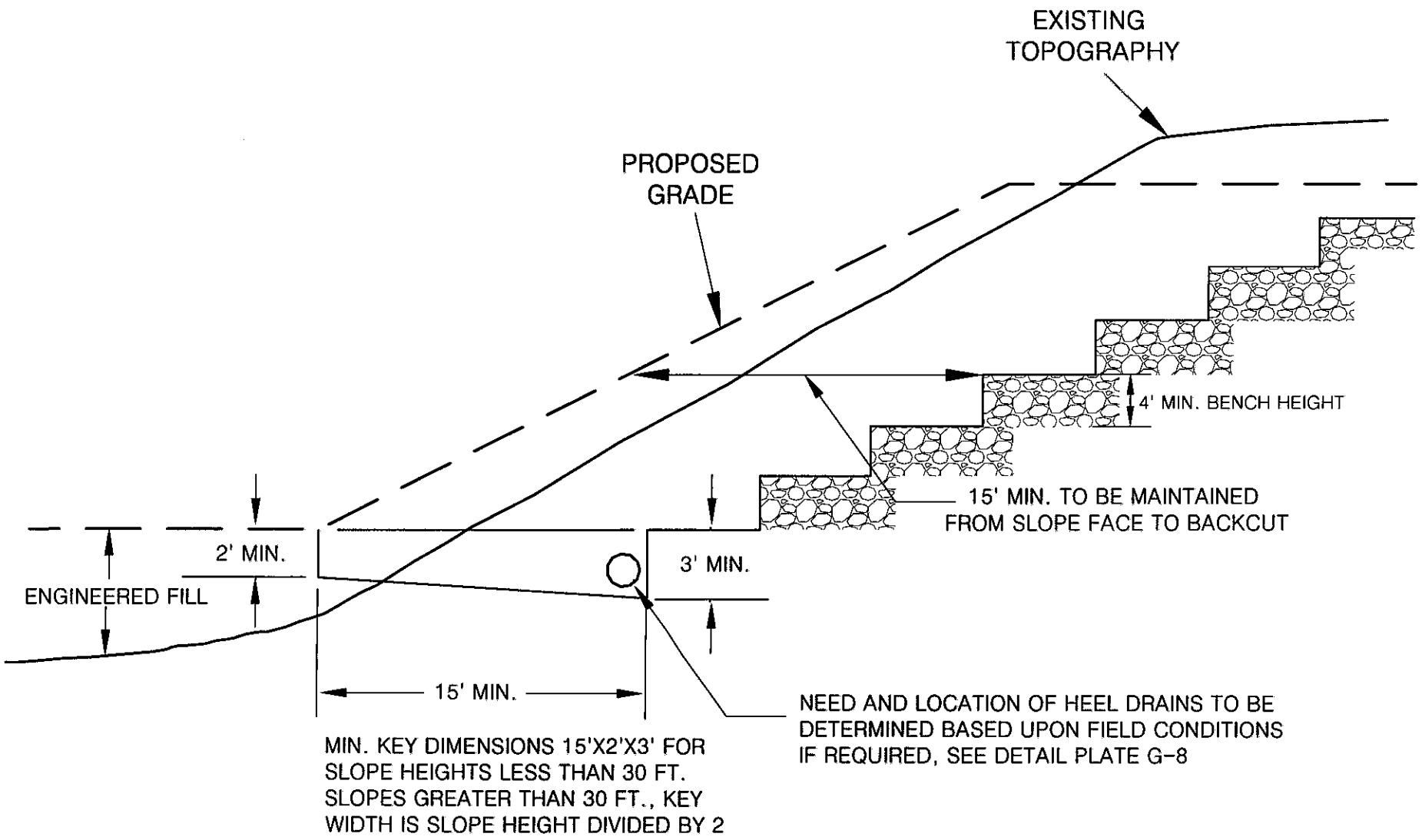
SELECTIVE GRADING DETAIL FOR STABILIZATION FILL
UNSTABLE MATERIAL EXPOSED IN PORTION OF CUT SLOPE



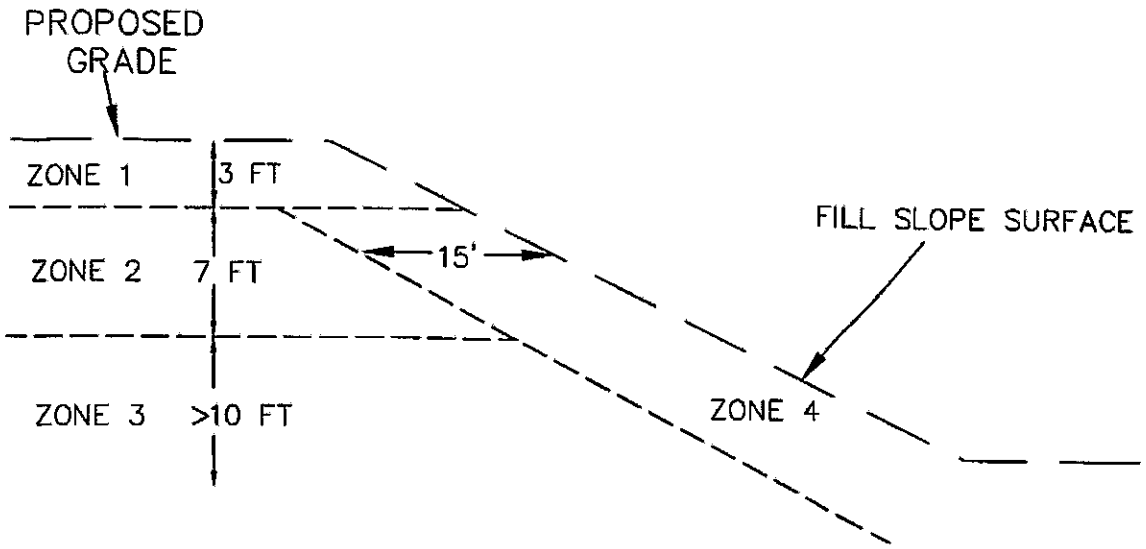
NOTES: 1. BACKDRAINS ARE NOT REQUIRED UNLESS SPECIFIED.

2. "W" SHALL BE EQUIPMENT WIDTH (15') FOR SLOPE HEIGHT LESS THAN 25 FEET. FOR SLOPES GREATER THAN 25 FEET, "W" SHALL BE DETERMINED BY THE PROJECT GEOTECHNICAL ENGINEER/GEOLOGIST. AT NO TIME SHALL "W" BE LESS THAN H/2.

SKIN FILL SLOPE OVER NATURAL GROUND



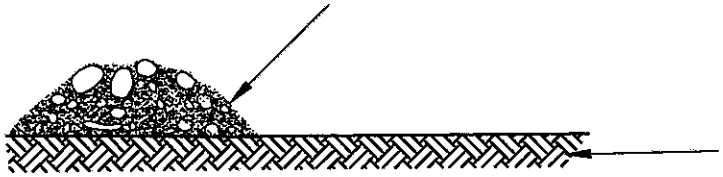
DETAIL FOR MAXIMUM PARTICLE DIMENSION



ZONE	DEPTH	PARTICLE MAX. DIMENSION	PLACEMENT METHOD
1	0-3 ft.	≤1.0 ft.	STANDARD OR CONVENTIONAL COMPACTION METHODS (SEE EARTHWORK SPECIFICATIONS)
2	3-10 ft.	≤2.0 ft.	ROCK BLANKETS (SEE PLATE G-13)
3	>10 ft.	≤8.0 ft.	ROCK BLANKETS (PLATE G-13) ROCK WINDROW (PLATE G-14) INDIVIDUAL ROCK BURIED (PLATE G-15)
4	15 HORIZONTAL FEET FROM FILL SLOPE FACE	≤1.0 ft.	STANDARD OR CONVENTIONAL COMPACTION METHODS (SEE EARTHWORK SPECIFICATIONS)

ROCK BLANKET DETAILS

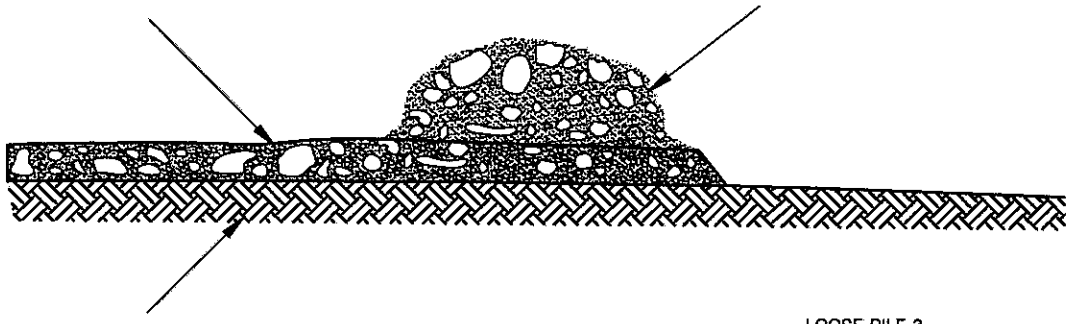
LOOSE PILE 1
LOOSE, DUMPED ROCK, GRAVEL AND SAND MIXTURE REMOVE FRAGMENTS LARGER THAT 2 FEET FOR ISOLATED BURIAL (PLATE G-15) OR WINDROW (PLATE G-10)



APPROVED BOTTOM, OR TOP OF PREVIOUSLY APPROVED BLANKET FILL

COMPACT PILE 1
SPREAD LOOSE PILE FORWARD WITH HEAVY TRACKED DOZER (D-8 OR LARGER). HEAVILY WATER, TRACK, AND APPLY ADDITIONAL SAND AND GRAVEL AS NECESSARY TO FILL VOIDS AND CREATE A DENSE MATRIX OF ROCK, COBBLES, GRAVEL AND SAND (2 FOOT MAXIMUM THICKNESS)

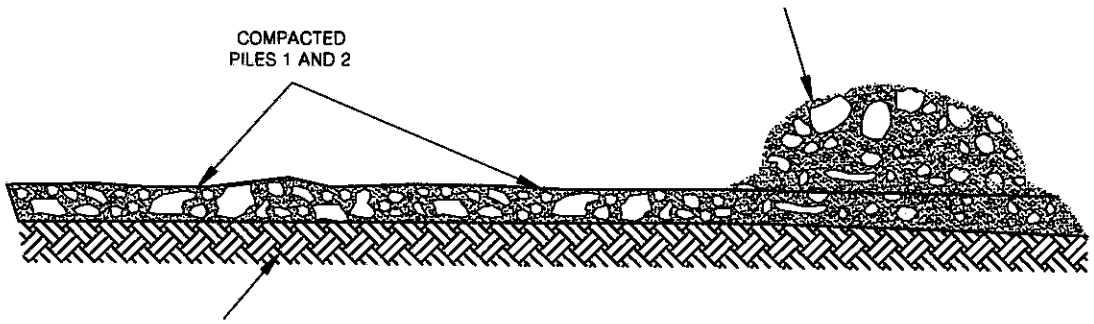
LOOSE PILE 2
DUMP SUCCESSIVE PILES OF LOOSE ROCK, GRAVEL AND SAND MIXTURE ON FORWARD EDGE OF PREVIOUSLY COMPACTED LIFT WITH TRUCKS AND/OR SCRAPERS. USE PREVIOUS LIFT TO ACCESS AND FURTHER COMPACT PILE 1.



APPROVED BOTTOM, OR TOP OF PREVIOUSLY APPROVED BLANKET FILL

LOOSE PILE 3
DUMP SUCCESSIVE PILES OF LOOSE ROCK, GRAVEL AND SAND MIXTURE ON FORWARD EDGE OF PREVIOUSLY COMPACTED LIFT WITH TRUCKS AND/OR SCRAPERS. USE PREVIOUS LIFT TO ACCESS AND FURTHER COMPACT EXISTING BLANKET.

COMPACTED PILES 1 AND 2

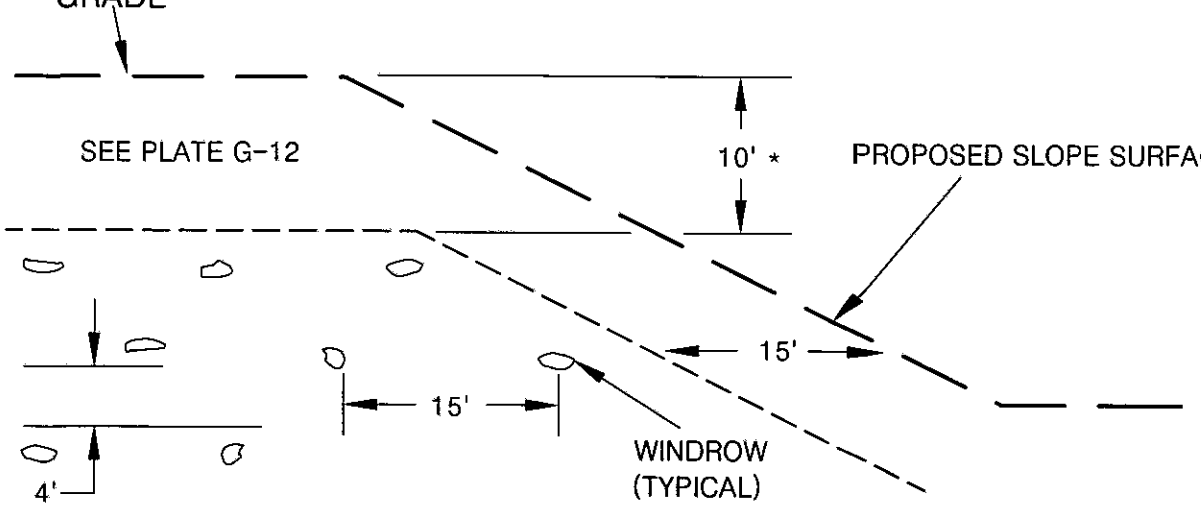


APPROVED BOTTOM, OR TOP OF PREVIOUSLY APPROVED BLANKET FILL

OBSERVATION TESTING AND APPROVAL PROCEDURES

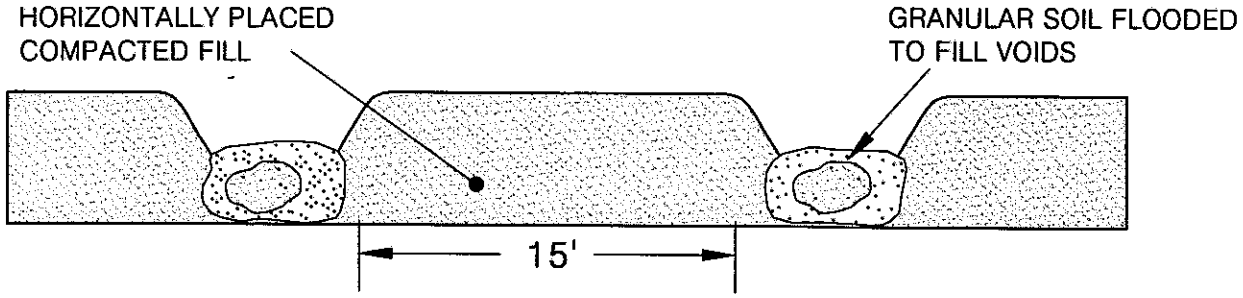
OBSERVE EQUIPMENT. SCRAPERS AND TRUCKS SHOULD BE FULLY SUPPORTED ON BLANKET WITHOUT SIGNIFICANT YIELDING. EXCAVATE TEST/OBSERVATION PITS TO CONFIRM EXISTENCE OF MIXTURE OF VARIOUS PARTICLE SIZES, WITHOUT SIGNIFICANT VOIDS, AND FORMING A DENSE, COMPACTED FILL MATRIX. TEST BY ASTM D1556, D2922 AND/OR D3017 WHEN APPROPRIATE. RECORD LIMITS AND ELEVATION OF BLANKET. ALL FILL AND COMPACTION OPERATIONS TO BE CONDUCTED UNDER THE OBSERVATION OF THE GEOTECHNICAL ENGINEER. SUBSEQUENT LIFTS TO BE APPLIED ONLY AFTER OBSERVATION AND CONFIRMATION OF SUITABILITY OF FILL AND RELEASE BY THE GEOTECHNICAL ENGINEER. BLANKETS TO BE CONSTRUCTED IN ACCORDANCE WITH PLATE G-12.

ROCK WINDROW DETAIL



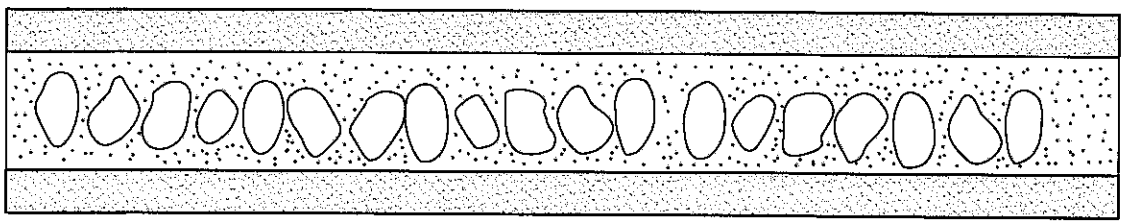
NOTE: OVERSIZED MATERIAL SHOULD BE REMOVED FROM THE 15' CLEAR ZONES WITH SPECIAL EQUIPMENT, SUCH AS A ROCK RAKE, PRIOR TO PLACING THE NEXT FILL LIFT.
*VARIANCES TO THE ABOVE ROCK HOLD DOWN MAY BE GRANTED SUBJECT TO APPROVAL BY THE OWNER, GEOTECHNICAL ENGINEER, AND GOVERNING AGENCY

TYPICAL WINDROW DETAIL (END VIEW)

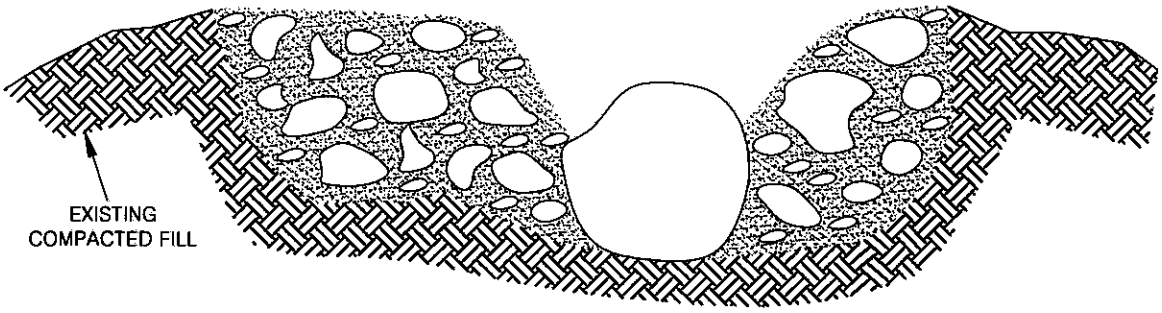


NOTE: COMPACTED FILL SHALL BE BROUGHT UP TO A HIGHER ELEVATION ALONG EACH WINDROW SO GRANULAR SOIL CAN BE FLOODED IN A "TRENCH CONDITION".

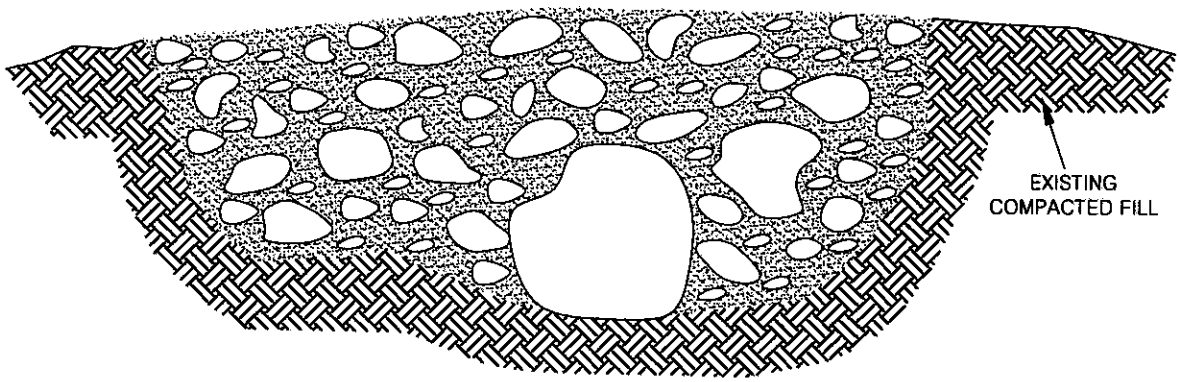
PROFILE VIEW



ISOLATED ROCK BURIAL DETAILS

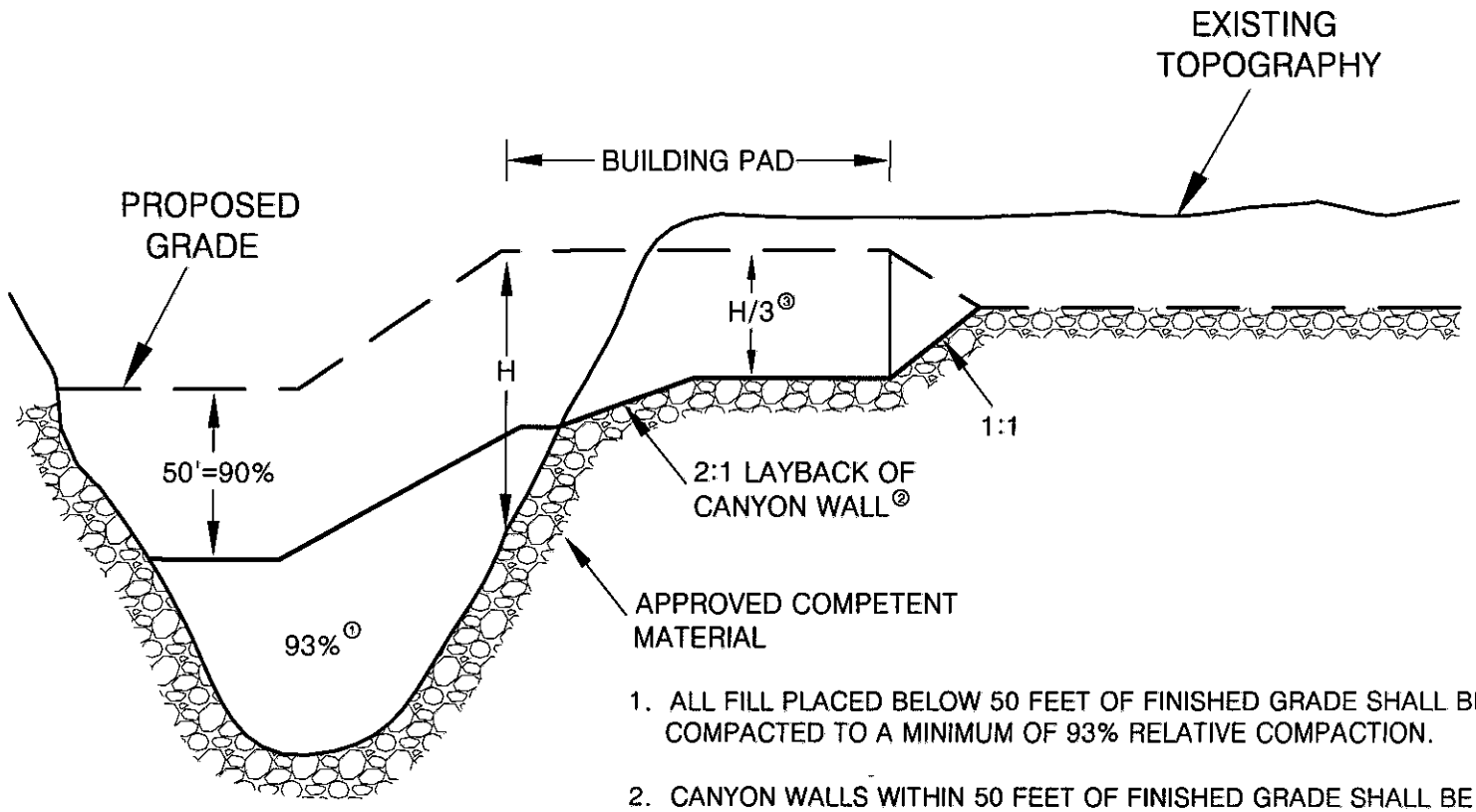


EXCAVATE HOLE INTO EXISTING FILL PRISM, PLACE BOULDER (< 8 feet in maximum dimension) INTO EXISTING COMPACTED FILL. SURROUND WITH SAND, GRAVEL, COBBLES AND WATER HEAVILY. TRACK WITH D8 OR LARGER EQUIPMENT UNTIL RESULTING FILL FULLY SUPPORTS EQUIPMENT. OBSERVE AND/OR TEST IN ACCORDANCE WITH ASTM D1556, D2922 OR D3017. ROCKS LARGER THAN 8 FEET SHALL BE FURTHER REDUCED IN SIZE BY SECONDARY BREAKING.



RELATIVE COMPACTION VS. DEPTH

CANYON WALL LAY BACK
DIFFERENTIAL FILL OVEREXCAVATION DETAILS



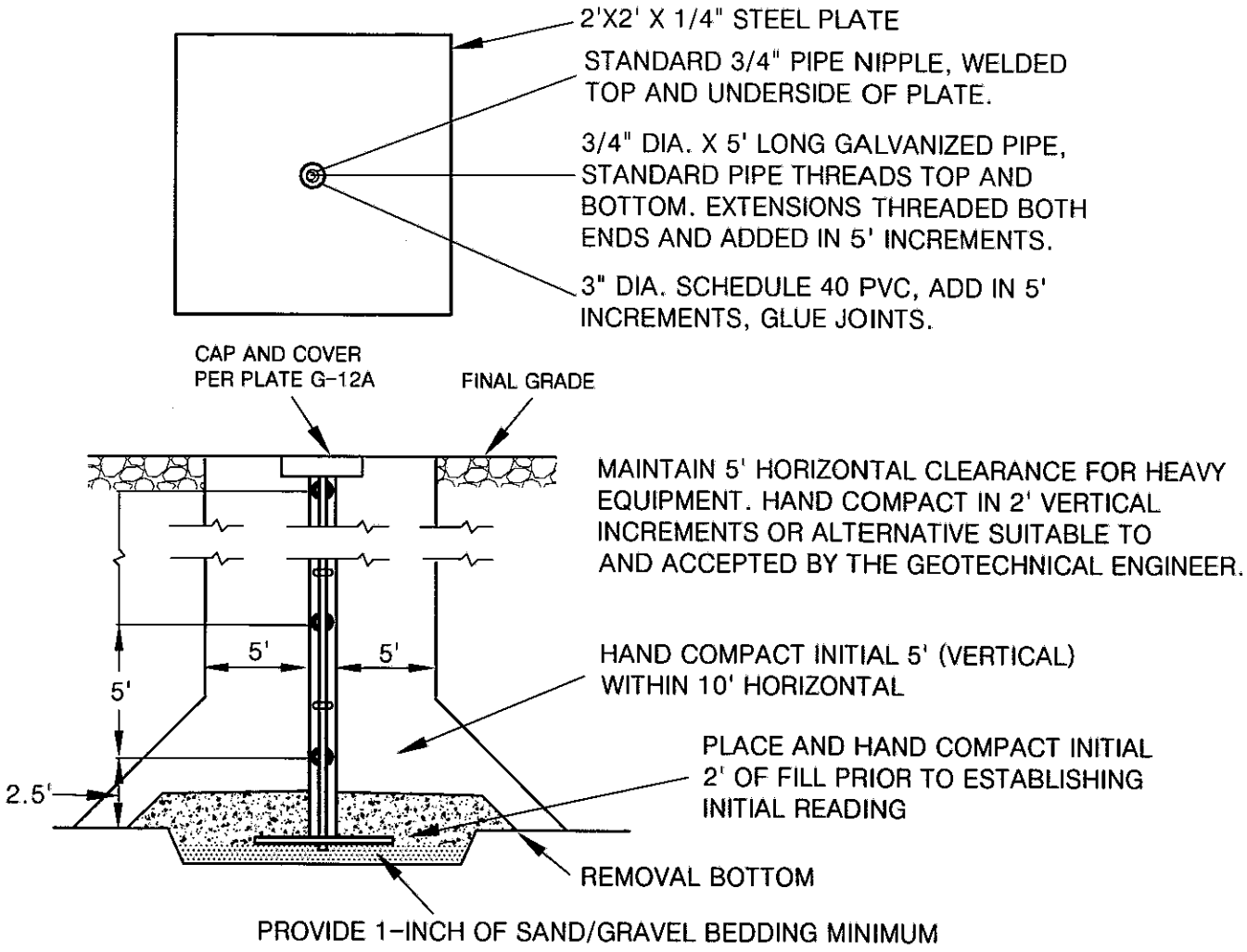
1. ALL FILL PLACED BELOW 50 FEET OF FINISHED GRADE SHALL BE COMPACTED TO A MINIMUM OF 93% RELATIVE COMPACTION.

2. CANYON WALLS WITHIN 50 FEET OF FINISHED GRADE SHALL BE LAID BACK TO A SLOPE RATIO OF 2:1 OR FLATTER.

3. ALL BUILDING PADS SHALL BE OVER EXCAVATED TO A MINIMUM OF 1/3 OF THE MAXIMUM DEPTH OF FILL BELOW THE BUILDING PAD TO A MAXIMUM OF 17 FEET.

4. IF THE 2:1 LAY BACK OF THE CANYON WALL IS IMPRACTICAL, THEN AS AN ALTERNATIVE THE INCREASED COMPACTION STANDARDS IN NOTE 1 SHOULD BE EXTENDED UP TO H/3 AND THE LAY BACK WILL NOT BE REQUIRED.

SETTLEMENT PLATE DETAIL



NOTES:

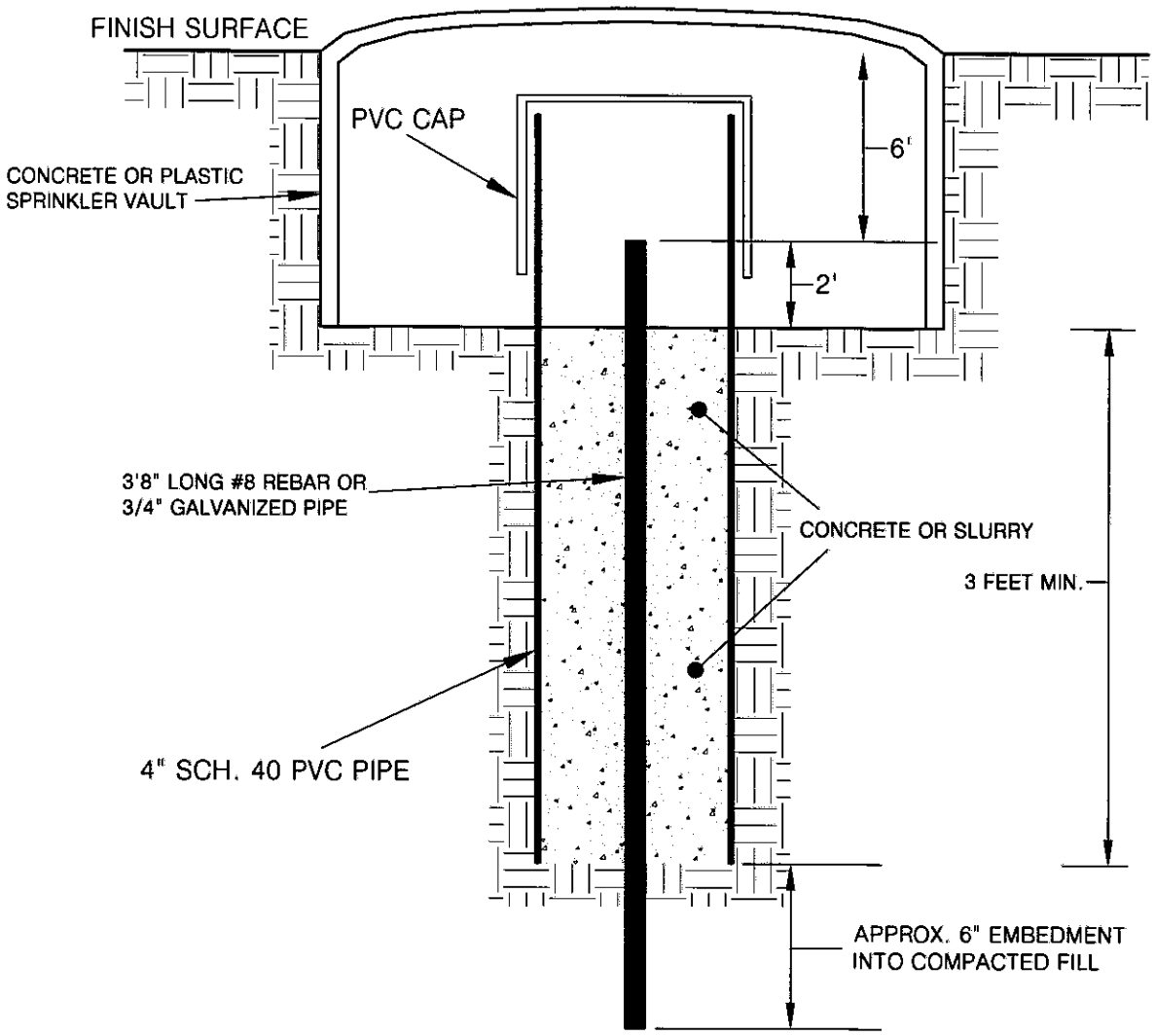
1) LOCATIONS OF SETTLEMENT PLATES SHALL BE CLEARLY MARKED AND READILY VISIBLE (RED FLAGGED) TO EQUIPMENT OPERATORS.

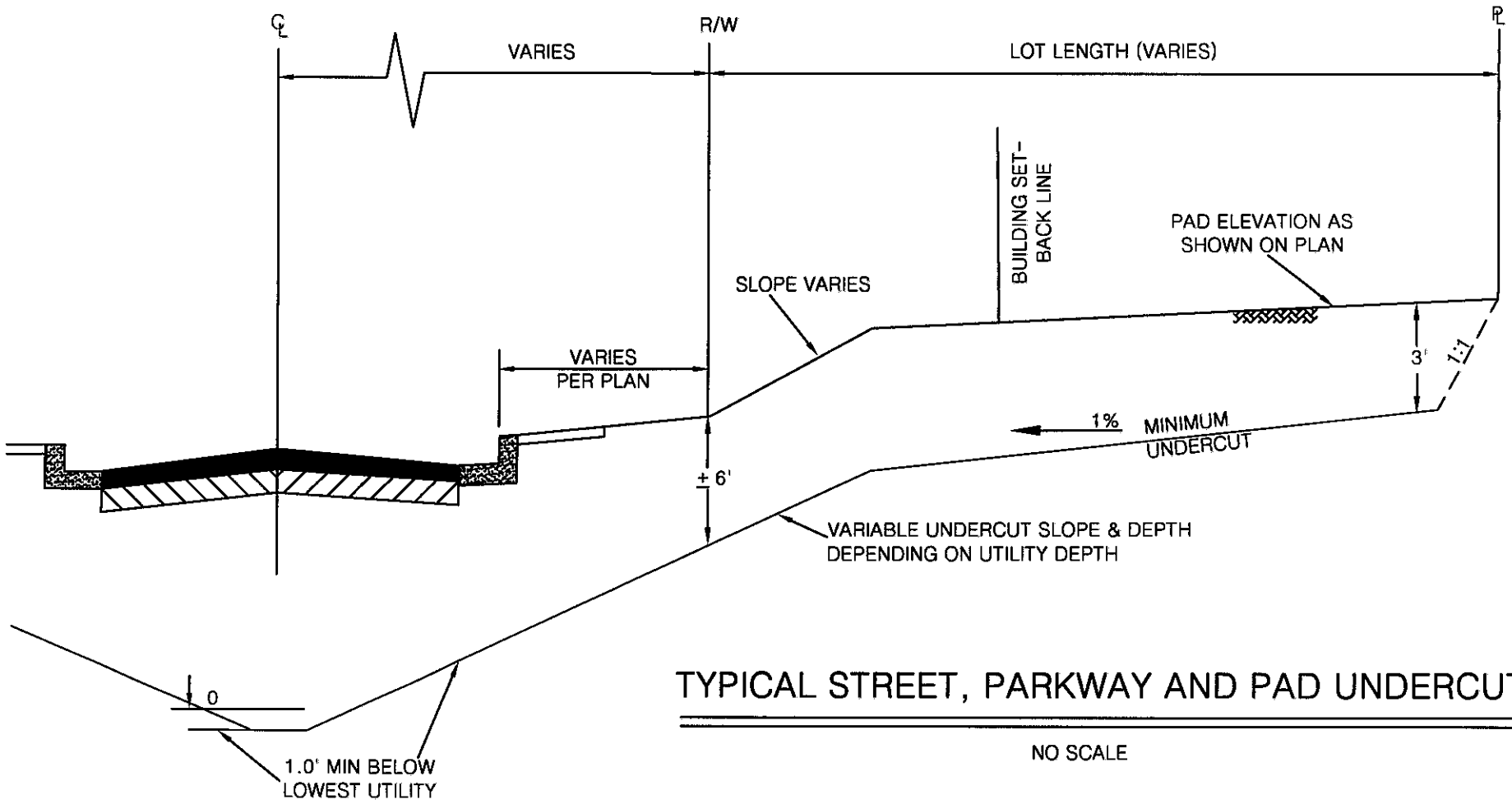
2) CONTRACTOR SHALL MAINTAIN 10' HORIZONTAL CLEARANCE FOR HEAVY EQUIPMENT WITHIN 5' (VERTICAL) OF PLATE BASE. FILL WITHIN CLEARANCE AREA SHALL BE HAND COMPACTED TO PROJECT SPECIFICATIONS OR COMPACTED BY ALTERNATIVE APPROVED BY THE GEOTECHNICAL ENGINEER.

3) AFTER 5' (VERTICAL) OF FILL IS IN PLACE, CONTRACTOR SHALL MAINTAIN 5' HORIZONTAL EQUIPMENT CLEARANCE. FILL IN CLEARANCE AREA SHALL BE HAND COMPACTED (OR APPROVED ALTERNATIVE) IN VERTICAL INCREMENTS NOT TO EXCEED 2 FEET.

4) IN THE EVENT OF DAMAGE TO SETTLEMENT PLATE OR EXTENSION RESULTING FROM EQUIPMENT OPERATING WITHIN PRESCRIBED CLEARANCE AREA, CONTRACTOR SHALL IMMEDIATELY NOTIFY GEOTECHNICAL ENGINEER AND SHALL BE RESPONSIBLE FOR RESTORING THE SETTLEMENT PLATE AND EXTENSION RODS TO WORKING ORDER.

SURFACE SETTLEMENT MONUMENT DETAIL





TYPICAL STREET, PARKWAY AND PAD UNDERCUT

NO SCALE

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VER. 3/13

PLATE G-19

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LEGEND

- afu — ARTIFICIAL FILL-UNDOCUMENTED
- Qal — ALLUVIUM
- Qoa — OLDER ALLUVIUM
- $Qvof_3$ — VERY OLD ALLUVIAL FAN DEPOSITS
- Qlo — SEDIMENTARY DEPOSITS OF LIVE OAK CANYON
- T-22 — APPROXIMATE LOCATION OF BACKHOE TEST PIT (AGS, 2000)
- B-37 — APPROXIMATE LOCATION OF BUCKET AUGER BORING (PSE)
- AGS-1 — APPROXIMATE LOCATION OF HOLLOW STEM AUGER BORING (AGS, 2020)
- SCG-1 — APPROXIMATE LOCATION OF HOLLOW STEM AUGER BORING (SCG, 2020)
- B-1 — APPROXIMATE LOCATION OF HOLLOW STEM AUGER BORING (THIS REPORT)
- TP-1 — APPROXIMATE LOCATION OF BACKHOE TEST PIT (THIS REPORT)
- APPROXIMATE LOCATION OF GEOLOGIC CONTACT
- (10) — ANTICIPATED REMOVAL DEPTH (IN FEET)
- O.X.5 — PROPOSED OVEREXCATION DEPTH (IN FEET)
- PROPOSED KEYWAY
- (8) — PROPOSED SUBDRAIN WITH SIZE IN INCHES

PARCEL "A"
LLA. 05-002
INST. NO. 2005-0324926 O.R.

0-25' Qal
25-36' Qoa
T.D.=36'
No Water
No Caving

B-81

PROJECT BOUNDARY

15X2X3 Keyway

285 BENCH

280 BENCH

ST15

afu

$Qvof_3$

EXISTING STRUCTURES TO BE REMOVED, TYP.

0-4' Qal
4-9.5' $Qvof_3$
T.D.=9.5'
No Water
No Caving

O.X.5

AGS-1

0-8' Qal
8-25.9' Qoa
T.D.=25.9'
No Water
No Caving

15X2X3 Keyway

GRADING AND PROPOSED FUTURE FREEWAY OFF-RAMP PER SEPARATE CALTRANS PLANS

INTERSTATE 10

EXISTING 30" RCP

EXISTING 36" RCP

EXISTING 48" RCP

GRADING LIMITS

CALTRANS R/W & PROJECT BOUNDARY

GRADING AVOIDANCE AREA, TYP.

WRITTEN GRADING PERMIT CLEARANCE OR PERMITS REQUIRED FROM CALTRANS PRIOR TO START OF GRADING

GRADING AND OFF-RAMP PER SEPARATE CALTRANS PLANS

CDFW JURISDICTIONAL BOUNDARY LINE, TYP.

RWQCB JURISDICTIONAL BOUNDARY LINE, TYP.

40' WIDE ROAD & UTILITY EASEMENT (WOODHOUSE RD.) (24)

Qlo

ROBERTS ROAD

R/W

Qal

LOT 2

LOT 1

0-30' Qal
30-34' Qlo
T.D.=34'
No Water
No Caving
>80% Sat @ 15'

EXISTING MISC. ITEMS TO BE REMOVED & DISPOSED

EXISTING DIRT ROAD

PSE B-105

CAUTION: EXISTING 2" GAS LINE TO BE RELOCATED PER SEPARATE UTILITY WORK ORDER. CONTRACTOR TO POTHOLE AND VERIFY LOCATION.

EXISTING POLES AND POWER LINES TO BE REMOVED, TYP.

B-7

0-26' Qal
T.D.=26'
No Water
No Caving
>80% Sat @ 15'

0-15' Qal
15-50.1' Qoa
T.D.=50.1'
No Water
No Caving

AGS-17

0-25' Qvof
T.D.=25'
No Water
No Caving

SCG-2

0-6.5' Qal
6.5-11' $Qvof_3$
T.D.=11'
No Water
No Caving

TP-14

0-2' Topsoil
2-11' Qal
T.D.=11'

0-14' Qal
14-16' Qlo
T.D.=16'
No Water

15X2X3 Keyway

0-13.5' Qal
13.5-49.3' Qoa
T.D.=49.3'
No Water
No Caving

SCG-1

EXISTING WALLS TO BE REMOVED

EXISTING STRUCTURES TO BE REMOVED

APN 413-190-006

SCALE: 1" = 60'

CONSTRUCTION NOTES:

1. CONSTRUCT 6' CONCRETE TERRACE DRAIN PER DETAIL SHEET 3.
2. CONSTRUCT 3' CONCRETE DOWN-DRAIN PER DETAIL SHEET 3.
3. PROPOSE UNDER-SIDEWALK DRAIN PER STREET IMPROVEMENTS PM 37862
4. PROPOSED RETAINING WALL PER SEPARATE PERMIT FROM THE BUILDING DEPARTMENT.
5. CONSTRUCT 3' CONCRETE V-DITCH PER DETAIL ON SHEET 3
7. CONSTRUCT 6" THICK CONCRETE SPLASH WALL PER DETAIL ON SHEET 3
9. CONSTRUCT BERM PER TOP OF SLOPE BERM PER DETAIL ON SHEET 3
10. CONSTRUCT DOWN DRAIN INTERSECTION PER DETAIL ON SHEET 2

DISPOSITION NOTES:

1. REMOVE EXISTING ITEM AS NOTED.
3. EXISTING POLES AND POWER LINES TO BE REMOVED PER SEPARATE UTILITY WORK ORDER
4. REMOVE EXISTING CHAIN LINK FENCE

"AS-BUILT"
THE RECEIPT OF AS-BUILT PLANS AND CITY'S ACCEPTANCE THEREOF DOES NOT ABSOLVE THE ENGINEER OF WORK OF ANY RESPONSIBILITY FOR THE PROJECT DESIGN.
ENGINEER OF WORK: _____
DATE: _____
RCE: _____
EXP. _____

SEE SHEET 12

SEE SHEET 5

EXISTING EASEMENT NOTES:

(24) EASEMENT(s) FOR THE PURPOSES SHOWN BELOW & RIGHTS INCIDENTAL THERETO AS GRANTED IN A DOCUMENT
GRANTED TO: RIVERSIDE COUNTY
PURPOSE: PUBLIC HIGHWAY AND PUBLIC UTILITIES
RECORDED: NOVEMBER 20, 1945, IN BOOK 714 PAGE 216 O.R.
AFFECTS: AS SET FORTH IN SAID DOCUMENT

PLATE 1

ALTA CALIFORNIA GEOTECHNICAL, INC.
170 N. MAPLE STREET, STE 108, CORONA, CA 92880
TELEPHONE: (951) 509-7090
PROJECT NUMBER: 1-0366
DATE: 4-8-2021

Know what's below. Call before you dig. 811

MARK	BY	DATE	DESCRIPTION	APPR.	DATE
			REVISIONS		
ENGINEER				COUNTY	

SEAL-CITY: REGISTERED PROFESSIONAL ENGINEER — MICHAEL THORNTON — No. C44226 — Exp. 6/30/21 — CIVIL — STATE OF CALIFORNIA

CITY OF CALIMESA
PUBLIC WORKS DEPARTMENT

MICHAEL THORNTON P.E., CITY ENGINEER, RCE C44226 — DATE

MARGARET MONSON, PUBLIC WORKS DIRECTOR — DATE

SEAL-DESIGN ENGINEER: REGISTERED PROFESSIONAL ENGINEER — GEORGE ALAN LENFESTEY — No. 45920 — Exp. 12/31/20 — CIVIL — STATE OF CALIFORNIA

PREPARED BY:
PROACTIVE ENGINEERING CONSULTANTS WEST
25109 JEFFERSON AVE., SUITE 200
MURRIETA, CA 92562
951-200-6840

PROACTIVE ENGINEERING WEST

12/10/20
GEORGE ALAN LENFESTEY — DATE
R.C.E. 45920 EXP. 12-31-2020

BENCH MARK:
DESCRIPTION: USGS - MONUMENT "REST" BENCHMARK DISK SET ON TOP OF CONC. MONUMENT STAMPED "REST 1972" ON DESERT LAWN DR. ACROSS THE DRIVE FROM DESERT LAWN CEMETERY 25.3 FT. NORTHEAST OF THE DRIVE CENTERLINE 24.9 FT. SOUTHWEST OF THE SOUTHWEST EDGE OF THE SOUTHEAST BOUND LANES OF INTERSTATE HIGHWAY 10.
NAVD 29 DATUM — ELEV. 2191.44

SCALE: AS NOTED

CITY OF CALIMESA
MASS GRADING PLANS PARCEL MAP 37862

MASS GRADING PLAN SHEET

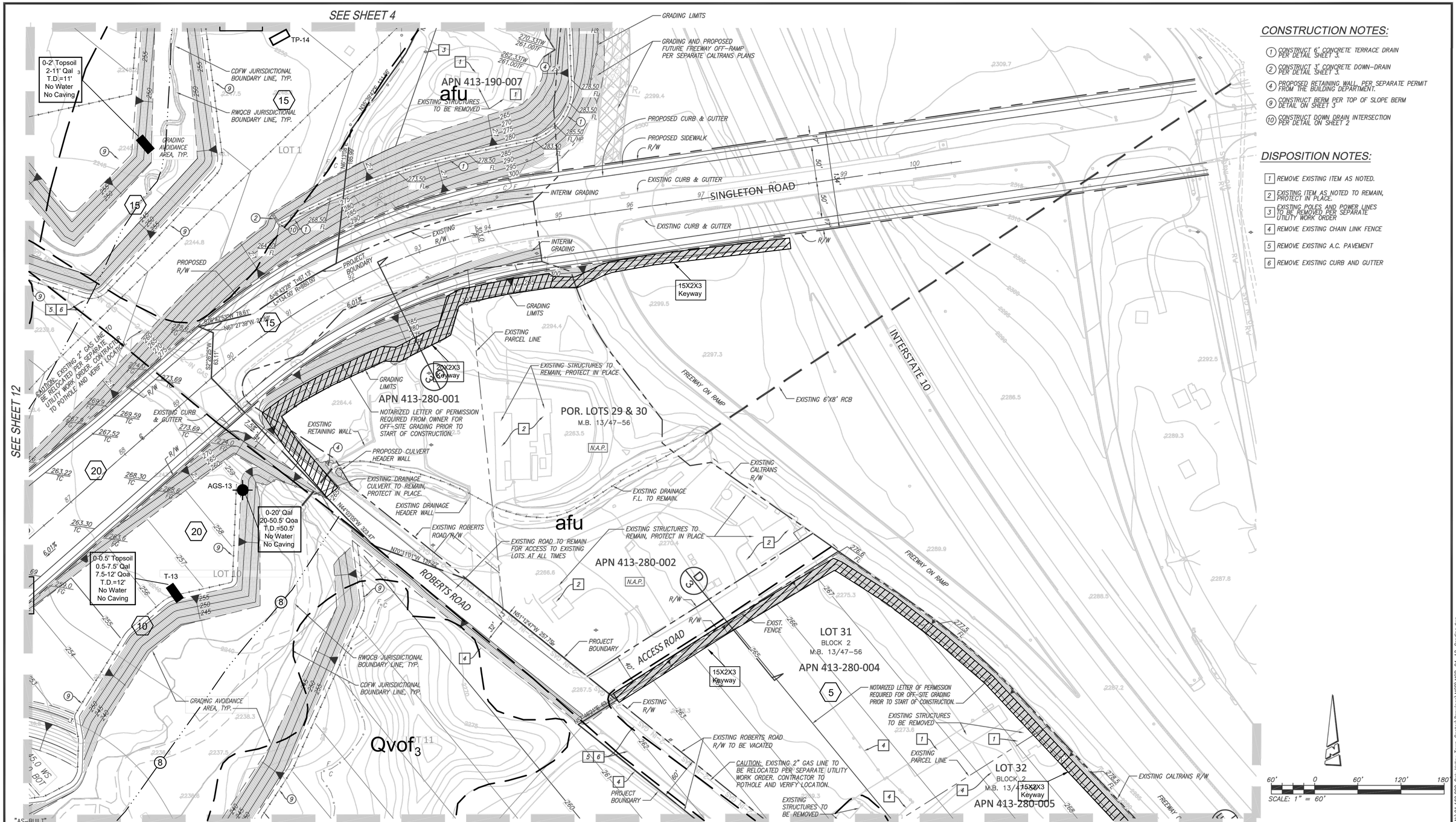
4 OF 23 SHEETS

FOR: CITY OF CALIMESA PUBLIC WORKS DEPARTMENT

PLAN No. _____

NOT FOR CONSTRUCTION

Plotted: Dec 10, 2020 - 10:42am By: gilberto
DWG: N:\01.169.000 Oak Valley Town Center\Drawings\MGP-04-12-Grading.dwg



CONSTRUCTION NOTES:

1. CONSTRUCT 6' CONCRETE TERRACE DRAIN PER DETAIL SHEET 3.
2. CONSTRUCT 3' CONCRETE DOWN-DRAIN PER DETAIL SHEET 3.
4. PROPOSED RETAINING WALL, PER SEPARATE PERMIT FROM THE BUILDING DEPARTMENT.
9. CONSTRUCT BERM PER TOP OF SLOPE BERM DETAIL ON SHEET 3
10. CONSTRUCT DOWN DRAIN INTERSECTION PER DETAIL ON SHEET 2

DISPOSITION NOTES:

1. REMOVE EXISTING ITEM AS NOTED.
2. EXISTING ITEM AS NOTED TO REMAIN, PROTECT IN PLACE.
3. EXISTING POLES AND POWER LINES TO BE REMOVED PER SEPARATE UTILITY WORK ORDER
4. REMOVE EXISTING CHAIN LINK FENCE
5. REMOVE EXISTING A.C. PAVEMENT
6. REMOVE EXISTING CURB AND GUTTER

"AS-BUILT"
THE RECEIPT OF AS-BUILT PLANS AND CITY'S ACCEPTANCE THEREOF DOES NOT ABSOLVE THE ENGINEER OF WORK OF ANY RESPONSIBILITY FOR THE PROJECT DESIGN.
ENGINEER OF WORK:

DATE: _____
RCE: _____
EXP. _____

See Plate 1 for Legend

PLATE 2

ALTA CALIFORNIA GEOTECHNICAL, INC.
170 N. MAPLE STREET, STE 108, CORONA, CA 92880
TELEPHONE: (951) 509-7090
PROJECT NUMBER: 1-0366 DATE: 4-8-2021

811 Know what's below. Call before you dig.

MARK	BY	DATE	DESCRIPTION	APPR.	DATE
	ENGINEER		REVISIONS		COUNTY

SEAL-CITY
REGISTERED PROFESSIONAL ENGINEER MICHAEL THORNTON No. C44226 Exp. 6/30/21 CIVIL STATE OF CALIFORNIA

CITY OF CALIMESA
PUBLIC WORKS DEPARTMENT

MICHAEL THORNTON P.E., CITY ENGINEER, RCE C44226 DATE

MARGARET MONSON, PUBLIC WORKS DIRECTOR DATE

SEAL-DESIGN ENGINEER
REGISTERED PROFESSIONAL ENGINEER GEORGE ALAN LENFESTEY No. 45920 Exp. 12/31/20 CIVIL STATE OF CALIFORNIA

PREPARED BY:
PROACTIVE ENGINEERING CONSULTANTS WEST
25109 JEFFERSON AVE. SUITE 200
MURRIETA, CA 92562
951-200-6840
PROACTIVE ENGINEERING WEST

GEORGE ALAN LENFESTEY 12/10/20
R.C.E. 45920 EXP. 12-31-2020 DATE

BENCH MARK:
DESCRIPTION: USGS - MONUMENT "REST" BENCHMARK DISK SET ON TOP OF CONC. MONUMENT STAMPED "REST 1972" ON DESERT LAWN DR. ACROSS THE DRIVE FROM DESERT LAWN CEMETERY 25.3 FT. NORTHEAST OF THE DRIVE CENTERLINE 24.9 FT. SOUTHWEST OF THE SOUTHWEST EDGE OF THE SOUTHEAST BOUND LANES OF INTERSTATE HIGHWAY 10.
NAVD 29 DATUM ELEV. 2191.44

SCALE: AS NOTED

CITY OF CALIMESA
MASS GRADING PLANS PARCEL MAP 37862
MASS GRADING PLAN SHEET

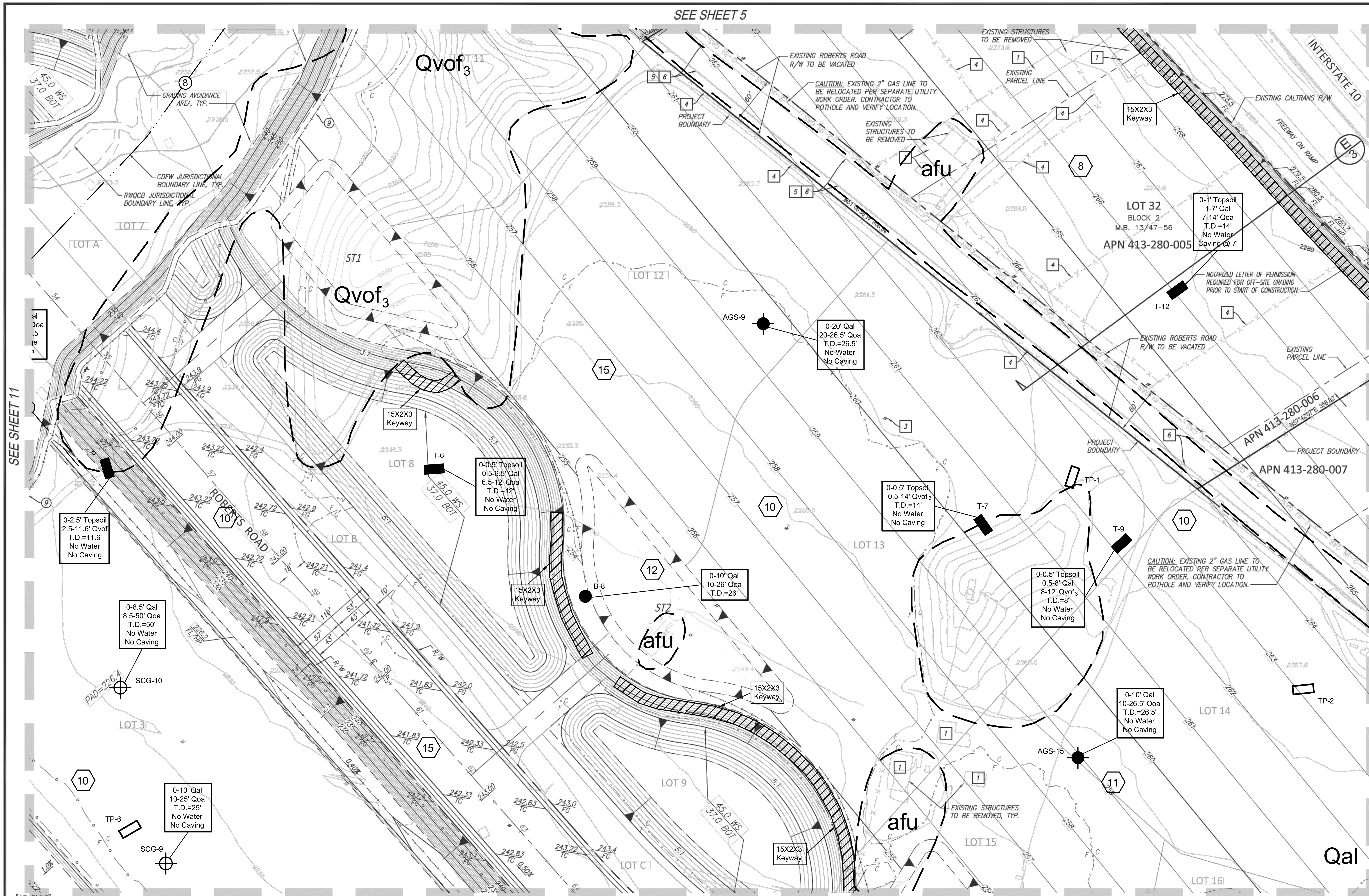
5 OF 23 SHEETS

FOR: CITY OF CALIMESA PUBLIC WORKS DEPARTMENT

PLAN No. _____

Plotted: Dec 10, 2020 - 10:42am By: gilberto DWG: N:\01.169.000 Oak Valley Town Center\Drawings\MGP-04-12-Grading.dwg

SEE SHEET 5



SEE SHEET 11

SEE SHEET 7

SEE SHEET 9

CONSTRUCTION NOTES:

9. CONSTRUCT BERM PER TOP OF SLOPE BERM DETAIL ON SHEET 3

EXISTING UTILITIES NOTES:

CONTRACTOR TO POTHOLE AND VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

DISPOSITION NOTES:

1. REMOVE EXISTING ITEM AS NOTED.
2. EXISTING ITEM AS NOTED TO REMAIN, PROTECT IN PLACE.
3. EXISTING POLES AND POWER LINES TO BE REMOVED PER SEPARATE UTILITY WORK ORDER
4. REMOVE EXISTING CHAIN LINK FENCE
5. REMOVE EXISTING A.C. PAVEMENT
6. REMOVE EXISTING CURB AND GUTTER

"AS-BUILT"
THE RECEIPT OF AS-BUILT PLANS AND CITY'S ACCEPTANCE THEREOF DOES NOT ABSOLVE THE ENGINEER OF WORK OF ANY RESPONSIBILITY FOR THE PROJECT DESIGN.
ENGINEER OF WORK:

DATE:
RCE:
EXP.

See Plate 1 for Legend

PLATE 3

ALTA CALIFORNIA GEOTECHNICAL, INC.
170 N. MAPLE STREET, STE 108, CORONA, CA 92880
TELEPHONE: (951) 509-7090
PROJECT NUMBER: 1-0366 DATE: 4-8-2021

811 Know what's below. Call before you dig.

MARK	BY	DATE	DESCRIPTION	APPR.	DATE
ENGINEER			REVISIONS		COUNTY

SEAL-CITY: REGISTERED PROFESSIONAL ENGINEER MICHAEL THORNTON No. C44226 Exp. 6/30/21 CIVIL STATE OF CALIFORNIA

CITY OF CALIMESA
PUBLIC WORKS DEPARTMENT

MICHAEL THORNTON P.E., CITY ENGINEER, RCE C44226 DATE

MARGARET MONSON, PUBLIC WORKS DIRECTOR DATE

SEAL-DESIGN ENGINEER: REGISTERED PROFESSIONAL ENGINEER GEORGE ALAN LENFESTEY No. 45920 Exp. 12/31/20 CIVIL STATE OF CALIFORNIA

PREPARED BY:
PROACTIVE ENGINEERING CONSULTANTS WEST
25109 JEFFERSON AVE. SUITE 200
MURRIETA, CA 92562
951-200-6840

GEORGE ALAN LENFESTEY
R.C.E. 45920 EXP. 12-31-2020
12/10/20
DATE

BENCH MARK:
DESCRIPTION: USGS – MONUMENT "REST" BENCHMARK DISK SET ON TOP OF CONC. MONUMENT STAMPED "REST 1972" ON DESERT LAWN DR. ACROSS THE DRIVE FROM DESERT LAWN CEMETERY 25.3 FT. NORTHEAST OF THE DRIVE CENTERLINE 24.9 FT. SOUTHWEST OF THE SOUTHWEST EDGE OF THE SOUTHEAST BOUND LANES OF INTERSTATE HIGHWAY 10.
NAVD 29 DATUM ELEV. 2191.44

SCALE: AS NOTED

CITY OF CALIMESA
MASS GRADING PLANS PARCEL MAP 37862
MASS GRADING PLAN SHEET

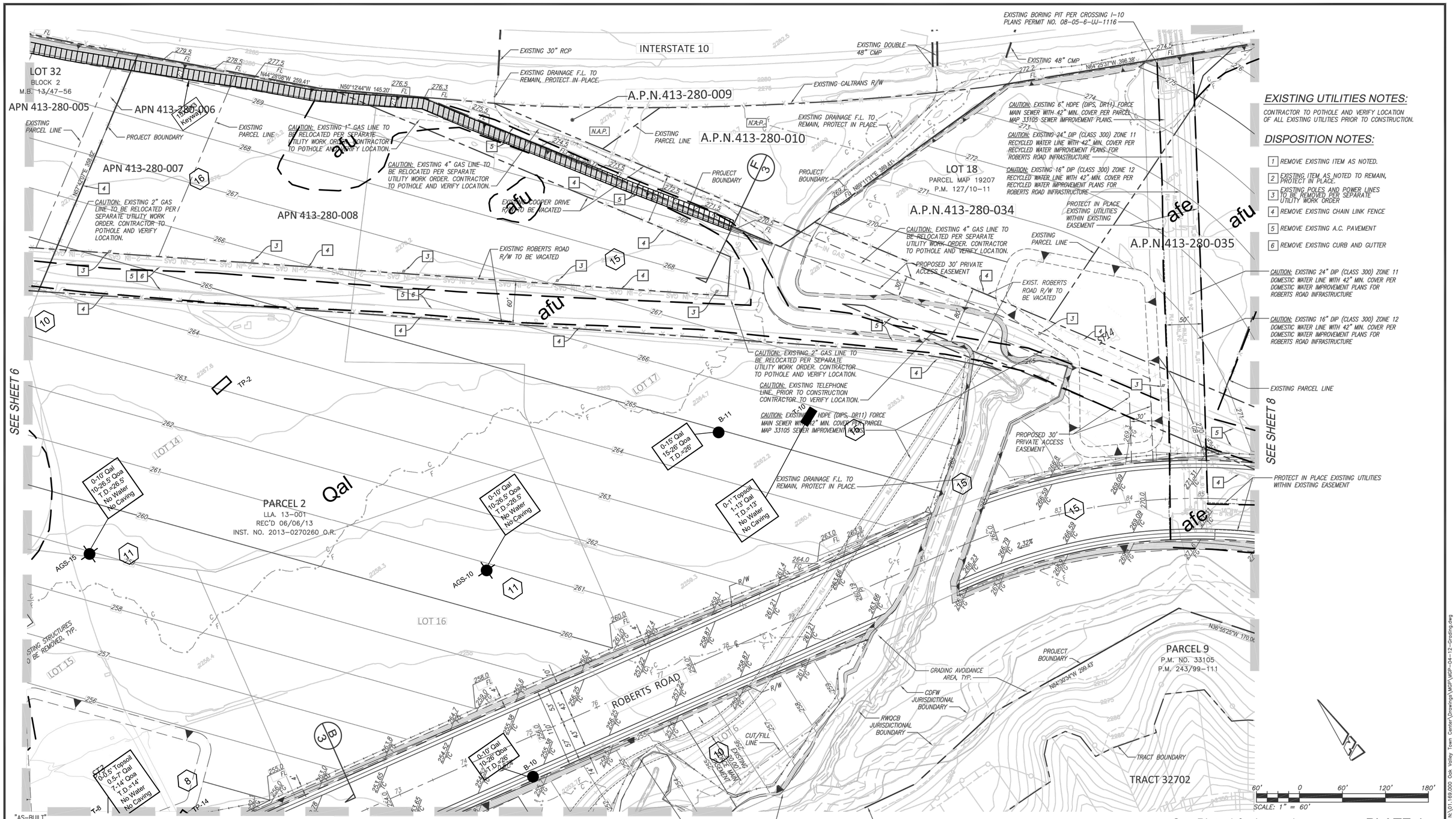
6 OF 23 SHEETS

FOR: CITY OF CALIMESA PUBLIC WORKS DEPARTMENT

PLAN No.

NOT FOR CONSTRUCTION

Plotted: Dec 10, 2020 – 10:42am By: gilberto DWG: N:\01.169.000 Oak Valley Town Center\Drawings\MGP\MGP-04-12-Grading.dwg



"AS-BUILT"
THE RECEIPT OF AS-BUILT PLANS AND CITY'S ACCEPTANCE THEREOF DOES NOT ABSOLVE THE ENGINEER OF WORK OF ANY RESPONSIBILITY FOR THE PROJECT DESIGN.
ENGINEER OF WORK:

DATE: _____
RCE: _____
EXP. _____

See Plate 1 for Legend

PLATE 4

ALTA CALIFORNIA GEOTECHNICAL, INC.
170 N. MAPLE STREET, STE 108, CORONA, CA 92880
TELEPHONE: (951) 509-7090

PROJECT NUMBER: 1-0366 DATE: 4-8-2021

WDID#

811 Know what's below. Call before you dig.

MARK	BY	DATE	DESCRIPTION	APPR.	DATE
ENGINEER			REVISIONS		COUNTY

SEAL-CITY
REGISTERED PROFESSIONAL ENGINEER MICHAEL THORNTON No. C44226 Exp. 6/30/21 CIVIL STATE OF CALIFORNIA

CITY OF CALIMESA
PUBLIC WORKS DEPARTMENT

MICHAEL THORNTON P.E., CITY ENGINEER, RCE C44226 DATE

MARGARET MONSON, PUBLIC WORKS DIRECTOR DATE

SEAL-DESIGN ENGINEER
REGISTERED PROFESSIONAL ENGINEER GEORGE ALAN LENFESTEY No. 45920 Exp. 12/31/20 CIVIL STATE OF CALIFORNIA

PREPARED BY:
PROACTIVE ENGINEERING WEST
PROACTIVE ENGINEERING CONSULTANTS WEST
25109 JEFFERSON AVE. SUITE 200
MURRIETA, CA 92562
951-200-6840

12/10/20
GEORGE ALAN LENFESTEY DATE
R.C.E. 45920 EXP. 12-31-2020

BENCH MARK:
DESCRIPTION: USGS - MONUMENT "REST" BENCHMARK DISK SET ON TOP OF CONC. MONUMENT STAMPED "REST 1972" ON DESERT LAWN DR. ACROSS THE DRIVE FROM DESERT LAWN CEMETERY 25.3 FT. NORTHEAST OF THE DRIVE CENTERLINE 24.9 FT. SOUTHWEST OF THE SOUTHWEST EDGE OF THE SOUTHEAST BOUND LANES OF INTERSTATE HIGHWAY 10.
NAVD 29 DATUM ELEV. 2191.44

CITY OF CALIMESA
MASS GRADING PLANS PARCEL MAP 37862
MASS GRADING PLAN SHEET

7 OF 23 SHEETS

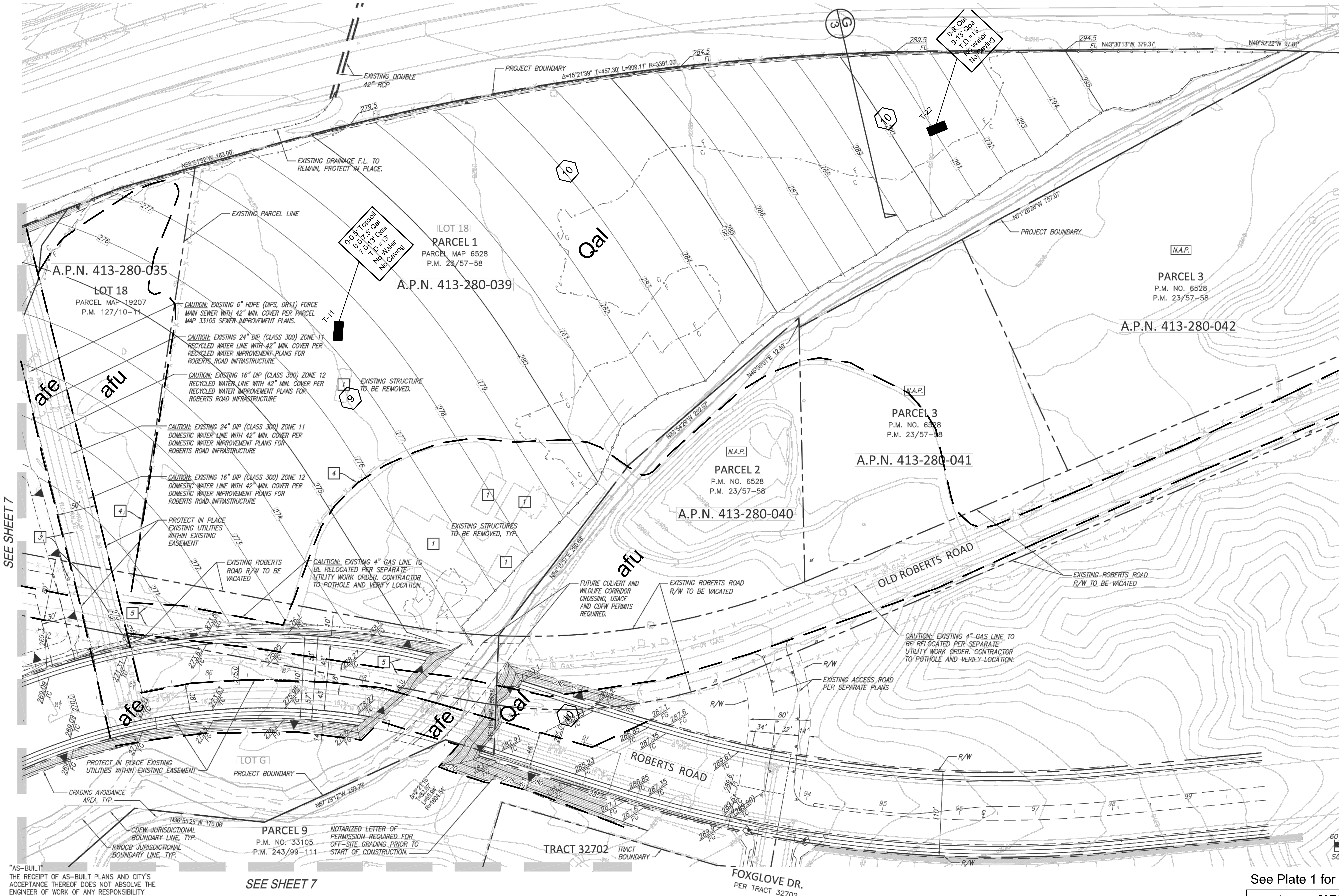
SCALE: AS NOTED

FOR: CITY OF CALIMESA PUBLIC WORKS DEPARTMENT

PLAN No. _____

NOT FOR CONSTRUCTION

Plotted: Dec 10, 2020 - 10:43am By: gilberto DWG: N:\01.169.000 Oak Valley Town Center\Drawings\MGP\MGP-04-12-Grading.dwg



EXISTING DOUBLE 42" RCP
PROJECT BOUNDARY
Δ=15°21'39" T=457.30' L=909.11' R=3391.00'
N58°51'52"W 183.00'
N43°30'13"W 379.37'
N40°52'22"W 97.81'
N71°26'26"W 757.07'
EXISTING DRAINAGE F.L. TO REMAIN, PROTECT IN PLACE.
EXISTING PARCEL LINE
0-0.5' Topsoil
0.5-7.5' Qal
7.5-13' Qos
T.D.=13'
No Water
No Caving
T-11
0-9' Qal
9-13' Qos
T.D.=13'
No Water
No Caving
T-22
LOT 18
PARCEL 1
PARCEL MAP 6528
P.M. 23/57-58
A.P.N. 413-280-039
A.P.N. 413-280-035
LOT 18
PARCEL MAP 19207
P.M. 127/10-11
Qal
afu
afe
CAUTION: EXISTING 6" HDPE (DIPS, DR11) FORCE MAIN SEWER WITH 42" MIN. COVER PER PARCEL MAP 33105 SEWER IMPROVEMENT PLANS.
CAUTION: EXISTING 24" DIP (CLASS 300) ZONE 11 RECYCLED WATER LINE WITH 42" MIN. COVER PER RECYCLED WATER IMPROVEMENT PLANS FOR ROBERTS ROAD INFRASTRUCTURE
CAUTION: EXISTING 16" DIP (CLASS 300) ZONE 12 RECYCLED WATER LINE WITH 42" MIN. COVER PER RECYCLED WATER IMPROVEMENT PLANS FOR ROBERTS ROAD INFRASTRUCTURE
CAUTION: EXISTING 24" DIP (CLASS 300) ZONE 11 DOMESTIC WATER LINE WITH 42" MIN. COVER PER DOMESTIC WATER IMPROVEMENT PLANS FOR ROBERTS ROAD INFRASTRUCTURE
CAUTION: EXISTING 16" DIP (CLASS 300) ZONE 12 DOMESTIC WATER LINE WITH 42" MIN. COVER PER DOMESTIC WATER IMPROVEMENT PLANS FOR ROBERTS ROAD INFRASTRUCTURE
EXISTING STRUCTURE TO BE REMOVED.
PROTECT IN PLACE EXISTING UTILITIES WITHIN EXISTING EASEMENT
EXISTING ROBERTS ROAD R/W TO BE VACATED
CAUTION: EXISTING 4" GAS LINE TO BE RELOCATED PER SEPARATE UTILITY WORK ORDER. CONTRACTOR TO POTHOLE AND VERIFY LOCATION.
EXISTING STRUCTURES TO BE REMOVED, TYP.
FUTURE CULVERT AND WILDLIFE CORRIDOR CROSSING, USACE AND CDFW PERMITS REQUIRED.
PARCEL 2
P.M. NO. 6528
P.M. 23/57-58
A.P.N. 413-280-040
PARCEL 3
P.M. NO. 6528
P.M. 23/57-58
A.P.N. 413-280-041
PARCEL 3
P.M. NO. 6528
P.M. 23/57-58
A.P.N. 413-280-042
N.A.P.
OLD ROBERTS ROAD
ROBERTS ROAD
EXISTING ACCESS ROAD PER SEPARATE PLANS
R/W
LOT G
PROJECT BOUNDARY
GRADING AVOIDANCE AREA, TYP.
CDFW JURISDICTIONAL BOUNDARY LINE, TYP.
RWQCB JURISDICTIONAL BOUNDARY LINE, TYP.
N36°55'25"W 170.06'
N67°29'12"W 259.79'
PARCEL 9
P.M. NO. 33105
P.M. 243/99-111
NOTARIZED LETTER OF PERMISSION REQUIRED FOR OFF-SITE GRADING PRIOR TO START OF CONSTRUCTION.
TRACT 32702
TRACT BOUNDARY
FOXGLOVE DR.
PER TRACT 32702
SEE SHEET 7

EXISTING UTILITIES NOTES:

CONTRACTOR TO POTHOLE AND VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

DISPOSITION NOTES:

1. REMOVE EXISTING ITEM AS NOTED.
2. EXISTING ITEM AS NOTED TO REMAIN, PROTECT IN PLACE.
3. EXISTING POLES AND POWER LINES TO BE REMOVED PER SEPARATE UTILITY WORK ORDER
4. REMOVE EXISTING CHAIN LINK FENCE
5. REMOVE EXISTING A.C. PAVEMENT

SCALE: 1" = 60'

"AS-BUILT"
THE RECEIPT OF AS-BUILT PLANS AND CITY'S ACCEPTANCE THEREOF DOES NOT ABSOLVE THE ENGINEER OF WORK OF ANY RESPONSIBILITY FOR THE PROJECT DESIGN.
ENGINEER OF WORK:
DATE:
RCE:
EXP.

See Plate 1 for Legend

PLATE 5

ALTA CALIFORNIA GEOTECHNICAL, INC.
170 N. MAPLE STREET, STE 108, CORONA, CA 92880
TELEPHONE: (951) 509-7090
PROJECT NUMBER: 1-0366 DATE: 4-8-2021

811 Know what's below. Call before you dig.

MARK	BY	DATE	DESCRIPTION	APPR.	DATE
ENGINEER			REVISIONS	COUNTY	

SEAL-CITY: REGISTERED PROFESSIONAL ENGINEER MICHAEL THORNTON No. C44226 Exp. 6/30/21 CIVIL STATE OF CALIFORNIA

CITY OF CALIMESA
PUBLIC WORKS DEPARTMENT

MICHAEL THORNTON P.E., CITY ENGINEER, RCE C44226 DATE
MARGARET MONSON, PUBLIC WORKS DIRECTOR DATE

SEAL-DESIGN ENGINEER: REGISTERED PROFESSIONAL ENGINEER GEORGE ALAN LENFESTEY No. 45920 Exp. 12/31/20 CIVIL STATE OF CALIFORNIA

PREPARED BY:
PROACTIVE ENGINEERING CONSULTANTS WEST
25109 JEFFERSON AVE. SUITE 200
MURRIETA, CA 92562
951-200-6840

GEORGE ALAN LENFESTEY R.C.E. 45920 EXP. 12-31-2020 12/10/20 DATE

BENCH MARK:
DESCRIPTION: USGS - MONUMENT "REST" BENCHMARK DISK SET ON TOP OF CONC. MONUMENT STAMPED "REST 1972" ON DESERT LAWN DR. ACROSS THE DRIVE FROM DESERT LAWN CEMETERY 25.3 FT. NORTHEAST OF THE DRIVE CENTERLINE 24.9 FT. SOUTHWEST OF THE SOUTHWEST EDGE OF THE SOUTHEAST BOUND LANES OF INTERSTATE HIGHWAY 10.
NAVD 29 DATUM ELEV. 2191.44

SCALE: AS NOTED

CITY OF CALIMESA
MASS GRADING PLANS PARCEL MAP 37862
MASS GRADING PLAN SHEET

FOR: CITY OF CALIMESA PUBLIC WORKS DEPARTMENT

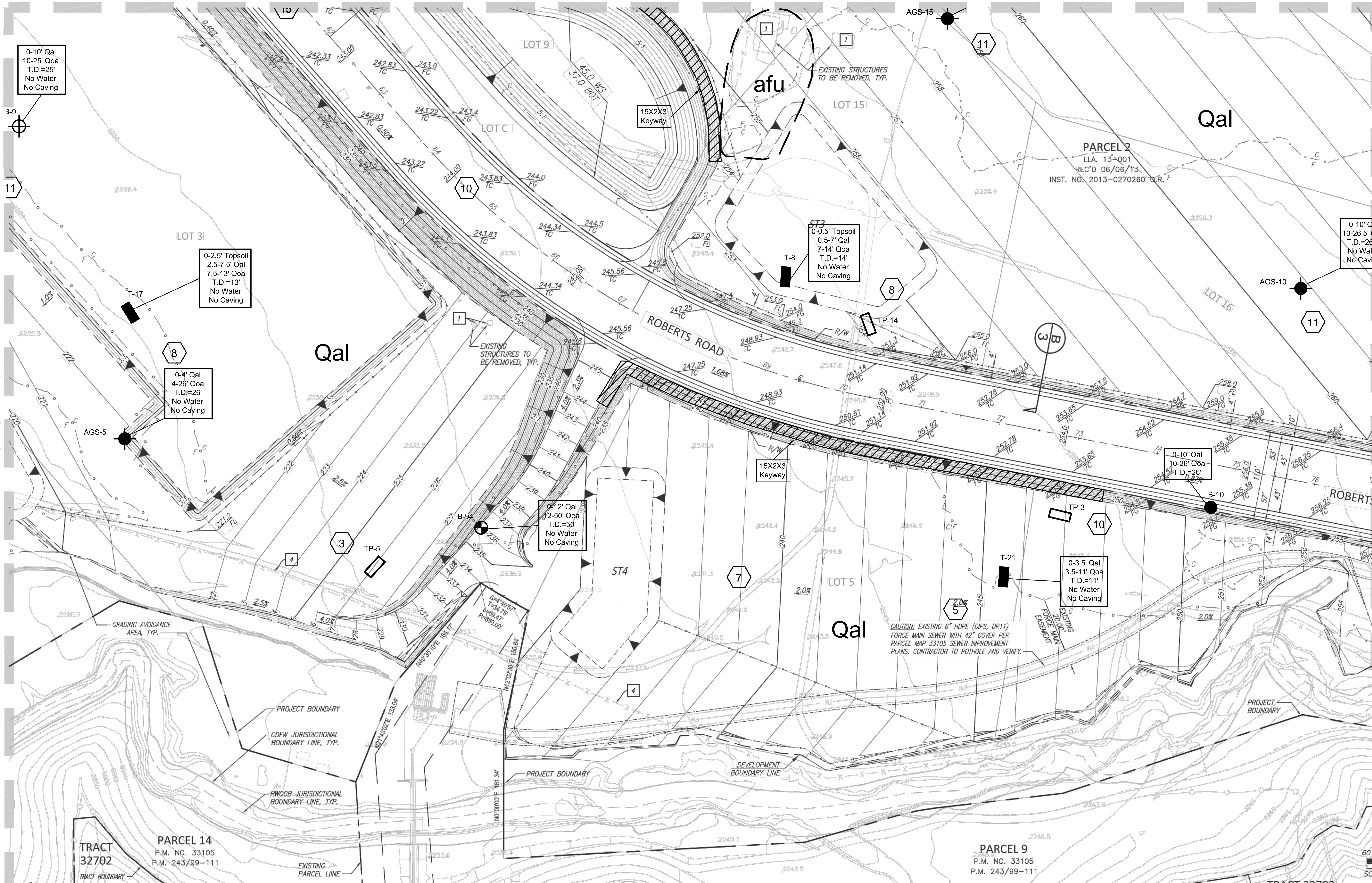
8 OF 23 SHEETS

PLAN No.

NOT FOR CONSTRUCTION

DWG: N:\01.169.000 Oak Valley Town Center\Drawings\MGP\MGP-04-12-Grading.dwg
Plotted: Dec 10, 2020 - 10:43am By: gilberta

SEE SHEET 6



EXISTING UTILITIES NOTES:

CONTRACTOR TO POTHOLE AND VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

DISPOSITION NOTES:

1 REMOVE EXISTING ITEM AS NOTED.

4 REMOVE EXISTING CHAIN LINK FENCE

SCALE: 1" = 60'

TRACT 32702

TRACT BOUNDARY

See Plate 1 for Legend

PLATE 6

ALTA CALIFORNIA GEOTECHNICAL, INC.
170 N. MAPLE STREET, STE 108, CORONA, CA 92880
TELEPHONE: (951) 509-7090
PROJECT NUMBER: 1-0366 DATE: 4-8-2021

"AS-BUILT"
THE RECEIPT OF AS-BUILT PLANS AND CITY'S ACCEPTANCE THEREOF DOES NOT ABSOLVE THE ENGINEER OF WORK OF ANY RESPONSIBILITY FOR THE PROJECT DESIGN.
ENGINEER OF WORK:
DATE:
RCE:
EXP.

811 Know what's below. Call before you dig.

MARK	BY	DATE	DESCRIPTION	APPR.	DATE
ENGINEER			REVISIONS	COUNTY	

SEAL-CITY: REGISTERED PROFESSIONAL ENGINEER, MICHAEL THORNTON, No. C44226, Exp. 6/30/21, CIVIL, STATE OF CALIFORNIA

CITY OF CALIMESA
PUBLIC WORKS DEPARTMENT

MICHAEL THORNTON P.E., CITY ENGINEER, RCE C44226 DATE

MARGARET MONSON, PUBLIC WORKS DIRECTOR DATE

SEAL-DESIGN ENGINEER: REGISTERED PROFESSIONAL ENGINEER, GEORGE ALAN LENFESTEY, No. 45920, Exp. 12/31/20, CIVIL, STATE OF CALIFORNIA

PREPARED BY:
PROACTIVE ENGINEERING WEST
PROACTIVE ENGINEERING CONSULTANTS WEST
25109 JEFFERSON AVE. SUITE 200
MURRIETA, CA 92562
951-200-6840

GEORGE ALAN LENFESTEY 12/10/20
R.C.E. 45920 EXP. 12-31-2020 DATE

BENCH MARK:
DESCRIPTION: USGS - MONUMENT "REST" BENCHMARK DISK SET ON TOP OF CONC. MONUMENT STAMPED "REST 1972" ON DESERT LAWN DR. ACROSS THE DRIVE FROM DESERT LAWN CEMETERY 25.3 FT. NORTHEAST OF THE DRIVE CENTERLINE 24.9 FT. SOUTHWEST OF THE SOUTHWEST EDGE OF THE SOUTHEAST BOUND LANES OF INTERSTATE HIGHWAY 10.
NAVD 29 DATUM ELEV. 2191.44

SCALE: AS NOTED

CITY OF CALIMESA
MASS GRADING PLANS PARCEL MAP 37862
MASS GRADING PLAN SHEET

FOR: CITY OF CALIMESA PUBLIC WORKS DEPARTMENT

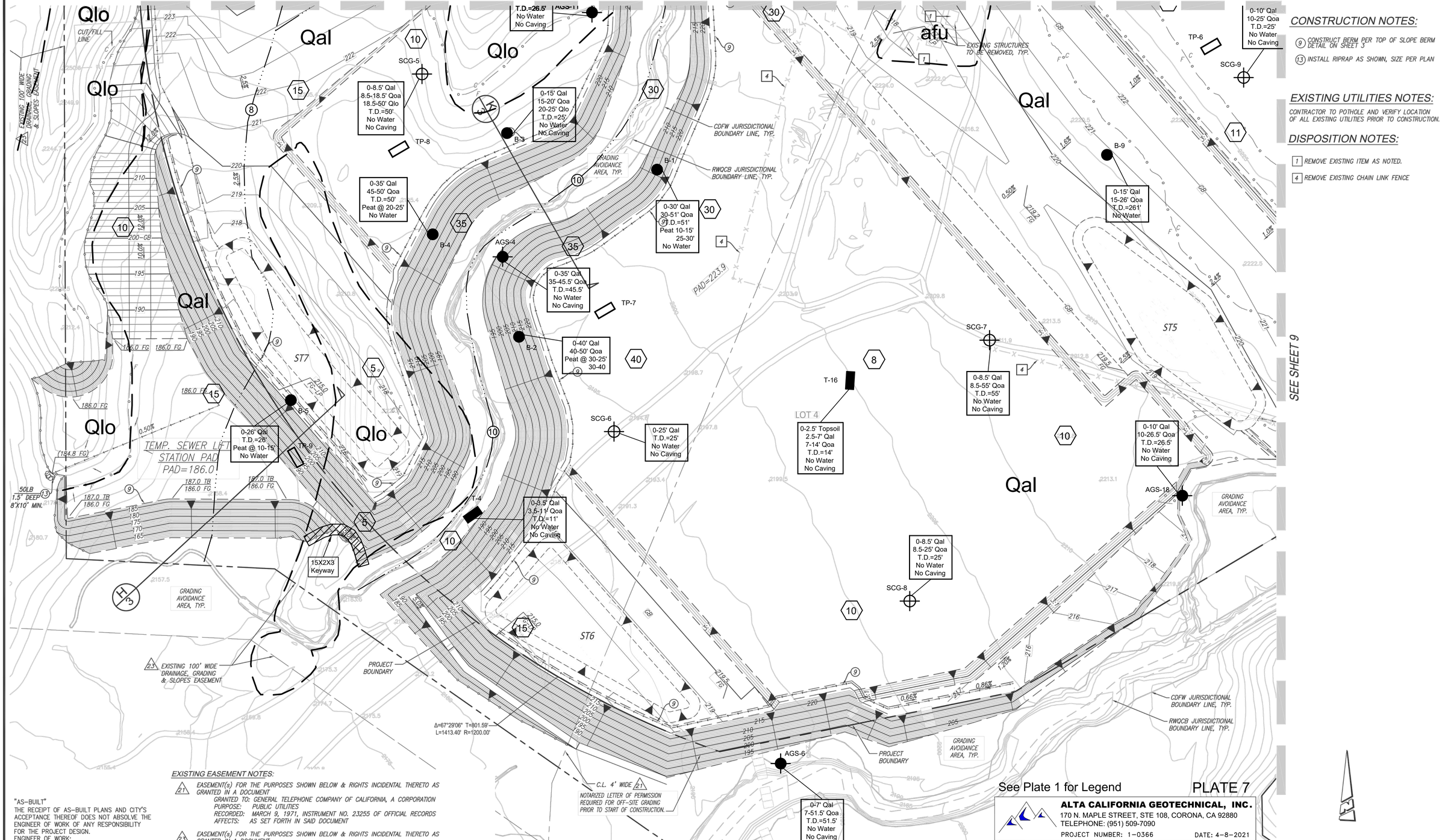
PLAN No.

9 OF 23 SHEETS

NOT FOR CONSTRUCTION

DWG: N:\01.169.000 Oak Valley Town Center\Drawings\MGP\MGP-04-12-Grading.dwg Plotted: Dec 10, 2020 - 10:44am by: gilberto

SEE SHEET 11



CONSTRUCTION NOTES:

(9) CONSTRUCT BERM PER TOP OF SLOPE BERM DETAIL ON SHEET 3

(13) INSTALL RIPRAP AS SHOWN, SIZE PER PLAN

EXISTING UTILITIES NOTES:

CONTRACTOR TO POTHOLE AND VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

DISPOSITION NOTES:

[1] REMOVE EXISTING ITEM AS NOTED.

[4] REMOVE EXISTING CHAIN LINK FENCE

EXISTING EASEMENT NOTES:

21 EASEMENT(s) FOR THE PURPOSES SHOWN BELOW & RIGHTS INCIDENTAL THERETO AS GRANTED IN A DOCUMENT
GRANTED TO: GENERAL TELEPHONE COMPANY OF CALIFORNIA, A CORPORATION
PURPOSE: PUBLIC UTILITIES
RECORDED: MARCH 9, 1971, INSTRUMENT NO. 23255 OF OFFICIAL RECORDS
AFFECTS: AS SET FORTH IN SAID DOCUMENT

23 EASEMENT(S) FOR THE PURPOSES SHOWN BELOW & RIGHTS INCIDENTAL THERETO AS GRANTED IN A DOCUMENT
GRANTED TO: SUNCAL SUMMERWIND RANCH LLC
PURPOSE: DRAINAGE, GRADING & SLOPE EASEMENT
RECORDED: AUGUST 28, 2006, INSTRUMENT NO. 2006-0632646
AFFECTS: AS SET FORTH IN SAID DOCUMENT

"AS-BUILT"
THE RECEIPT OF AS-BUILT PLANS AND CITY'S ACCEPTANCE THEREOF DOES NOT ABSOLVE THE ENGINEER OF WORK OF ANY RESPONSIBILITY FOR THE PROJECT DESIGN.
ENGINEER OF WORK:
DATE:
RCE:
EXP.

See Plate 1 for Legend

PLATE 7

ALTA CALIFORNIA GEOTECHNICAL, INC.
170 N. MAPLE STREET, STE 108, CORONA, CA 92880
TELEPHONE: (951) 509-7090
PROJECT NUMBER: 1-0366 DATE: 4-8-2021

WDID#

SCALE: 1" = 60'

811 Know what's below. Call before you dig.

MARK	BY	DATE	DESCRIPTION	APPR.	DATE
ENGINEER			REVISIONS	COUNTY	

SEAL-CITY
REGISTERED PROFESSIONAL ENGINEER — MICHAEL THORNTON — No. C44226 Exp. 6/30/21 — CIVIL — STATE OF CALIFORNIA

CITY OF CALIMESA
PUBLIC WORKS DEPARTMENT

MICHAEL THORNTON P.E., CITY ENGINEER, RCE C44226 DATE

MARGARET MONSON, PUBLIC WORKS DIRECTOR DATE

SEAL-DESIGN ENGINEER
REGISTERED PROFESSIONAL ENGINEER — GEORGE ALAN LENFESTEY — No. 45920 Exp. 12/31/20 — CIVIL — STATE OF CALIFORNIA

PREPARED BY:
PROACTIVE ENGINEERING CONSULTANTS WEST
25109 JEFFERSON AVE. SUITE 200
MURRIETA, CA 92562
951-200-6840
PROACTIVE ENGINEERING WEST

GEORGE ALAN LENFESTEY 12/10/20
R.C.E. 45920 EXP. 12-31-2020 DATE

BENCH MARK:
DESCRIPTION: USGS - MONUMENT "REST" BENCHMARK DISK SET ON TOP OF CONC. MONUMENT STAMPED "REST 1972" ON DESERT LAWN DR. ACROSS THE DRIVE FROM DESERT LAWN CEMETERY 25.3 FT. NORTHEAST OF THE DRIVE CENTERLINE 24.9 FT. SOUTHWEST OF THE SOUTHWEST EDGE OF THE SOUTHEAST BOUND LANES OF INTERSTATE HIGHWAY 10.
NAVD 29 DATUM ELEV. 2191.44

SCALE: AS NOTED

CITY OF CALIMESA
MASS GRADING PLANS PARCEL MAP 37862
MASS GRADING PLAN SHEET

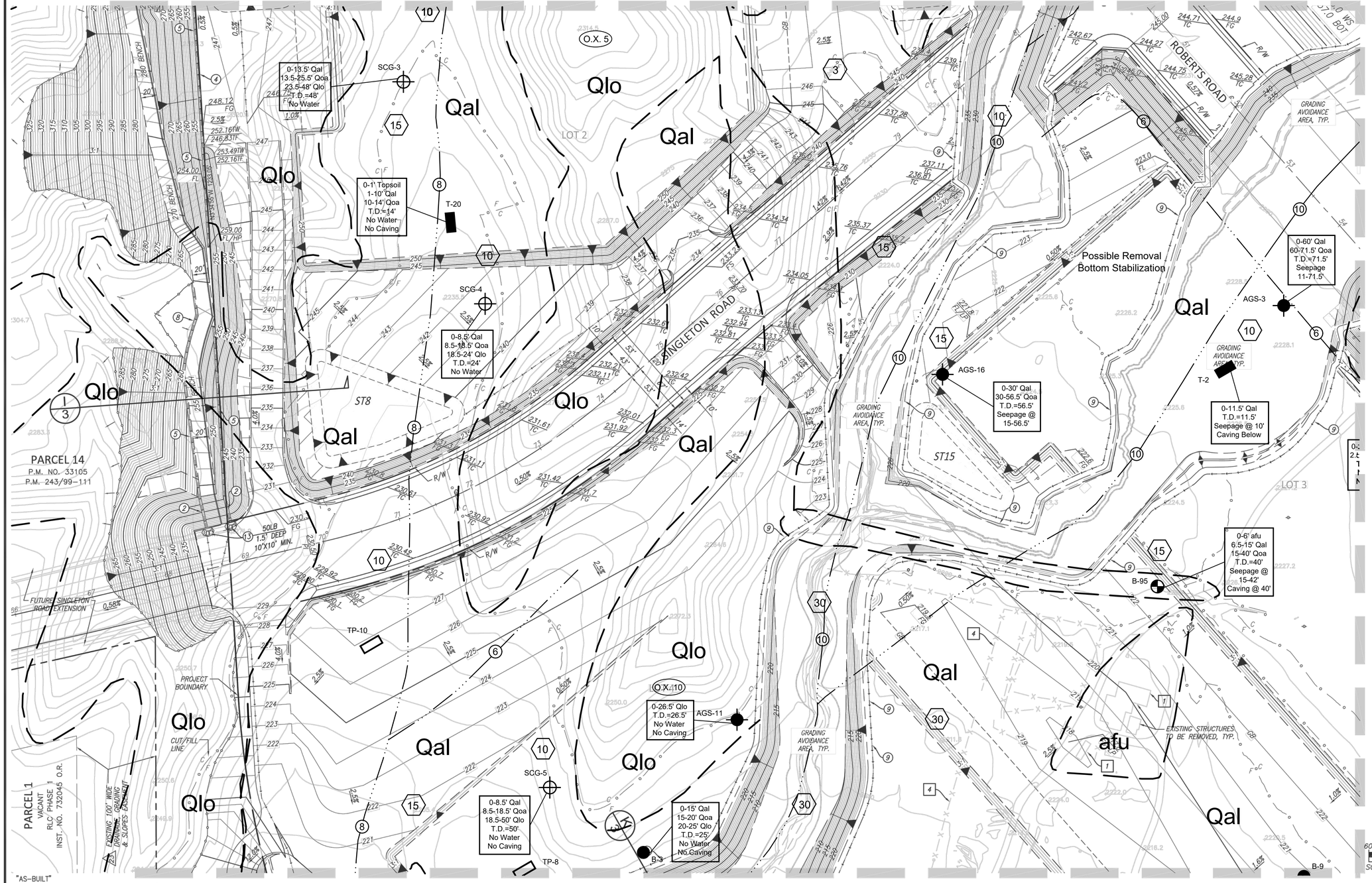
10 OF 23 SHEETS

FOR: CITY OF CALIMESA PUBLIC WORKS DEPARTMENT

PLAN No.

NOT FOR CONSTRUCTION

SEE SHEET 12



SEE SHEET 6

CONSTRUCTION NOTES:

(2) CONSTRUCT 3' CONCRETE DOWN-DRAIN PER DETAIL SHEET 3.
(3) PROPOSE UNDER-SIDEWALK DRAIN PER STREET IMPROVEMENTS PM 37862
(4) PROPOSED RETAINING WALL, PER SEPARATE PERMIT FROM THE BUILDING DEPARTMENT.
(5) CONSTRUCT 3' CONCRETE V-DITCH PER DETAIL ON SHEET 3
(8) CONSTRUCT 3' CONCRETE BROW DITCH PER DETAIL ON SHEET 3
(9) CONSTRUCT BERM PER TOP OF SLOPE BERM PER DETAIL ON SHEET 3
(13) INSTALL RIPRAP AS SHOWN, SIZE PER PLAN

EXISTING UTILITIES NOTES:

CONTRACTOR TO POTHOLE AND VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

DISPOSITION NOTES:

[1] REMOVE EXISTING ITEM AS NOTED.
[4] REMOVE EXISTING CHAIN LINK FENCE

SEE SHEET 10

"AS-BUILT"
THE RECEIPT OF AS-BUILT PLANS AND CITY'S ACCEPTANCE THEREOF DOES NOT ABSOLVE THE ENGINEER OF WORK OF ANY RESPONSIBILITY FOR THE PROJECT DESIGN.
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DATE: _____
RCE: _____
EXP. _____

See Plate 1 for Legend

PLATE 8

ALTA CALIFORNIA GEOTECHNICAL, INC.
170 N. MAPLE STREET, STE 108, CORONA, CA 92880
TELEPHONE: (951) 509-7090
PROJECT NUMBER: 1-0366 DATE: 4-8-2021

Know what's below. Call before you dig. 811

MARK	BY	DATE	DESCRIPTION	APPR.	DATE
ENGINEER			REVISIONS	COUNTY	

SEAL-CITY: REGISTERED PROFESSIONAL ENGINEER — MICHAEL THORNTON — No. C44226 Exp. 6/30/21 — CIVIL — STATE OF CALIFORNIA

CITY OF CALIMESA
PUBLIC WORKS DEPARTMENT

MICHAEL THORNTON P.E., CITY ENGINEER, RCE C44226 DATE

MARGARET MONSON, PUBLIC WORKS DIRECTOR DATE

SEAL-DESIGN ENGINEER: REGISTERED PROFESSIONAL ENGINEER — GEORGE ALAN LENFESTEY — No. 45920 Exp. 12/31/20 — CIVIL — STATE OF CALIFORNIA

PREPARED BY:
PROACTIVE ENGINEERING CONSULTANTS WEST
25109 JEFFERSON AVE, SUITE 200
MURRIETA, CA 92562
951-200-6840

PROACTIVE ENGINEERING WEST

GEORGE ALAN LENFESTEY 12/10/20
R.C.E. 45920 EXP. 12-31-2020 DATE

BENCH MARK:
DESCRIPTION: USGS - MONUMENT "REST" BENCHMARK DISK SET ON TOP OF CONC. MONUMENT STAMPED "REST 1972" ON DESERT LAWN DR. ACROSS THE DRIVE FROM DESERT LAWN CEMETERY 25.3 FT. NORTHEAST OF THE DRIVE CENTERLINE 24.9 FT. SOUTHWEST OF THE SOUTHWEST EDGE OF THE SOUTHEAST BOUND LANES OF INTERSTATE HIGHWAY 10.
NAVD 29 DATUM ELEV. 2191.44

SCALE: AS NOTED

CITY OF CALIMESA
MASS GRADING PLANS PARCEL MAP 37862
MASS GRADING PLAN SHEET

FOR: CITY OF CALIMESA PUBLIC WORKS DEPARTMENT

PLAN No. _____

11 OF 23 SHEETS

NOT FOR CONSTRUCTION

Plotted: Dec 10, 2020 - 10:44am By: gilberta DWG: N:\01-169.000 Oak Valley Town Center\Drawings\MGP\MGP-04-12-Grading.dwg

SEE SHEET 4

PARCEL 14
P.M. NO. 33105
P.M. 243/99–111

PROJECT BOUNDARY

NOTARIZED LETTER OF PERMISSION REQUIRED FOR OFF–SITE GRADING PRIOR TO START OF CONSTRUCTION.

CAUTION: EXISTING 2" GAS LINE TO BE RELOCATED PER SEPARATE UTILITY WORK ORDER. CONTRACTOR TO POTHOLE AND VERIFY LOCATION.

LOT 2

LOT A

LOT 7

ROBERTS ROAD

SINGLETON ROAD

Qal

Qlo

$Qvof_3$

ST9

ST10

ST11

ST12

ST13

0-14' Qal
14-16' Qlo
T.D.=16'
No Water
No Caving

0-18' Qal
18-44' Qoa
44-62' Qvof
62-70 QTst
T.D.=50.5'
No Water

0-18' Qal
18-44' Qoa
44-62' $Qvof_3$
62-70' QTst
T.D.=50.5'
No Water

0-1' Topsoil
1-8' Qal
8-14' Qoa
T.D.=14'
No Water
No Caving

0-10' Qal
10-26.5' Qoa
T.D.=26.5'
No Water
No Caving

0-1' Topsoil
1-6' Qal
6-12' Qoa
T.D.=12'
No Water
No Caving

0-0.5' Topsoil
0.5-6.5' Qal
6.5-11' Qlo
T.D.=11'
No Water
No Caving

0-10' Qal
10-25.5' Qoa
T.D.=25.5'
No Water

0-20' Qal
20-26' Qoa
T.D.=26'
Peat 15-20

0-13' Qal
13-31' Qoa
31-41' Qlo
T.D.=41'
No Water

0-26' Qal
T.D.=26'
No Water
No Caving
>80% Sat
@ 15'

B-37 · B-7 · B-96 · PSE-B-112 · AGS-8 · AGS-12 · AGS-2

T-3 · T-18 · T-19 · TP-11 · TP-12 · TP-13

15X2X3 Keyway

50LB 1.5' DEEP 5'X200' MIN.

O.X. 5

PAD=251.9

CDFW JURISDICTIONAL BOUNDARY LINE, TYP.

RWQCB JURISDICTIONAL BOUNDARY LINE, TYP.

GRADING AVOIDANCE AREA, TYP.

CONSTRUCTION NOTES:

1. CONSTRUCT 6' CONCRETE TERRACE DRAIN PER DETAIL SHEET 3.
2. CONSTRUCT 3' CONCRETE DOWN–DRAIN PER DETAIL SHEET 3.
4. PROPOSED RETAINING WALL, PER SEPARATE PERMIT FROM THE BUILDING DEPARTMENT.
5. CONSTRUCT 3' CONCRETE V–DITCH PER DETAIL ON SHEET 3
6. CONSTRUCT 12" DRAIN AND PIPE PER DETAIL ON SHEET 3
7. CONSTRUCT 6" THICK CONCRETE SPLASH WALL PER DETAIL ON SHEET 3
9. CONSTRUCT BERM PER TOP OF SLOPE BERM PER DETAIL ON SHEET 3
10. CONSTRUCT DOWN DRAIN INTERSECTION PER DETAIL ON SHEET 2
13. INSTALL RIPRAP AS SHOWN, SIZE PER PLAN

SEE SHEET 5

SEE SHEET 11

SCALE: 1" = 60'

See Plate 1 for Legend

PLATE 9

"AS–BUILT"
THE RECEIPT OF AS–BUILT PLANS AND CITY'S ACCEPTANCE THEREOF DOES NOT ABSOLVE THE ENGINEER OF WORK OF ANY RESPONSIBILITY FOR THE PROJECT DESIGN.
ENGINEER OF WORK:
DATE:
RCE:
EXP.

ALTA CALIFORNIA GEOTECHNICAL, INC.
170 N. MAPLE STREET, STE 108, CORONA, CA 92880
TELEPHONE: (951) 509-7090
PROJECT NUMBER: 1–0366
DATE: 4–8–2021

WDID#

Know what's below. Call before you dig. 811

MARK	BY	DATE	DESCRIPTION	APPR.	DATE
	ENGINEER		REVISIONS		COUNTY

SEAL–CITY
REGISTERED PROFESSIONAL ENGINEER MICHAEL THORNTON No. C44226 Exp. 6/30/21 CIVIL STATE OF CALIFORNIA

CITY OF CALIMESA
PUBLIC WORKS DEPARTMENT

MICHAEL THORNTON P.E., CITY ENGINEER, RCE C44226 — DATE

MARGARET MONSON, PUBLIC WORKS DIRECTOR — DATE

SEAL–DESIGN ENGINEER
REGISTERED PROFESSIONAL ENGINEER GEORGE ALAN LENFESTEY No. 45920 Exp. 12/31/20 CIVIL STATE OF CALIFORNIA

PREPARED BY:
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951-200-6840

12/10/20 DATE

GEORGE ALAN LENFESTEY
R.C.E. 45920 EXP. 12–31–2020

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SCALE: AS NOTED

CITY OF CALIMESA
MASS GRADING PLANS PARCEL MAP 37862
MASS GRADING PLAN SHEET

12 OF 23 SHEETS

FOR: CITY OF CALIMESA PUBLIC WORKS DEPARTMENT

PLAN No.

NOT FOR CONSTRUCTION

Plotted: Dec 10, 2020 - 10:45am By: gilberto DWG: N:\01.169.000 Oak Valley Town Center\Drawings\MGP\MGP-04-12-Grading.dwg

ALTA CALIFORNIA
GEOTECHNICAL INC.

170 North Maple Street, Suite 108
Corona, CA 92880
www.altageotechnical.com

OAK VALLEY DEVELOPMENT COMPANY
10410 Roberts Road
Calimesa, California 92320

May 19, 2021
Project No. 1-0366

Attention: Mr. John Ohanian

Subject: ***UPDATED OVEREXCAVATION RECOMMENDATIONS***
The Oak Valley Town Center Project,
Parcel Map 37862, In the City of Calimesa, California

Reference: Alta California Geotechnical, Inc., 2021, Supplemental Geotechnical Investigation, The Oak Valley Town Center Project, Parcel Map 37862, in the City of Calimesa, California, dated April 8, 2021 (Project No. 1-0366).

Dear Mr. Ohanian:

Presented herein are Alta California Geotechnical, Inc.'s (Alta) updated overexcavation recommendations for the Oak Valley Town Center project, Parcel Map 37862, in the City of Calimesa, California. The following updated recommendations are based on the referenced report and discussions with the Birtcher design team.

Overexcavation recommendations below building pads were provided in the referenced report. Per the Birtcher design team's request, the recommendations shall be updated to state that footings for structures should be underlain by a minimum of three (3) feet of compacted fill. As such, for pads where unsuitable soil removals do not provide the minimum depth of compacted fill, or where design grades and/or remedial grading activities create cut/fill transitions, the cut and shallow fill portions of the building pads should be over-excavated during grading and replaced with compacted fill. All other recommendations presented in the referenced report remain applicable.

Should you have any questions or need additional information, please contact the undersigned at (951) 509-7090.

Respectfully submitted,
Alta California Geotechnical, Inc.

SCOTT A. GRAY/RGE 2857
Reg. Exp.: 12-31-22
Registered Geotechnical Engineer
President

Distribution: (1) Addressee
SAG: 1-0366, May 19, 2021 (Updated Overexcavation Recommendations, Oak Valley Town Center Parcel Map 37862, Calimesa)