

**GEOTECHNICAL INVESTIGATION  
PROPOSED HARVEST LANDING  
BUSINESS PARK**

SWC Perris Boulevard and Orange Avenue  
Perris, California  
for  
Howard Industrial Partners



**SOUTHERN  
CALIFORNIA  
GEOTECHNICAL**  
*A California Corporation*

September 20, 2023 (Revised November 5, 2024)

Howard Industrial Partners  
1944 North Tustin Street, Suite 122  
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**SOUTHERN  
CALIFORNIA  
GEOTECHNICAL**  
*A California Corporation*

Attention: Mr. Mike Tunney  
Vice President

Project No.: **22G183-3R2**

Subject: **Geotechnical Investigation**  
Harvest Landing Business Park – Phase I  
SWC Perris Boulevard and Orange Avenue  
Perris, California

Mr. Tunney:

In accordance with your request, we have conducted a geotechnical investigation at the subject site. We are pleased to present this report summarizing the conclusions and recommendations developed from our investigation.

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

**SOUTHERN CALIFORNIA GEOTECHNICAL, INC.**

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## 1.0 EXECUTIVE SUMMARY

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Presented below is a brief summary of the conclusions and recommendations of this investigation. Since this summary is not all inclusive, it should be read in complete context with the entire report.

### Geotechnical Design Considerations

- Native alluvial soils were encountered at each boring, extending to the maximum depth explored at each boring location, up to 50± feet.
- The majority of the alluvial soils encountered at the boring locations consist of medium dense to very dense and stiff to hard older native alluvium, but some of the borings encountered loose to medium dense younger native alluvium within the upper 5½± feet of the ground surface.
- Some of the near-surface younger and older native alluvium possess unfavorable consolidation/collapse characteristics within the upper 4 to 6± feet below the existing site grades. These soils, in their present condition, are not considered suitable for support of the foundation loads of the new structures. The alluvium present at depths greater than 4 to 6± feet generally possesses higher strengths and densities and more favorable consolidation/collapse characteristics.
- Remedial grading will be necessary to remove the upper portion of the near-surface native alluvial soils and replace these materials as compacted structural fill soils.

### Site Preparation

- Demolition of the existing residential structures in the western portion of the site will be required in order to facilitate construction of the new buildings. Demolition should also include any utilities, piping, septic tanks and other existing subsurface improvements that will not remain in place for use with the new development. Debris resultant from demolition should be disposed of off-site. Alternatively, concrete and asphalt debris may be pulverized to a maximum 2-inch particle size, well mixed with the on-site sands, and incorporated into new structural fills.
- Initial site preparation should include removal of vegetation, including organic topsoil, trees and tree root systems.
- Remedial grading is recommended to be performed within the proposed building pad areas. At a minimum, the building pad areas should be overexcavated to a depth of at least 6 feet below existing grade and to a depth of at least 5 feet below proposed pad grade, whichever is greater. Overexcavation within the foundation areas is recommended to extend to a depth of at least 3 feet below proposed foundation bearing grade.
- Based on the greater foundation loads anticipated for the proposed distribution building (Building No. 1) additional overexcavation should be performed within the influence zones of new foundations to a depth equal to at least 1 times the footing width (and to a minimum of 3 feet) below the foundation bearing grade.
- After overexcavation has been completed, the subgrade soils should be evaluated by the geotechnical engineer to identify additional soils that may need to be overexcavated. The resulting subgrade should then be scarified to a depth of 12 inches, moisture conditioned or air dried to 2 to 4 percent above optimum, and recompacted to at least 90 percent of the



ASTM D-1557 maximum dry density. The previously excavated soils may then be replaced as compacted structural fill.

- The new parking area subgrade soils are recommended to be scarified to a depth of 12± inches, thoroughly moisture conditioned and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density.

### Building Foundations

- Conventional shallow foundations, supported in newly placed compacted fill.
- 2,500 lbs/ft<sup>2</sup> maximum allowable soil bearing pressure.
- Minimum reinforcement consisting of at least four (4) No. 5 rebars (2 top and 2 bottom) in strip footings, based on the presence of low expansive soils. Additional reinforcement may be necessary for structural considerations.

### Building Floor Slabs

- Conventional Slab-on-Grade: minimum 6 inches thick.
- Modulus of Subgrade Reaction:  $k = 120$  psi/in.
- Minimum slab reinforcement: Reinforcement of the floor slab should consist of No. 3 bars at 18-inches on center in both directions due to the presence of low expansive soils. The actual floor slab reinforcement should be determined by the structural engineer, based upon the imposed loading and intended use.

### Pavement Design

ASPHALT PAVEMENTS (R = 25)					
Materials	Thickness (inches)				
	Auto Parking and Auto Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic			
		TI = 6.0	TI = 7.0	TI = 8.0	TI = 9.0
Asphalt Concrete	3	3½	4	5	5½
Aggregate Base	7	9	11	12	14
Compacted Subgrade	12	12	12	12	12

PORTLAND CEMENT CONCRETE PAVEMENTS (R = 25)				
Materials	Thickness (inches)			
	Autos and Light Truck Traffic (TI = 6.0)	Truck Traffic		
		TI = 7.0	TI = 8.0	TI = 9.0
PCC	5	5½	6½	8
Compacted Subgrade (95% minimum compaction)	12	12	12	12

## **2.0 SCOPE OF SERVICES**

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The scope of services performed for this project was in accordance with our Proposal No. 23P306, dated July 7, 2023 and Change Order No. 22G183-CO2, dated August 23, 2024. The scope of services included a visual site reconnaissance, subsurface exploration, field and laboratory testing, and geotechnical engineering analysis to provide criteria for preparing the design of the building foundations, building floor slabs, and parking lot pavements along with site preparation recommendations and construction considerations for the proposed development. The evaluation of the environmental aspects of this site was beyond the scope of services for this geotechnical investigation.

## **3.0 SITE AND PROJECT DESCRIPTION**

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### **3.1 Site Conditions**

The overall site is located at the southwest corner of North Perris Boulevard and Orange Avenue in Perris, California. The site is bounded to the north by Orange Avenue, Placentia Avenue, and vacant land, to the west by Interstate 215 Frontage Road and Freeway I-215, to the south by an existing commercial development and a vacant land, and to the east by an existing commercial development, North Perris Boulevard and Barrett Avenue. The western portion of the site is partially transected by Indian Avenue (trending north-south). Orange Avenue (trending east-west) separates the overall site. The portion south of Orange Avenue is designated as Phase 1 on the site plans. The portion north of Orange Avenue is designated as Phase 2 on the site plans. The general location of the site is illustrated on the Site Location Map, enclosed as Plate 1 in Appendix A of this report.

The overall site consists of several parcels, which total 358.28± acres in size. Phase 1 is 214.81± acres and Phase 2 is 143.47± acres in size. The west-central area of the site, is developed with four (4) single-family residences (SFRs) which range from 1,200 to 6,160± ft<sup>2</sup> in size. The residences are of wood-frame and stucco construction and are assumed to be supported on conventional shallow foundations, with slab-on-grade floors. Ground surface cover surrounding the SFRs includes asphaltic concrete with Portland cement concrete driveways, exposed soil, and trees. The remaining areas of the site are vacant and undeveloped. Ground surface cover consists of exposed soil with sparse to moderate native grass and weed growth and occasional trees. A water pump is present approximately 200 feet south of the intersection of Perris Boulevard and Orange Avenue, within the site's boundary. A 3- to 4-foot deep drainage rut is present in the central-eastern area of the site, trending east-west between a dirt road located and the east boundary of the site. Many small stockpiles of plant material and woodchips are located along the eastern side of Indian Avenue, approximately 2 to 4 feet in height. An elementary school with several structures is also located in northwestern area of the site (this area has not been explored).

Based on historic aerial photographs obtained from Google Earth, the site was previously used for farming activities. Due to previous tilling activities, the ground surface throughout the site is generally hummocky.

Detailed topographic information was obtained from a site plan, prepared by FM Civil Engineers, Inc. Based on this plan, the overall site topography slopes downward to the east at a gradient of 1.5± percent.

### **3.2 Proposed Development**

Based on a conceptual master plan prepared by Architects Orange (AO), Phase 1 of the site will be developed with the following industrial/commercial buildings, located throughout the site:

<b>Building Type</b>	<b>Building Name</b>	<b>Location</b>	<b>Size (ft<sup>2</sup>)</b>
Distribution	1	Central	319,000
Industrial	2	Northwest	384,000
Industrial	3	West	110,000
Industrial	4	West	58,000
Industrial	5	West	22,000
Industrial	6	South-Central	505,000
Industrial	7	South	304,000
Commercial	Big Box Retail	East-Central	162,000
Commercial	Shopping (A to K)	East-Central	200,000
Commercial	Pad 1	Northeast	4,500
Commercial	Pad 2	Northeast	4,100
Commercial	Pad 3	Northeast	4,800
Commercial	Pad 4	Northeast	8,800
Commercial	Pad 5	Northeast	6,200
Commercial	Pad 6	East	2,500
Commercial	Pad 7	East	8,600
Commercial	Pad 8	East	7,200
Commercial	Outparcel 1	East	5,300
Commercial	Outparcel 2	East	5,300

Phase 2 development has not been specified at the time of this report. It is recommended that additional exploration be performed at Phase 2 of the site, once the proposed development has been specified.

#### Distribution – Building No. 1

Dock-high doors will be constructed along portions of the east and west building walls. The building is expected to be surrounded by asphaltic concrete pavements in the parking and drive lanes, Portland cement concrete pavements in the loading dock areas, and limited areas of concrete flatwork and landscape planters throughout.

Detailed structural information has not been provided. We assume the new main distribution building will be a two-story structure of tilt-up concrete construction, typically supported on conventional shallow foundation system with a concrete slab-on-grade floor. Based on the assumed construction, maximum column and wall loads are expected to be on the order of 700 to 900 kips and 4 to 7 kips per linear foot, respectively.

#### Industrial – Building Nos. 2 through 7

Dock-high doors will be constructed along a portion of at least one building wall for each of the industrial buildings. The buildings are expected to be surrounded by asphaltic concrete pavements in the parking and drive lanes, Portland cement concrete pavements in the loading dock areas, and limited areas of concrete flatwork and landscape planters throughout.

Detailed structural information has not been provided. We assume the new industrial buildings will be single-story structures of tilt-up concrete construction, typically supported on conventional shallow foundation systems with concrete slab-on-grade floors. Based on the assumed construction, maximum column and wall loads are expected to be on the order of 100 kips and 4 to 7 kips per linear foot, respectively.

#### Commercial – Big Box Retail

Dock-high doors will be constructed along a portion of the southern building wall. The building is expected to be surrounded by asphaltic concrete pavements in the parking and drive lanes, Portland cement concrete in the loading dock areas, and limited areas of concrete flatwork and landscape planters throughout. This commercial development will include an automobile service station located east of the building. The service station will include a canopy, five (5) fuel pump islands, and underground storage tanks (USTs).

Detailed structural information has not been provided. We assume that the commercial building will be a single-story structure of tilt-up concrete construction, typically supported on conventional shallow foundation system with a concrete slab-on-grade floor. Based on the assumed construction, maximum column and wall loads are expected to be on the order of 100 kips and 4 to 7 kips per linear foot, respectively. The new pump island canopy is expected to be a steel frame structure, typically supported on deepened shallow foundations. Maximum column loads for the canopy are expected to be in the range of 20 kips, with significant overturning and/or uplift loads.

#### Commercial – Shopping Center

The shopping center building will consist of ten (10) suites ranging from 5,000± ft<sup>2</sup> to 54,500± ft<sup>2</sup> in size. Dock-high doors will be constructed along a portion of the west building walls for most of the suites of the shopping center building. The building is expected to be surrounded by asphaltic concrete pavements in the parking and drive lanes, Portland cement concrete in the loading dock areas, and limited areas of concrete flatwork and landscape planters throughout.

Detailed structural information has not been provided. We assume that the new shopping center building will be a single-story structure of wood frame or masonry block construction, typically supported on conventional shallow foundation systems with a concrete slab-on-grade floor. Based

on the assumed construction, maximum column and wall loads are expected to be on the order of 50 kips and 2 to 3 kips per linear foot, respectively.

#### Commercial – Retail and Restaurant Buildings

Ten (10) building pads are proposed in the eastern region of the site and will consist of either retail or restaurant developments. Two (2) fast-food restaurant buildings will include drive-thru lanes. The buildings are expected to be surrounded by asphaltic concrete pavements in the parking and drive lanes, concrete flatwork, and limited areas of landscape planters throughout.

Detailed structural information has not been provided. We assume that the new retail and restaurant buildings will be single-story structures of wood frame construction, typically supported on conventional shallow foundation systems with concrete slab-on-grade floors. Based on the assumed construction, maximum column and wall loads are expected to be on the order of 20 kips and 1 to 3 kips per linear foot, respectively.

#### Streets

Barrett Avenue and two access streets will be constructed at the site. It is assumed that the new streets will consist of asphaltic concrete pavements.

#### General

No significant amounts of below-grade construction, such as basements or crawl spaces, are expected to be included in the proposed development. Based on our review of the previous conceptual grading plans, cuts and fills of up to 8± feet are expected to be necessary to achieve the proposed building pad grades throughout the site.

### **3.3 Previous Studies**

#### Geotechnical Investigation

SCG previously performed a geotechnical investigation for the western parcels at the subject site. The report is referenced as:

Geotechnical Investigation, Proposed Harvest Landing Industrial Development, Indian Avenue and Orange Avenue, Perris, California, prepared for Howard Industrial Partners, by Southern California Geotechnical, Inc. (SCG), SCG Project No. 22G183-1, dated June 13, 2022.

As a part of this study, twenty-three (23) borings (Identified as Boring Nos. B-1 through B-23) were advanced to depths of 15 to 25± feet below the existing site grades. Native alluvium was encountered at each boring location, extending to at least the maximum depth explored of 25± feet below existing site grades. The alluvium generally consisted of medium dense to very dense silty sands to sandy silts, with trace to little clay content. Free water was not encountered during the drilling of the borings.

## Infiltration Testing

SCG also previously conducted infiltration testing at the subject site. The results of this testing are presented in the report identified as follows:

Results of Infiltration Testing, Proposed Harvest Landing Industrial Development, Indian Avenue and Orange Avenue, Perris, California, prepared by SCG, SCG Project No. 22G183-2, dated July 1, 2022.

As a part of this investigation, one exploratory boring (Boring No. B-24) was performed to a depth of 60± feet (in addition to the infiltration test excavations, which consisted of both trenches and borings). The near-surface alluvium encountered at depths less than 25± feet below existing site grades consisted of medium dense to very dense fine to medium sandy silts, silty fine to medium sands, clayey fine to coarse sands, and hard fine to coarse sandy clays. At depths greater than 25± feet, the alluvium consisted of medium dense to very dense fine sandy silts, fine to medium sandy silts, silty fine to medium sands, and hard fine to medium sandy clays. Groundwater was not encountered during the drilling of the exploratory boring, or at the infiltration test locations.

## Additional Infiltration Testing

SCG previously conducted additional infiltration testing at the subject site. The results of this testing are presented in the report identified as follows:

Results of Additional Infiltration Testing, Harvest Landing Industrial Development, Indian Avenue and Orange Avenue, Perris, California, prepared by SCG, SCG Project No. 22G183-4, dated September 20, 2023.

Native younger alluvium was encountered at the ground surface at four infiltration test locations, extending to depths of 3 to 6± feet below the existing site grades. The younger alluvium generally consisted of medium dense silty sands and sandy silts. Native older alluvium was encountered beneath the native younger alluvium and at the ground surface at the remaining infiltration test locations, extending to at least the maximum depth explored of 10½± feet. The older alluvium generally consisted of medium dense to very dense silty sands and sandy silts with trace to little clay content. The older alluvium occasionally possesses weak cementation. Groundwater was not encountered during the drilling of any of the borings.

## **4.0 SUBSURFACE EXPLORATION**

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### **4.1 Scope of Exploration/Sampling Methods**

The subsurface exploration conducted for this project consisted of fifty-one (51) borings identified as Boring Nos. B-25 through B-75, advanced to depths of 10 to 50± feet below the existing site grades. These borings are in addition to those performed for the referenced previous studies, Boring Nos. B-1 through B-24, inclusive. All of the borings were logged during drilling by a member of our staff.

The borings were advanced with hollow-stem augers, by a conventional truck-mounted drilling rig. Representative bulk and relatively undisturbed soil samples were taken during drilling. Relatively undisturbed soil samples were taken with a split barrel "California Sampler" containing a series of one inch long, 2.416± inch diameter brass rings. This sampling method is described in ASTM Test Method D-3550. In-situ samples were also taken using a 1.4± inch inside diameter split spoon sampler, in general accordance with ASTM D-1586. Both of these samplers are driven into the ground with successive blows of a 140-pound weight falling 30 inches. The blow counts obtained during driving are recorded for further analysis. Bulk samples were collected in plastic bags to retain their original moisture content. The relatively undisturbed ring samples were placed in molded plastic sleeves that were then sealed and transported to our laboratory.

The approximate locations of the borings are indicated on the Boring Location Plan, included as Plate 2 in Appendix A of this report. The Boring Logs, which illustrate the conditions encountered at the boring locations, as well as the results of some of the laboratory testing, are included in Appendix B.

### **4.2 Geotechnical Conditions**

#### Younger Alluvium

Younger native alluvium was encountered at the ground surface at Boring Nos. B-25, B-28, B-29, B-31, B-32, B-50, B-55 through B-58, B-60, B-64, B-67, B-71, B-73, and B-74, extending to depths of 2½ to 5½± feet below existing site grades. The younger alluvium generally consists of loose to very dense silty fine sands, silty fine to medium sands, fine sandy silts, clayey fine sands. Occasional layers of very stiff fine sandy clays and silty clays. The younger native alluvial soils are classified as "alluvium" on the boring logs.

#### Older Alluvium

Native older alluvium was encountered beneath the younger native alluvial soils (at the boring locations listed above) and at the ground surface at the remaining boring locations. All of the borings were terminated within the older alluvium, and the older alluvial soils extend to at least



the maximum depth explored of 50± feet below ground surface. The older alluvial soils generally consist of loose to very dense well- to poorly-graded silty sands with varying clay content, well-graded to poorly-graded sandy silts with varying clay content, well-graded to poorly-graded clayey sands with varying silt content, and clayey silts. Additionally, layers of very stiff to hard fine sandy clays and silty clays were encountered. The older alluvium generally possesses weak to moderate cementation, and occasionally possesses trace to extensive calcareous nodules and veining.

### Groundwater

Free water was not encountered during the drilling of any of the borings. Based on the moisture content of the recovered soil samples and the lack of free water in the borings, the static groundwater table is at a depth greater than the maximum explored depth of 50± feet below existing site grades for this project.

Recent water level data was obtained from the California Department of Water Resources website, <http://www.water.ca.gov/waterdatalibrary/>. The nearest monitoring well is located on the northeast corner of the site. Water level readings within this monitoring well indicates a groundwater level of 40± feet (March 2023) below the ground surface.

## **5.0 LABORATORY TESTING**

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The soil samples recovered from the subsurface exploration were returned to our laboratory for further testing to evaluate selected physical and engineering properties of the soils. The tests are briefly discussed below. It should be noted that the test results are specific to the actual samples tested, and variations could be expected at other locations and depths.

### Classification

Recovered soil samples were classified using the Unified Soil Classification System (USCS), in accordance with ASTM D-2488. Field identifications were then supplemented with additional visual classifications and/or by laboratory testing. The USCS classifications are shown on the Boring Logs and are periodically referenced throughout this report.

### Density and Moisture Content

The density has been evaluated for selected relatively undisturbed ring samples. These densities were evaluated in general accordance with the method presented in ASTM D-2937. The results are recorded as dry unit weight in pounds per cubic foot. The moisture contents are evaluated in accordance with ASTM D-2216, and are expressed as a percentage of the dry weight. These test results are presented on the Boring Logs.

### Consolidation

Selected soil samples have been tested to evaluate their consolidation potential, in accordance with ASTM D-2435. The testing apparatus is designed to accept either natural or remolded samples in a one-inch high ring, approximately 2.416 inches in diameter. Each sample is then loaded incrementally in a geometric progression and the resulting deflection is recorded at selected time intervals. Porous stones are in contact with the top and bottom of the sample to permit the addition or release of pore water. The samples are typically inundated with water at an intermediate load to evaluate their potential for collapse or heave. The results of the consolidation testing are plotted on Plates C-1 through C-20 in Appendix C of this report. The results of additional consolidation tests performed at the time of the previous geotechnical investigation are included in Appendix F of this Report.

### Maximum Dry Density and Optimum Moisture Content

Representative bulk samples have been tested for their maximum dry density and optimum moisture content. The results have been obtained using the Modified Proctor procedure, per ASTM D-1557 and are presented on Plates C-21, C-22, and C-23 in Appendix C of this report. This test is generally used to compare the in-situ densities of undisturbed field samples, and for later compaction testing. Additional testing of other soil types or soil mixes may be necessary at a later date. The results of additional modified Proctor tests performed at the time of the referenced geotechnical investigation are included in Appendix F of this Report.

### Expansion Index

The expansion potential of the on-site soils was evaluated in general accordance with ASTM D-4829. The testing apparatus is designed to accept a 4-inch diameter, 1-in high, remolded sample. The sample is initially remolded to  $50 \pm 1$  percent saturation and then loaded with a surcharge equivalent to 144 pounds per square foot. The sample is then inundated with water, and allowed to swell against the surcharge. The resultant swell or consolidation is recorded after a 24-hour period. The results of the EI testing are as follows:

<b><u>Sample Identification</u></b>	<b><u>Expansion Index</u></b>	<b><u>Expansive Potential</u></b>
B-2 @ 0 to 5 feet (22G183-1)	7	Very Low
B-9 @ 0 to 5 feet (22G183-1)	8	Very Low
B-12 @ 0 to 5 feet (22G183-1)	18	Very Low
B-35 @ 1 to 5 feet	10	Very Low
B-48 @ 1 to 5 feet	33	Low
B-67 @ 1 to 5 feet	31	Low

### Soluble Sulfates

Representative samples of the near-surface soils were submitted to a subcontracted analytical laboratory for evaluation of soluble sulfate content. Soluble sulfates are naturally present in soils, and if the concentration is high enough, can result in degradation of concrete which comes into contact with these soils. The results of the soluble sulfate testing are presented below, and are discussed further in a subsequent section of this report.

<b><u>Sample Identification</u></b>	<b><u>Soluble Sulfates (%)</u></b>	<b><u>Sulfate Classification</u></b>
B-2 @ 0 to 5 feet (22G183-1)	0.017	Negligible (S0)
B-9 @ 0 to 5 feet (22G183-1)	0.022	Negligible (S0)
B-12 @ 0 to 5 feet (22G183-1)	0.014	Negligible (S0)
B-33 @ 1 to 5 feet	0.016	Negligible (S0)
B-37 @ 1 to 5 feet	0.016	Negligible (S0)
B-42 @ 1 to 5 feet	0.009	Negligible (S0)
B-48 @ 1 to 5 feet	0.005	Negligible (S0)
B-55 @ 1 to 5 feet	0.006	Negligible (S0)

### Corrosivity Testing

Representative samples of the near-surface soils were submitted to a subcontracted corrosion engineering laboratory to identify potentially corrosive characteristics with respect to common construction materials. The corrosivity testing included an evaluation of the minimum electrical

resistivity, pH, and chloride and nitrate concentrations of the soils, as well as other tests. The results of some of these tests are presented below.

<b><u>Sample Identification</u></b>	<b><u>Saturated Resistivity (ohm-cm)</u></b>	<b><u>pH</u></b>	<b><u>Chlorides (mg/kg)</u></b>	<b><u>Nitrates (mg/kg)</u></b>	<b><u>Sulfides (mg/kg)</u></b>	<b><u>Redox Potential (mV)</u></b>
B-2 @ 0 to 5 feet (22G183-1)	4,958	7.3	60.3	2.7	1.4	310
B-9 @ 0 to 5 feet (22G183-1)	4,087	8.1	81.4	152.3	0.2	204
B-12 @ 0 to 5 feet (22G183-1)	5,427	8.9	44.6	0.2	0.9	124
B-33 @ 1 to 5 feet	4,556	7.7	187.0	13.5	0.7	130
B-37 @ 1 to 5 feet	1,541	7.8	247.1	0.1	<0.1	149
B-42 @ 1 to 5 feet	1,206	7.8	385.2	0.6	<0.1	143
B-48 @ 1 to 5 feet	3,015	8.5	72.4	25.5	1.4	120
B-55 @ 1 to 5 feet	2,278	8.8	118.4	1.6	2.3	116

## **6.0 CONCLUSIONS AND RECOMMENDATIONS**

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Based on the results of our review, field exploration, laboratory testing and geotechnical analysis, the proposed development is considered feasible from a geotechnical standpoint. The recommendations contained in this report should be taken into the design, construction, and grading considerations.

The recommendations are contingent upon all grading and foundation construction activities being monitored by the geotechnical engineer of record. The recommendations are provided with the assumption that an adequate program of client consultation, construction monitoring, and testing will be performed during the final design and construction phases to verify compliance with these recommendations. Maintaining Southern California Geotechnical, Inc., (SCG) as the geotechnical consultant from the beginning to the end of the project will provide continuity of services. The geotechnical engineering firm providing testing and observation services shall assume the responsibility of Geotechnical Engineer of Record.

The Grading Guide Specifications, included as Appendix D, should be considered part of this report, and should be incorporated into the project specifications. The contractor and/or owner of the development should bring to the attention of the geotechnical engineer any conditions that differ from those stated in this report, or which may be detrimental for the development.

### **6.1 Seismic Design Considerations**

The subject site is located in an area which is subject to strong ground motions due to earthquakes. The performance of a site specific seismic hazards analysis was beyond the scope of this investigation. However, numerous faults capable of producing significant ground motions are located near the subject site. Due to economic considerations, it is not generally considered reasonable to design a structure that is not susceptible to earthquake damage. Therefore, significant damage to structures may be unavoidable during large earthquakes. The proposed structures should, however, be designed to resist structural collapse and thereby provide reasonable protection from serious injury, catastrophic property damage and loss of life.

#### **Faulting and Seismicity**

Research of available maps indicates that the subject site is not located within an Alquist-Priolo Earthquake Fault Zone. Therefore, the possibility of significant fault rupture on the site is considered to be low.

The potential for other geologic hazards such as seismically induced settlement, lateral spreading, tsunamis, inundation, seiches, flooding, and subsidence affecting the site is considered low.

## Seismic Design Parameters

The 2022 California Building Code (CBC) provides procedures for earthquake resistant structural design that include considerations for on-site soil conditions, occupancy, and the configuration of the structure including the structural system and height. The seismic design parameters presented below are based on the soil profile and the proximity of known faults with respect to the subject site. Based on the adoption of the 2022 CBC on January 1, 2023, we expect that the proposed development will be designed in accordance with the 2022 CBC.

The 2022 CBC Seismic Design Parameters have been generated using the SEAOC/OSHPD Seismic Design Maps Tool, a web-based software application available at the website [www.seismicmaps.org](http://www.seismicmaps.org). This software application calculates seismic design parameters in accordance with several building code reference documents, including ASCE 7-16, upon which the 2022 CBC is based. The application utilizes a database of risk-targeted maximum considered earthquake ( $MCE_R$ ) site accelerations at 0.01-degree intervals for each of the code documents. The table below was created using data obtained from the application. The output generated from this program is attached to this letter.

The 2022 CBC states that for Site Class D sites with a mapped  $S_1$  value greater than 0.2, a site-specific ground motion analysis may be required in accordance with Section 11.4.8 of ASCE 7-16. Supplement 3 to ASCE 7-16, modifies Section 11.4.8 of ASCE 7-16 and states that "a ground motion hazard analysis is not required where the value of the parameter  $SM_1$  determined by Eq. (11.4-2) is increased by 50% for all applications of  $SM_1$  in this Standard. The resulting value of the parameter  $SD_1$  determined by Eq. (11.4-4) shall be used for all applications of  $SD_1$  in this Standard."

The seismic design parameters presented in the table below were calculated using the site coefficients ( $F_a$  and  $F_v$ ) from Tables 1613.2.3(1) and 1613.2.3(2) presented in Section 16.4.4 of the 2022 CBC. It should be noted that the site coefficient  $F_v$  and the parameters  $SM_1$  and  $SD_1$  were not included in the SEAOC/OSHPD Seismic Design Maps Tool output for the ASCE 7-16 standard. We calculated these parameters-based on Table 1613.2.3(2) in Section 16.4.4 of the 2022 CBC using the value of  $S_1$  obtained from the Seismic Design Maps Tool. The values of  $SM_1$  and  $SD_1$  tabulated below were determined using equations 11.4-2 and 11.4-4 of ASCE 7-16 (Equations 16-20 and 16-23, respectively, of the 2022 CBC) and **do not include a 50 percent increase**. As discussed above, if a site-specific analysis has not been performed,  $SM_1$  and  $SD_1$  must be increased by 50 percent for all applications with respect to the ASCE 7-16 standard.

## 2022 CBC SEISMIC DESIGN PARAMETERS

Parameter		Value
Mapped Spectral Acceleration at 0.2 sec Period	$S_s$	1.483
Mapped Spectral Acceleration at 1.0 sec Period	$S_1$	0.551
Site Class	---	D
Site Modified Spectral Acceleration at 0.2 sec Period	$S_{MS}$	1.483
Site Modified Spectral Acceleration at 1.0 sec Period	$S_{M1}$	0.964*
Design Spectral Acceleration at 0.2 sec Period	$S_{DS}$	0.989
Design Spectral Acceleration at 1.0 sec Period	$S_{D1}$	0.642*

\*Note: These values must be increased by 50 percent if a site-specific ground motion hazard analysis has not been performed. However, this increase is not expected to affect the design of the structure type proposed for this site. This assumption should be confirmed by the project structural engineer. The values tabulated above do not include a 50-percent increase.

### Liquefaction

Liquefaction is the loss of strength in generally cohesionless, saturated soils when the pore-water pressure induced in the soil by a seismic event becomes equal to or exceeds the overburden pressure. The primary factors which influence the potential for liquefaction include groundwater table elevation, soil type and plasticity characteristics, relative density of the soil, initial confining pressure, and intensity and duration of ground shaking. The depth within which the occurrence of liquefaction may impact surface improvements is generally identified as the upper 50 feet below the existing ground surface. Liquefaction potential is greater in saturated, loose, poorly graded fine sands with a mean ( $d_{50}$ ) grain size in the range of 0.075 to 0.2 mm (Seed and Idriss, 1971). Non-sensitive clayey (cohesive) soils which possess a plasticity index of at least 18 (Bray and Sancio, 2006) are generally not considered to be susceptible to liquefaction, nor are those soils which are above the historic static groundwater table.

The Riverside County GIS website indicates that the subject site is located within a zone of low liquefaction susceptibility. In addition, the subsurface conditions encountered at the boring locations are not considered to be conducive to liquefaction. These conditions consist of moderate to high strength older native alluvial soils and no evidence of a long-term groundwater table within the depths explored by the borings. Based on these considerations, liquefaction is not considered to be a design concern for this project.

## **6.2 Geotechnical Design Considerations**

### General

As part of the current conceptual site plan, provided by the client, new proposed buildings were added to the site and the layouts of other buildings were adjusted. Based on the current plan, additional subsurface exploration was performed in areas that were not entirely investigated. This report was revised to reflect the current site layout and include the additional exploration findings. Native alluvium was encountered at the ground surface at each boring location, extending to at

least the maximum depth explored of 50± feet below the existing site grades. The majority of the alluvial soils encountered at the boring locations consist of medium dense to very dense and stiff to hard older native alluvium, but some of the borings encountered loose to medium dense younger native alluvium within the upper 5½± feet of the ground surface. Some of the near-surface younger and older native alluvium possess unfavorable consolidation/collapse characteristics within the upper 4 to 6± feet below the existing site grades. At greater depths, the older native alluvial soils possess relatively high strengths and more favorable consolidation/collapse characteristics. Based on these conditions, remedial grading is considered warranted within the proposed building areas in order to remove the existing upper portion of the near-surface native alluvial soils, and replace these materials as compacted structural fill soils.

### Settlement

The recommended remedial grading will remove a portion of the near-surface native alluvial soils and replace these materials as compacted structural fill. The native soils that will remain in place below the recommended depth of overexcavation possess generally favorable consolidation/collapse characteristics and will not be subject to significant stress increases from the foundations of the new structures. Therefore, following completion of the recommended grading, post-construction settlements are expected to be within tolerable limits.

### Expansion

The near surface soils at this site generally consist of silty sands and sandy silts with occasional clay content as well as clayey sands and occasional sandy clays and silty clays. The results of laboratory testing performed on a representative samples of these materials indicate that they possess a very low to low expansion potential ( $EI = 7$  to  $33$ ). Based on the presence of expansive soils, adequate moisture conditioning of the subgrade soils and fill soils will be necessary during grading, and special care must be taken to maintaining moisture content of these soils at 2 to 4 percent above the Modified Proctor optimum. This will require the contractor to frequently moisture condition these soils throughout the grading process, unless grading occurs during a period of relatively wet weather. It should be noted that some of the deeper soil layers contain clay that could potentially have a higher expansion potential. We recommend additional testing during grading or after the building pads are completed, as appropriate, to confirm the conditions assumed above.

### Soluble Sulfates

The results of the soluble sulfate testing indicates that the tested soil samples possesses a level of soluble sulfates that is considered to be "not applicable" (S0) with respect to the American Concrete Institute (ACI) Publication 318-14 Building Code Requirements for Structural Concrete and Commentary, Section 4.3. Therefore, specialized concrete mix designs are not considered to be necessary, with regard to sulfate protection purposes. It is, however, recommended that additional soluble sulfate testing be conducted at the completion of rough grading to verify the soluble sulfate concentrations of the soils which are present at pad grade within the building areas.



## Corrosion Potential

The results of laboratory testing indicate that the on-site soils possess minimum resistivities ranging between 1,206 to 5,427 ohm-cm, and a pH value of 7.3 to 8.9. The soils possess a redox potentials ranging between 116 and 310 mV and sulfide concentrations of less than 0.1 to 2.3 parts per million. These test results have been evaluated in accordance with guidelines published by the Ductile Iron Pipe Research Association (DIPRA). The DIPRA guidelines consist of a point system by which characteristics of the soils are used to quantify the corrosivity characteristics of the site. Resistivity, pH, sulfide concentration, redox potential, and moisture content the five factors that enter into the evaluation procedure. **Based on these factors, the on-site soils are considered to be mildly to severely corrosive to ductile iron pipe. Therefore, corrosion protection is expected to be required for cast iron or ductile iron pipes.**

A relatively low concentration (up to 385.2 mg/kg) of chlorides was detected in the samples submitted for corrosivity testing. In general, soils possessing chloride concentrations in excess of 500 parts per million (ppm) are considered to be corrosive with respect to steel reinforcement within reinforced concrete. Based on the lack of significant chlorides in the tested samples, the site is considered to have a C1 chloride exposure in accordance with the American Concrete Institute (ACI) Publication 318 Building Code Requirements for Structural Concrete and Commentary. Therefore, a specialized concrete mix design for reinforced concrete for protection against chloride exposure is not considered warranted.

Nitrates present in soil can be corrosive to copper tubing at concentrations greater than 50 mg/kg. The tested samples possess nitrate concentrations of up to 152.3 mg/kg. **Based on the test results, the on-site soils are considered to be corrosive to copper pipe.**

**It should be noted that SCG does not practice in the field of corrosion engineering. Therefore, the client may wish to contact a corrosion engineer to provide a more thorough evaluation.**

## Shrinkage/Subsidence

Removal and recompaction of the artificial fill and near-surface native soils is estimated to result in an average shrinkage of 4 to 12 percent. Shrinkage/bulking estimates for the individual samples ranged between 4 percent bulking to 12 percent shrinkage based on the results of density testing and the assumption that the on-site soils will be compacted to about 92 percent of the ASTM D-1557 maximum dry density. It should be noted that the shrinkage estimate is based on the results of dry density testing performed on small-diameter samples of the existing soils taken at the boring locations. If a more accurate and precise shrinkage estimate is desired, SCG can perform a shrinkage study involving several excavated test pits where in-place densities are evaluated using in-situ testing methods instead of laboratory density testing on small-diameter samples. Please contact SCG for details and a cost estimate regarding a shrinkage study, if desired.

Minor ground subsidence is expected to occur in the soils below the zone of removal, due to settlement and machinery working. The subsidence is estimated to be 0.1 feet.

These estimates are based on previous experience and the subsurface conditions encountered at the boring locations. The actual amount of subsidence is expected to be variable and will be

dependent on the type of machinery used, repetitions of use, and dynamic effects, all of which are difficult to assess precisely.

#### Future Plan Reviews and Supplemental Investigations

Grading and foundation plans were not available at the time of this report. It is therefore recommended that we be provided with copies of the preliminary grading and foundation plans, when they become available, for review with regard to the conclusions, recommendations, and assumptions contained within this report. As previously mentioned, Phase 2 development has not been specified at the time of this report. It is recommended that additional exploration be performed at Phase 2 of the site, once the proposed development has been specified.

### **6.3 Site Grading Recommendations**

The grading recommendations presented below are based on the subsurface conditions encountered at the boring locations and our understanding of the proposed development. We recommend that grading activities be completed in accordance with the Grading Guide Specifications included as Appendix D of this report, unless superseded by site-specific recommendations presented below.

#### Site Stripping and Demolition

Initial site stripping should include removal of surficial vegetation. This should include weeds, grasses, trees and shrubs. The actual extent of site stripping should be evaluated in the field by the geotechnical engineer, based on the organic content and stability of the materials encountered.

Demolition of the existing structures and pavements will be required at this site. Demolition should include subsurface remnants of the existing structures, including foundations, floor slabs, septic systems and utilities that will not be reutilized with the proposed development. Debris resultant from demolition should be disposed of off-site in accordance with local regulations. Alternatively, asphalt and concrete debris may be crushed to a maximum 2-inch particle size, well mixed with on-site sandy soils, and incorporated into new structural fills or crushed to make miscellaneous base, if desired. Excavations associated with demolition should be backfilled with compacted fill soils.

#### Treatment of Existing Soils: Building Pads

Remedial grading should be performed within the proposed building areas to remove the near-surface alluvium in order to reduce the potential for hydroconsolidation settlement. The proposed building areas are recommended to be overexcavated to a depth of at least 6 feet below existing grade and to a depth of at least 5 feet below proposed building pad subgrade elevation, whichever is greater.

Where not encompassed within the general building pad overexcavations, additional overexcavation should be performed within the influence zones of the new foundations, to provide for a new layer of compacted structural fill extending to a depth of at least 3 feet below proposed

bearing grades. Based on the greater foundation loads anticipated for the proposed distribution building (Building No. 1) additional overexcavation should be performed within the influence zones of new foundations to a depth equal to at least 1 times the footing width (and to a minimum of 3 feet) below the foundation bearing grade.

The overexcavation areas should extend at least 5 feet beyond the building perimeters and foundations, and to an extent equal to the depth of fill below the new foundations. If the proposed structures incorporate exterior columns (such as for a canopy or overhang) the overexcavation should also encompass these areas.

Following completion of the overexcavation, the subgrade soils within the building areas should be evaluated by the geotechnical engineer to confirm their suitability to serve as the structural fill subgrade, as well as to support the foundation loads of the new structure. This evaluation should include proofrolling and probing to identify soft, loose or otherwise unstable soils that must be removed. Some localized areas of deeper excavation may be required if fill materials are encountered, or loose, porous, or low-density native soils are encountered at the base of the overexcavation.

After a suitable overexcavation subgrade has been achieved, the exposed soils should be scarified to a depth of at least 12 inches, moisture treated to 2 to 4 percent above the optimum moisture content. The subgrade soils should then be recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. The previously excavated soils may then be replaced as compacted structural fill.

#### Treatment of Existing Soils: Proposed Pump Island Canopy Area

Based on previous experience with similar structures, it is expected that the foundations for the pump island canopy will extend to depths of 5 to 7± feet, within the existing native alluvial soils. The native alluvium within the proposed canopy area possess relatively high strengths, and are considered suitable to support the foundation loads of the new canopy. Since the pump island canopy footings are typically subjected to relatively low axial loads, overexcavation in these foundation areas is not considered warranted. Therefore, once the excavations have been made to reach the nominal foundation bearing grade, the exposed subgrade soils should be evaluated by the geotechnical engineer. Assuming that these excavations are founded in competent native soils or suitable existing fill soils, no additional overexcavation will be required. **However, the foundation subgrade soils within the canopy footing areas should be verified to consist of native alluvium possessing a relative compaction equal to at least 85 percent of the ASTM D-1557 maximum dry density or fill soils possessing a relative compaction equal to at least 90 percent of the ASTM D-1557 maximum dry density.** Following completion of the excavation, the exposed soils should be moisture conditioned to raise the moisture content of the underlying soils to 2 to 4 percent above optimum moisture content to a depth of at least 12 inches below bearing grade. Further details regarding foundation design and construction for the canopy area are presented in Section 6.5 of this report.

It is recommended that a copy of the foundation plan for the pump island canopy be provided to our office for review. Based on the results of our review, additional or modified recommendations for remedial grading in these areas may be warranted.

### Treatment of Existing Soils: Retaining Walls and Site Walls

The existing soils within the areas of proposed retaining and non-retaining site walls should be overexcavated to a depth of at least 3 feet below foundation bearing grade and replaced as compacted structural fill as discussed above for the proposed building pad. The overexcavation areas should extend at least 3 feet beyond the foundation perimeters, and to an extent equal to the depth of fill below the new foundations. Please note that erection pads are considered to be part of the foundation system. These overexcavation recommendations apply to erection pads also. The overexcavation subgrade soils should be evaluated by the geotechnical engineer prior to scarifying, moisture conditioning, and recompacting the upper 12 inches of exposed subgrade soils, as discussed for the building areas. The previously excavated soils may then be replaced as compacted structural fill.

Please note that if the lateral and/or vertical extents of overexcavation are not achievable for the project retaining walls or site walls, then additional recommendations including, but not limited to, reduced design bearing pressures may be required. Additionally, specialized grading techniques such as slot cutting or shoring may be required in order to facilitate construction.

### Treatment of Existing Soils: Parking and Drive Areas

Based on economic considerations, overexcavation of the existing soils in the new parking areas is not considered warranted, with the exception of areas where lower strength or unstable soils are identified by the geotechnical engineer during grading.

Subgrade preparation in the new parking areas should initially consist of removal of soils disturbed during stripping operations. The geotechnical engineer should then evaluate the subgrade to identify areas of additional unsuitable soils. The subgrade soils should then be scarified to a depth of 12± inches, moisture conditioned to 2 to 4 percent above optimum, and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. Based on the presence of undocumented fill soils and compressible/collapsible alluvial soils throughout the site, it is expected that some isolated areas of additional overexcavation may be required to remove zones of lower strength, unsuitable soils.

The grading recommendations presented above for the proposed parking and drive areas assume that the owner and/or developer can tolerate minor amounts of settlement within the proposed parking areas. The grading recommendations presented above do not completely mitigate the extent of loose or collapsible alluvium in the parking areas. As such, settlement and associated pavement distress could occur. Typically, repair of such distressed areas involves significantly lower costs than completely mitigating these soils at the time of construction. If the owner cannot tolerate the risk of such settlements, the parking and drive areas should be overexcavated to a depth of 2 feet below proposed pavement subgrade elevation, with the resulting soils replaced as compacted structural fill.

### Fill Placement

- Fill soils should be placed in thin (6± inches), near-horizontal lifts, moisture conditioned to 2 to 4 percent above the optimum moisture content, and compacted.

- On-site soils may be used for fill provided they are cleaned of debris to the satisfaction of the geotechnical engineer.
- Grading and fill placement activities should be completed in accordance with the requirements of the 2022 CBC and the grading code of the City of Perris.
- Fill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Fill soils should be well mixed.
- Compaction tests should be performed periodically by the geotechnical engineer as random verification of compaction and moisture content. These tests are intended to aid the contractor. Since the tests are taken at discrete locations and depths, they may not be indicative of the entire fill and therefore should not relieve the contractor of his responsibility to meet the job specifications.

#### Imported Structural Fill

Imported structural fill should consist of very low expansive ( $EI < 20$ ), well graded soils possessing at least 10 percent fines (that portion of the sample passing the No. 200 sieve). Additional specifications for structural fill are presented in the Grading Guide Specifications, included as Appendix D.

#### Utility Trench Backfill

In general, utility trench backfill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. As an alternative, a clean sand (minimum Sand Equivalent of 30) may be placed within trenches and compacted in place (jetting or flooding is not recommended). It is recommended that materials in excess of 3 inches in size not be used for utility trench backfill. Compacted trench backfill should conform to the requirements of the local grading code, and more restrictive requirements may be indicated by the City of Perris. Utility trench backfills should be witnessed by the geotechnical engineer. The trench backfill soils should be compaction tested where possible; probed and visually evaluated elsewhere.

Utility trenches which parallel a footing, and extending below a 1h:1v plane projected from the outside edge of the footing should be backfilled with structural fill soils, compacted to at least 90 percent of the ASTM D-1557 standard. Pea gravel backfill should not be used for these trenches.

### **6.4 Construction Considerations**

#### Excavation Considerations

The near surface soils generally consist of silty sands and sandy silts. These materials will likely be subject to caving within shallow excavations. Where caving occurs within shallow excavations, flattened excavation slopes may be sufficient to provide excavation stability. On a preliminary basis, the inclination of temporary slopes should not exceed 2h:1v. Deeper excavations may require some form of external stabilization such as shoring or bracing. Maintaining adequate moisture content within the near-surface soils will improve excavation stability. Excavation activities on this site should be conducted in accordance with Cal-OSHA regulations.

### Moisture Sensitive Subgrade Soils

Some of the near surface soils possess appreciable silt and clay content and may become unstable if exposed to significant moisture infiltration or disturbance by construction traffic. In addition, based on their granular content, some of the on-site soils will also be susceptible to erosion. The site should, therefore, be graded to prevent ponding of surface water and to prevent water from running into excavations.

If the construction schedule dictates that site grading will occur during a period of wet weather, allowances should be made for costs and delays associated with drying the on-site soils or import of a drier, less moisture sensitive fill material. Grading during wet or cool weather may also increase the depth of overexcavation in the pad area as well as the need for mechanical stabilization. If subgrade stability problems develop, the geotechnical engineer should be contacted to provide stabilization recommendations.

### Groundwater

The static groundwater table is considered to exist at a depth greater than 50± feet or more below existing grade. Therefore, groundwater is not expected to impact the grading or foundation construction activities.

## **6.5 Foundation Design and Construction**

Based on the preceding grading recommendations, it is assumed that the new building pads will be underlain by structural fill soils used to replace near-surface alluvial soils. These new structural fill soils are expected to extend to depths of at least 3 feet below proposed foundation bearing grade, underlain by 1± foot of additional soil that has been densified and moisture conditioned in place. Based on this subsurface profile, the proposed structures may be supported on shallow foundations.

### Foundation Design Parameters

New continuous and rectangular footings may be designed as follows:

- Maximum, net allowable soil bearing pressure: 2,500 lbs/ft<sup>2</sup>.
- Minimum wall/column footing width: 14 inches/24 inches.
- Minimum longitudinal steel reinforcement within strip footings: Four (4) No. 5 rebars (2 top and 2 bottom).
- Minimum foundation embedment: 12 inches into suitable structural fill soils, and at least 18 inches below adjacent exterior grade. Interior column footings may be placed immediately beneath the floor slab.



- It is recommended that the perimeter building foundations be continuous across exterior doorways. Flatwork adjacent to the exterior doors should be doweled into the perimeter foundations in a manner determined by the structural engineer.

The allowable bearing pressures presented above may be increased by 1/3 when considering short duration wind or seismic loads. The minimum steel reinforcement recommended above is based on standard geotechnical practice. Additional rigidity may be necessary for structural considerations. The actual design of the foundations should be provided by the structural engineer.

#### Pump Island Canopy Foundation Design Parameters

Based on the grading recommendations presented in Section 6.3 of this report, it is assumed that the canopy foundations will be underlain by very dense/hard older alluvial soils. The foundations to support the new pump island canopy may be designed for a maximum, net allowable soil bearing pressure of 2,000 lbs/ft<sup>2</sup>. This bearing pressure may be increased by one-third when considering short duration wind or seismic loads. **The pump island canopy foundations should be embedded at least 5 feet below adjacent grade.** Prior to constructing the new foundations, the alluvial soils should be confirmed to possess a density equal to at least 85 percent of the ASTM D-1557 maximum dry density. Any existing fill soils should possess a relative compaction equal to at least 90 percent of the ASTM D-1557 maximum dry density. If a lesser depth of embedment is utilized, remedial grading will be necessary in the area of the pump island canopy foundations.

#### Foundation Construction

The foundation subgrade soils should be evaluated at the time of overexcavation, as discussed in Section 6.3 of this report. It is further recommended that the foundation subgrade soils be evaluated by the geotechnical engineer immediately prior to steel or concrete placement. Soils suitable for direct foundation support should consist of newly placed structural fill, compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Unsuitable materials should be removed to a depth of suitable bearing compacted structural fill, with the resulting excavations backfilled with compacted fill soils. As an alternative, lean concrete slurry (500 to 1,500 psi) may be used to backfill such isolated overexcavations.

The foundation subgrade soils should also be properly moisture conditioned to 2 to 4 percent above the Modified Proctor optimum, to a depth of at least 12 inches below bearing grade. Since it is typically not feasible to increase the moisture content of the floor slab and foundation subgrade soils once rough grading has been completed, care should be taken to maintain the moisture content of the building pad subgrade soils throughout the construction process.

#### Estimated Foundation Settlements

Post-construction total and differential static settlements of shallow foundations designed and constructed in accordance with the previously presented recommendations are estimated to be less than 1.0 and 0.5 inches, respectively, under static conditions. Differential movements are expected to occur over a 30-foot span, thereby resulting in an angular distortion of less than 0.002 inches per inch.

### Lateral Load Resistance

Lateral load resistance will be developed by a combination of friction acting at the base of foundations and slabs and the passive earth pressure developed by footings below grade. The following friction and passive pressure may be used to resist lateral forces:

- Passive Earth Pressure: 275 lbs/ft<sup>3</sup>
- Friction Coefficient: 0.28

These are allowable values, and include a factor of safety. When combining friction and passive resistance, the passive pressure component should be reduced by one-third. These values assume that footings will be poured directly against compacted structural fill. The maximum allowable passive pressure is 2,750 lbs/ft<sup>2</sup>.

### **6.6 Floor Slab Design and Construction**

Subgrades which will support new floor slabs should be prepared in accordance with the recommendations contained in the ***Site Grading Recommendations*** section of this report. Based on the anticipated grading which will occur at this site, the floors of the new structures may be constructed as conventional slabs-on-grade supported on newly placed structural fill, extending to a depth of at least 5 feet below proposed finished pad grade. Based on geotechnical considerations, the floor slabs may be designed as follows:

- Minimum slab thickness: 6 inches.
- Modulus of Subgrade Reaction:  $k = 120$  psi/in.
- Minimum slab reinforcement: No. 3 bars at 18-inches on-center, in both directions, due to presence of potentially expansive soils at this site. The actual floor slab reinforcement should be determined by the structural engineer, based upon the imposed loading, and the potential liquefaction-induced settlements.
- Slab underlayment: If moisture sensitive floor coverings will be used then minimum slab underlayment should consist of a moisture vapor barrier constructed below the entire area of the proposed slab where such moisture sensitive floor coverings are expected. The moisture vapor barrier should meet or exceed the Class A rating as defined by ASTM E 1745-97 and have a permeance rating less than 0.01 perms as described in ASTM E 96-95 and ASTM E 154-88. A polyolefin material such as Stego® Wrap Vapor Barrier or equivalent will meet these specifications. The moisture vapor barrier should be properly constructed in accordance with applicable manufacturer specifications. Given that a rock free subgrade is anticipated and that a capillary break is not required, sand below the barrier is not required. The need for sand and/or the amount of sand above the moisture vapor barrier should be specified by the structural engineer or concrete contractor. The selection of sand above the barrier is not a geotechnical engineering issue and hence outside our purview. Where moisture sensitive floor coverings are not anticipated and moisture transmission through the slab is acceptable, the vapor barrier may be eliminated.



- Moisture condition the floor slab subgrade soils to 2 to 4 percent above the Modified Proctor optimum moisture content, to a depth of 12 inches. The moisture content of the floor slab subgrade soils should be verified by the geotechnical engineer within 24 hours prior to concrete placement.
- Proper concrete curing techniques should be utilized to reduce the potential for slab curling or the formation of excessive shrinkage cracks.

The actual design of the floor slab should be completed by the structural engineer to verify adequate thickness and reinforcement. Additional rigidity may be necessary for structural considerations.

## **6.7 Retaining Wall Design and Construction**

Although not indicated on the site plan, the proposed development may require some small retaining walls (less than 5± feet in height) to facilitate the new site grades and in the dock-high areas of the buildings.

### **Retaining Wall Design Parameters**

Based on the soil conditions encountered at the boring locations, the following parameters may be used in the design of new retaining walls for this site. We have provided parameters assuming the use of on-site soils for retaining wall backfill. The near surface soils generally consist of silty sands and sandy silts. Based on their classifications, these materials are expected to possess a friction angle of at least 29 degrees when compacted to at least 90 percent of the ASTM-1557 maximum dry density.

If desired, SCG could provide design parameters for an alternative select backfill material behind the retaining walls. The use of select backfill material could result in lower lateral earth pressures. In order to use the design parameters for the imported select fill, this material must be placed within the entire active failure wedge. This wedge is defined as extending from the heel of the retaining wall upwards at an angle of approximately 60° from horizontal. If select backfill material behind the retaining wall is desired, SCG should be contacted for supplementary recommendations.

## RETAINING WALL DESIGN PARAMETERS

<b>Design Parameter</b>		<b>Soil Type</b>
		On-Site Silty Sands and Sandy Silts
Internal Friction Angle ( $\phi$ )		29°
Unit Weight		135 lbs/ft <sup>3</sup>
Equivalent Fluid Pressure:	Active Condition (level backfill)	47 lbs/ft <sup>3</sup>
	Active Condition (2h:1v backfill)	78 lbs/ft <sup>3</sup>
	At-Rest Condition (level backfill)	70 lbs/ft <sup>3</sup>

Regardless of the backfill type, the walls should be designed using a soil-footing coefficient of friction of 0.28 and an equivalent passive pressure of 275 lbs/ft<sup>3</sup>. The structural engineer should incorporate appropriate factors of safety in the design of the retaining walls.

The active earth pressure may be used for the design of retaining walls that do not directly support structures or support soils that in turn support structures and which will be allowed to deflect. The at-rest earth pressure should be used for walls that will not be allowed to deflect such as those which will support foundation bearing soils, or which will support foundation loads directly.

Where the soils on the toe side of the retaining wall are not covered by a "hard" surface such as a structure or pavement, the upper 1 foot of soil should be neglected when calculating passive resistance due to the potential for the material to become disturbed or degraded during the life of the structure.

### Seismic Lateral Earth Pressures

In accordance with the 2022 CBC, retaining walls more than 6 feet in height must be designed for seismic lateral earth pressures. If walls 6 feet or more are required for this site, the geotechnical engineer should be contacted for supplementary seismic lateral earth pressure recommendations.

### Retaining Wall Foundation Design

The retaining wall foundations should be supported within newly placed compacted structural fill, extending to a depth of at least 3 feet below the proposed bearing grade. Foundations to support new retaining walls should be designed in accordance with the general Foundation Design Parameters presented in a previous section of this report.

### Backfill Material

On-site soils may be used to backfill the retaining walls. However, backfill material placed within 3 feet of the back wall face should have a particle size no greater than 3 inches. The retaining wall backfill materials should be well graded.

It is recommended that a properly installed prefabricated drainage composite such as the MiraDRAIN 6000XL (or approved equivalent), which is specifically designed for use behind retaining walls be used. If the drainage composite material is not covered by an impermeable surface, such as a structure or pavement, a 12-inch thick layer of a low permeability soil should be placed over the backfill to reduce surface water migration to the underlying soils. The drainage composite should be separated from the backfill soils by a suitable geotextile, approved by the geotechnical engineer.

Retaining wall backfill should be placed and compacted under engineering observed conditions in the necessary layer thicknesses to achieve an in-place density between 90 and 93 percent of the maximum dry density as evaluated by the Modified Proctor test (ASTM D1557). Care should be taken to avoid over-compaction of the soils behind the retaining walls, and the use of heavy compaction equipment should be avoided.

### Subsurface Drainage

As previously indicated, the retaining wall design parameters are based upon drained backfill conditions. Consequently, some form of permanent drainage system will be necessary in conjunction with the appropriate backfill material. Subsurface drainage may consist of either:

- A weep hole drainage system typically consisting of a series of 2-inch diameter holes in the wall situated slightly above the ground surface elevation on the exposed side of the wall and at an approximate 10-foot on-center spacing. Alternatively, 4-inch diameter holes at an approximate 20-foot on-center spacing can be used for this type of drainage system. In addition, the weep holes should include a 2 cubic foot pocket of open graded gravel, surrounded by an approved geotextile fabric, at each weep hole location.
- A 4-inch diameter perforated pipe surrounded by 2 cubic feet of gravel per linear foot of drain placed behind the wall, above the retaining wall footing. The gravel layer should be wrapped in a suitable geotextile fabric to reduce the potential for migration of fines. The footing drain should be extended to daylight or tied into a storm drainage system. The actual design of this type of system should be evaluated by the civil engineer to verify that the drainage system possesses the adequate capacity and slope for its intended use.

## **6.8 Pavement Design Parameters**

Site preparation in the pavement area should be completed as previously recommended in the ***Site Grading Recommendations*** section of this report. The subsequent pavement recommendations assume proper drainage and construction monitoring, and are based on either PCA or CALTRANS design parameters for a twenty (20) year design period. However, these

designs also assume a routine pavement maintenance program to obtain the anticipated 20-year pavement service life.

### Pavement Subgrades

It is anticipated that the new pavements will be primarily supported on a layer of compacted structural fill, consisting of scarified, thoroughly moisture conditioned and recompacted existing soils. The near-surface soils generally consist of silty sands, sandy silts, as well as clayey sands and occasional sandy clays and clayey silts. These soils are considered to possess fair to good pavement support characteristics with estimated R-values of 20 to 40. The subsequent pavement design is based upon an R-value of 25. Fill material imported to the site should have support characteristics equal to or greater than that of the on-site soils and be placed and compacted under engineering observed conditions. It is recommended that R-value testing be performed after completion of rough grading. Depending upon the results of the R-value testing, it may be feasible to use thinner pavement sections in some areas of the site.

### Asphaltic Concrete

Presented below are the recommended thicknesses for new flexible pavement structures consisting of asphaltic concrete over a granular base. The pavement designs are based on the traffic indices (TI's) indicated. The client and/or civil engineer should verify that these TI's are representative of the anticipated traffic volumes. If the client and/or civil engineer determine that the expected traffic volume will exceed the applicable traffic index, we should be contacted for supplementary recommendations. The design traffic indices equate to the following approximate daily traffic volumes over a 20 year design life, assuming six operational traffic days per week.

<b>Traffic Index</b>	<b>No. of Heavy Trucks per Day</b>
4.0	0
5.0	1
6.0	3
7.0	11
8.0	35
9.0	93

For the purpose of the traffic volumes indicated above, a truck is defined as a 5-axle tractor trailer unit with one 8-kip axle and two 32-kip tandem axles. The traffic indices above allow for 1,000 automobiles per day.

<b>ASPHALT PAVEMENTS (R = 25)</b>					
<b>Materials</b>	<b>Thickness (inches)</b>				
	Auto Parking and Auto Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic			
		TI = 6.0	TI = 7.0	TI = 8.0	TI = 9.0
Asphalt Concrete	3	3½	4	5	5½
Aggregate Base	7	9	11	12	14
Compacted Subgrade	12	12	12	12	12

The aggregate base course should be compacted to at least 95 percent of the ASTM D-1557 maximum dry density. The asphaltic concrete should be compacted to at least 95 percent of the Marshall maximum density, as evaluated by ASTM D-2726. The aggregate base course may consist of crushed aggregate base (CAB) or crushed miscellaneous base (CMB), which is a recycled gravel, asphalt and concrete material. The gradation, R-Value, Sand Equivalent, and Percentage Wear of the CAB or CMB should comply with appropriate specifications contained in the current edition of the "Greenbook" Standard Specifications for Public Works Construction.

#### Portland Cement Concrete

The preparation of the subgrade soils within concrete pavement areas should be performed as previously described for proposed asphalt pavement areas. The minimum recommended thicknesses for the Portland Cement Concrete pavement sections are as follows:

<b>PORTLAND CEMENT CONCRETE PAVEMENTS (R = 25)</b>				
<b>Materials</b>	<b>Thickness (inches)</b>			
	Autos and Light Truck Traffic (TI = 6.0)	Truck Traffic		
		TI = 7.0	TI = 8.0	TI = 9.0
PCC	5	5½	6½	8
Compacted Subgrade (95% minimum compaction)	12	12	12	12

The concrete should have a 28-day compressive strength of at least 3,000 psi. Reinforcement within the PCC pavements should be evaluated by the project structural engineer. The maximum joint spacing within PCC pavements is recommended to be equal to or less than 30 times the pavement thickness.

## 7.0 GENERAL COMMENTS

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This report has been prepared as an instrument of service for use by the client, in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, civil engineer, and/or structural engineer. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur. The client(s)' reliance upon this report is subject to the Engineering Services Agreement, incorporated into our proposal for this project.

The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between boring locations and sample depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to evaluate if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted.

The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

# APPENDIX A




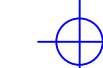
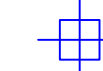






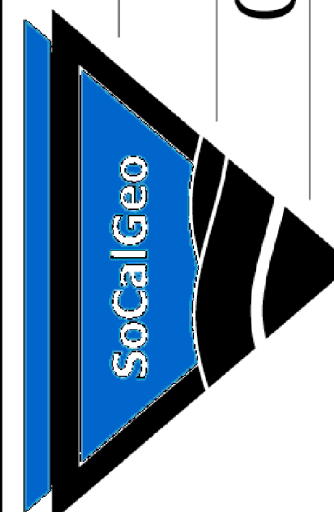




#### GEOTECHNICAL LEGEND

-  NEW BORING LOCATION
-  PREVIOUS INFILTRATION TEST LOCATION (SCG PROJECT NO. 22G183-4)
-  PREVIOUS BORING LOCATION (SCG PROJECT NO. 22G183-3)
-  PREVIOUS DRY WELL TEST LOCATION (SCG PROJECT NO. 22G183-2)
-  PREVIOUS INFILTRATION TEST LOCATION (SCG PROJECT NO. 22G183-2)
-  PREVIOUS BORING LOCATION (SCG PROJECT NO. 22G183-2)
-  PREVIOUS BORING LOCATION (SCG PROJECT NO. 22G183-1)






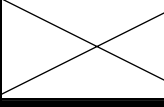


NOTE: CONCEPTUAL MASTER PLAN PREPARED BY AO ARCHITECTS.





# APPENDIX B

# BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

## COLUMN DESCRIPTIONS

### DEPTH:

Distance in feet below the ground surface.

### SAMPLE:

Sample Type as depicted above.

### BLOW COUNT:

Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

### POCKET PEN.:

Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

### GRAPHIC LOG:

Graphic Soil Symbol as depicted on the following page.

### DRY DENSITY:

Dry density of an undisturbed or relatively undisturbed sample in lbs/ft<sup>3</sup>.

### MOISTURE CONTENT:

Moisture content of a soil sample, expressed as a percentage of the dry weight.

### LIQUID LIMIT:

The moisture content above which a soil behaves as a liquid.

### PLASTIC LIMIT:

The moisture content above which a soil behaves as a plastic.

### PASSING #200 SIEVE:

The percentage of the sample finer than the #200 standard sieve.

### UNCONFINED SHEAR:

The shear strength of a cohesive soil sample, as measured in the unconfined state.

# SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS  MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS  MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS  (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES  (APPRECIABLE AMOUNT OF 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 PASSING ON NO. 4 SIEVE	CLEAN SANDS  (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES  (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS  MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS  LIQUID LIMIT LESS THAN 50			ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY 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 SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS  LIQUID LIMIT GREATER THAN 50			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS	

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS



JOB NO.: 22G183-3				DRILLING DATE: 8/9/23				WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: 7 feet				
LOCATION: Perris, California				LOGGED BY: Joey Hernandez				READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5	X	22			<u>ALLUVIUM</u> : Brown fine Sandy Silt, trace medium Sand, medium dense-dry		2					
	X	24			<u>OLDER ALLUVIUM</u> : Light Brown to Brown Silty fine to medium Sand, medium dense to very dense-dry to damp		2					
	X	50/5"					4					
	X	50/5"			@ 8½ to 10 feet, little Clay, damp to moist		7					
10					Boring Terminated at 10'							

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23



JOB NO.: 22G183-3	DRILLING DATE: 8/9/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 8 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS				DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
				SURFACE ELEVATION: 1456.5 feet MSL							
5		40				4					
		58				5					
		50/4"				8					
		46				8					
10											
				Boring Terminated at 10'							

OLDER ALLUVIUM: Gray Brown Clayey fine to medium Sand, trace Calcareous nodules, dense-damp

Brown Silty fine Sand, trace Clay, trace medium to coarse Sand, weakly cemented, dense to very dense-damp to moist

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23








JOB NO.: 22G183-3	DRILLING DATE: 8/9/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 7 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS					LABORATORY RESULTS							COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1460.5 feet MSL							
5		24			<u>OLDER ALLUVIUM:</u> Gray Brown Silty fine to medium Sand, medium dense to dense-dry		2					
		37					2					
		49			Gray Brown Silty fine Sand, trace medium Sand, weakly cemented, dense to very dense-damp to moist		4					
		57					7					
10					Boring Terminated at 10'							

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23





JOB NO.: 22G183-3				DRILLING DATE: 8/10/23				WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: 8 feet				
LOCATION: Perris, California				LOGGED BY: Joey Hernandez				READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5		20			SURFACE ELEVATION: 1456.2 feet MSL  <u>ALLUVIUM</u> : Brown Silty fine Sand, trace medium to coarse Sand, medium dense-dry		2					
		28					2					
		73			<u>OLDER ALLUVIUM</u> : Brown Silty fine Sand, trace Clay, trace medium Sand, weakly cemented, very dense-damp		6					
		88/5"					5					
10					Boring Terminated at 10'							

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23



JOB NO.: 22G183-3				DRILLING DATE: 8/10/23				WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: 8 feet				
LOCATION: Perris, California				LOGGED BY: Joey Hernandez				READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1452.3 feet MSL							
5		9			ALLUVIUM: Brown Silty fine Sand, trace medium Sand, loose-damp		4					
		56			OLDER ALLUVIUM: Brown Clayey fine to medium Sand, trace coarse Sand, weakly cemented, dense-damp		4					
		82/10"			Brown Silty fine Sand, trace Clay, trace medium Sand, weakly cemented, very dense-damp to moist		6					
		50/5"					8					
10					Boring Terminated at 10'							

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23



JOB NO.: 22G183-3	DRILLING DATE: 8/10/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 7 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS					LABORATORY RESULTS							COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1452.2 feet MSL							
5		53			<u>OLDER ALLUVIUM:</u> Brown Silty fine to medium Sand, trace Clay, weakly to moderately cemented, dense to very dense-damp		3					
		40					3					
		45					6					
		50/5"					5					
10					Boring Terminated at 10'							

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23









JOB NO.: 22G183-3				DRILLING DATE: 8/9/23				WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: 9 feet				
LOCATION: Perris, California				LOGGED BY: Joey Hernandez				READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5  <												

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23













JOB NO.: 22G183-3	DRILLING DATE: 8/9/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 9 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1448.2 feet MSL							
5		9			<u>ALLUVIUM</u> : Brown Silty fine Sand, loose to medium dense-damp							
		27										
		28			<u>OLDER ALLUVIUM</u> : Light Gray Brown Silty fine to medium Sand, medium dense-damp							
		62	3.5		Brown Clayey fine Sand to fine Sandy Clay, very dense/hard-dry							
10					Boring Terminated at 10'							

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23


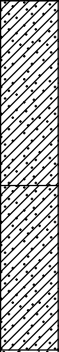










JOB NO.: 22G183-3		DRILLING DATE: 8/10/23		WATER DEPTH: Dry								
PROJECT: Harvest Landing Industrial Development		DRILLING METHOD: Hollow Stem Auger		CAVE DEPTH: 22 feet								
LOCATION: Perris, California		LOGGED BY: Joey Hernandez		READING TAKEN: At Completion								
FIELD RESULTS				DESCRIPTION	LABORATORY RESULTS						COMMENTS	
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)		GRAPHIC LOG	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)		ORGANIC CONTENT (%)
SURFACE ELEVATION: 1457.9 feet MSL												
5		89			OLDER ALLUVIUM: Brown Silty fine to medium Sand, very dense-dry to damp	124	3					
		47			@ 3 to 4 feet, trace to little coarse Sand, dense	121	1					
		85	4.5		Gray Brown Clayey fine Sand to fine Sandy Clay, dense to very dense/hard-damp	122	4					
		52	4.5			121	3					
		50/5"			Brown Silty fine Sand, trace Clay, trace medium Sand, weakly cemented, dense to very dense-damp to moist	117	4					
15		30			@ 13½ to 15 feet, little Clay		8					
		43			Brown Silty fine to medium Sand, weakly to moderately cemented, dense-damp		7					
		30					6					
25					Boring Terminated at 25'							

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23



JOB NO.: 22G183-3	DRILLING DATE: 8/9/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 17 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: 1453.8 feet MSL												
5		63	4.5		OLDER ALLUVIUM: Brown Clayey fine Sand to fine Sandy Clay, weakly cemented, very dense/hard-damp		3					
		53	4.0				4					
		85/10"	4.5				9					
	10		49		Brown fine Sandy Clay, trace to little Calcareous nodules, hard-damp to moist							
												
		26		Brown Silty fine Sand, trace medium Sand, weakly cemented, medium dense to dense-moist		9						
15												
		37			Dark Brown Silty fine Sand, little Clay, some Calcareous nodules, weakly cemented, dense-moist		8					
20												
Boring Terminated at 20'												

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23





JOB NO.: 22G183-3	DRILLING DATE: 8/9/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 18 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: 1452.7 feet MSL												
5		33			OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace Clay, trace Calcareous nodules, dense-damp		4					EI = 10 @ 1 to 5 feet
		63	4.5		Brown Silty Clay, little fine Sand, weakly cemented, hard-moist		11					
		87/10"	2.5		Brown Clayey Silt, little fine Sand, very stiff to hard-damp		7					
		50			Brown fine Sandy Silt, trace medium Sand, very dense-damp		6					
		35			Dark Brown fine to medium Sandy Silt, trace Clay, dense-damp to moist		7					
15												
20		50			@ 18½ feet, very dense		9					
					Boring Terminated at 20'							

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23



JOB NO.: 22G183-3			DRILLING DATE: 8/8/23			WATER DEPTH: Dry						
PROJECT: Harvest Landing Industrial Development			DRILLING METHOD: Hollow Stem Auger			CAVE DEPTH: 21 feet						
LOCATION: Perris, California			LOGGED BY: Ryan Bremer			READING TAKEN: At Completion						
FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1453.0 feet MSL							
5		33	81/11"		OLDER ALLUVIUM: Gray Brown fine Sandy Silt, little Clay, trace medium Sand, dense-damp to moist		4					
		41			@ 3½ feet, some Clay		9					
					Brown fine Sandy Silt, trace Clay, trace medium Sand, trace Calcareous veining, very dense-moist		10					
		30			@ 8½ feet, dense		11					
15		42	4.5		Brown fine Sandy Clay, some Silt, trace medium Sand, weakly cemented, hard-damp to moist		9					
20		24			Brown fine Sandy Silt, little Clay, trace medium Sand, medium dense-moist		9					
25		50			@ 23½ feet, trace Clay, very dense		8					
					Boring Terminated at 25'							



JOB NO.: 22G183-3	DRILLING DATE: 8/8/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 49.5 feet
LOCATION: Perris, California	LOGGED BY: Ryan Bremer	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: 1451.5 feet MSL												
					OLDER ALLUVIUM: Gray Brown fine to coarse Sand, trace Silt, very dense-dry							
5		50/5"			Red Brown Silty fine to medium Sand, trace coarse Sand, trace to little Clay, weakly cemented, very dense-dry	117	2					
10		85/11"			Brown fine Sandy Silt, trace Clay, trace medium Sand, weakly cemented, very dense-moist	119	8					
15		53			Brown Silty fine to medium Sand, trace Clay, trace coarse Sand, weakly cemented, dense-damp	129	5					
20		64			Brown fine to medium Sandy Silt, trace Clay, trace coarse Sand, moderately cemented, dense-damp	126	6					
25		89			Brown fine Sandy Silt, trace Clay, trace medium Sand, very dense-moist	122	8					
30		50/5"			Light Brown Silty fine Sand, trace medium Sand, trace Calcareous veining, very dense-damp	98	5					
		50/5"	2.5		Light Brown Clayey Silt, little fine Sand, little to some Calcareous veining, hard-very moist	78	34					

TBL 22G183-3.GPJ, SOCALGEO.GDT 9/19/23



JOB NO.: 22G183-3	DRILLING DATE: 8/8/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 49.5 feet
LOCATION: Perris, California	LOGGED BY: Ryan Bremer	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION  (Continued)	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
40		59	4.5		Light Brown Clayey Silt, little fine Sand, little to some Calcareous veining, hard-very moist	77	43					
					Light Gray Brown Silty Clay, trace fine Sand, trace Calcareous nodules, hard-very moist							
45		43	4.5		Light Gray Brown Clayey Silt, little Calcareous veining, very stiff-very moist	91	33					
50		28	4.5		@ 49 feet, trace Calcareous veining	75	41					
Boring Terminated at 50'												

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23














JOB NO.: 22G183-3	DRILLING DATE: 8/8/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 34 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1448.9 feet MSL							
5		30			OLDER ALLUVIUM: Dark Gray Brown Silty Clay, little fine Sand, trace Calcareous nodules, weakly cemented, hard-damp		6					
		30		@ 3½ feet, little fine to medium Sand		6						
		33		Brown fine Sandy Silt, little Clay, dense-damp		7						
		58/10"		Light Brown Silty fine to medium Sand, trace Clay, very dense-moist		8						
	10											
		29	Brown fine Sandy Silt, trace Clay, trace medium Sand, medium dense-damp to moist		8							
15			31		Brown Clayey Silt, little fine Sand, trace medium Sand, very stiff to hard-moist		15					
			17		Brown fine to medium Sandy Silt, trace Clay, medium dense to dense-moist to very moist		8					
		25		31				14				
			34		Brown fine Sandy Silt, trace Clay, trace Calcareous nodules, dense-very moist		17					
	Boring Terminated at 35'											

TBL 22G183-3.GPJ, SOCALGEO.GDT 9/19/23



JOB NO.: 22G183-3	DRILLING DATE: 8/8/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 36 feet
LOCATION: Perris, California	LOGGED BY: Ryan Bremer	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: 1448.5 feet MSL												
		42			OLDER ALLUVIUM: Gray Brown fine Sandy Silt, trace Clay, trace medium Sand, weakly cemented, dense-dry	115	2					
		50/5"	1.0		Gray Brown fine Sandy Clay, little Silt, trace medium Sand, weakly cemented, hard-damp	101	3					
5		50/4"	4.5		@ 5 feet, little medium Sand	97	5					
		50/5"			Brown fine Sandy Silt, trace Clay, trace medium Sand, very dense-damp	105	5					
10		50/5"			@ 9 feet, Gray Brown	111	8					
					Brown Silty fine to coarse Sand, trace Clay, dense-damp							
15		38				111	5					
					Brown Clayey fine to medium Sand, little Silt, trace coarse Sand, weakly cemented, dense-damp		8					
20		39										
					Brown fine to medium Sandy Silt, trace Clay, trace coarse Sand, very dense-moist		11					
25		50										
					Brown fine Sandy Silt, dense-very moist		19					
30		41										
					@ 33½ to 40 feet, Light Gray Brown, trace Clay, little Calcareous nodules		30					
		40										

TBL 22G183-3.GPJ, SOCALGEO.GDT 9/19/23



JOB NO.: 22G183-3	DRILLING DATE: 8/8/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 36 feet
LOCATION: Perris, California	LOGGED BY: Ryan Bremer	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					(Continued)							
					Brown fine Sandy Silt, dense-very moist							
					@ 38½ feet, medium dense		47					
40		16										
					Boring Terminated at 40'							

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23





JOB NO.: 22G183-3	DRILLING DATE: 8/10/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 17 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: 1450.5 feet MSL												
5	X	31	50/5"	2.5	OLDER ALLUVIUM: Gray Brown Silty fine to medium Sand, trace Clay, dense-damp		3					
	X	30				3						
	X					6						
	X	31				9						
	X	10										
15	X	32	4.0	Gray Brown fine Sandy Clay, trace medium Sand, trace Calcareous nodules, hard-damp to moist		9						
	X			Gray Brown fine Sandy Silt, little Clay, trace medium Sand, medium dense-damp to moist		8						
20	X	24										
					Boring Terminated at 20'							

TBL 22G183-3.GPJ, SOCALGEO.GDT 9/19/23



JOB NO.: 22G183-3	DRILLING DATE: 8/8/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 11 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: 1449.4 feet MSL												
5   												

TBL 22G183-3.GPJ, SOCALGEO.GDT 9/19/23





JOB NO.: 22G183-3	DRILLING DATE: 8/11/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 18.5 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: 1441.1 feet MSL												
5  <												

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23



JOB NO.: 22G183-3	DRILLING DATE: 8/11/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 27 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: 1442.1 feet MSL												
		49			OLDER ALLUVIUM: Brown Silty fine to medium Sand, weakly cemented, dense-damp to moist		7					
		79/11"			Brown Silty fine Sand, trace Clay, trace medium Sand, very dense-damp to moist		7					
5		28			Brown fine Sandy Silt, trace Calcareous veining, medium dense-moist		12					
		34			@ 8½ feet, trace Clay, dense		13					
					Brown fine to medium Sandy Silt, trace Clay, very dense-moist		9					
		75/11"										
15		16			Light Gray Brown Silt, trace fine Sand, medium dense-very moist		46					
20												
		11	2.5		Light Gray Brown Silty Clay to Clayey Silt, medium stiff to stiff-very moist		52					
25		20	3.5									
30							39					
Boring Terminated at 30'												

TBL 22G183-3.GPJ, SOCALGEO.GDT 9/19/23



JOB NO.: 22G183-3

DRILLING DATE: 8/11/23

WATER DEPTH: Dry

PROJECT: Harvest Landing Industrial Development

DRILLING METHOD: Hollow Stem Auger

CAVE DEPTH: 22 feet

LOCATION: Perris, California

LOGGED BY: Joey Hernandez












READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: 1440.2 feet MSL												
5		66	89/11"		OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace Clay, very dense-damp		6					
					Gray Brown Silty Clay, little fine Sand, hard-damp to moist		9					
					Brown fine to medium Sandy Silt, trace Clay, dense-damp		6					
					Brown Silty fine to medium Sand, dense-damp		5					
					Brown Silty fine Sand, trace medium Sand, very dense-moist		12					
					Light Brown Clayey Silt to Silty Clay, little Calcareous nodules, stiff to very stiff-very moist		28					
20		29	4.0									
25		19	2.5				29					
	Boring Terminated at 30'											

TBL 22G183-3.GPJ SoCALGEO.GDT 9/19/23











JOB NO.: 22G183-3	DRILLING DATE: 8/11/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 17 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: 1440.4 feet MSL												
5		59			OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace Clay, trace fine root fibers, dense-damp		5					
		82/11"			@ 3½ feet, very dense-moist		11					
		36			Brown Silty fine Sand, trace Clay, dense-moist		12					
		32					10					
												
10					Light Gray Brown fine Sandy Silt, trace Clay, dense-very moist							
		36					21					
15												
		22			@ 18½ feet, medium dense		36					
20												
Boring Terminated at 20'												

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23



JOB NO.: 22G183-3	DRILLING DATE: 8/10/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 13 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion




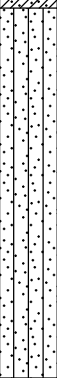





FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: 1441.0 feet MSL												
5		40			OLDER ALLUVIUM: Brown Silty fine to medium Sand, little Clay, weakly cemented, medium dense to very dense-damp to moist	116	4					
		37/11"				112	8					
		50/5"			Brown fine Sandy Silt, trace Clay, trace medium Sand, weakly cemented, very dense-damp	126	7					
		50/5"			Brown Silty fine to medium Sand, trace Clay, weakly cemented, very dense-damp	113	6					
		34/10"			Brown fine Sandy Silt, trace Calcareous veining, very dense-damp to moist	122	8					
10												
15		46			Brown Silt, little fine Sand, dense-very moist		24					
Boring Terminated at 15'												

TBL 22G183-3.GPJ SoCalGeo.GDT 9/19/23





















JOB NO.: 22G183-3	DRILLING DATE: 8/10/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 13 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: 1439.6 feet MSL												
5		32	4.5		OLDER ALLUVIUM: Brown fine Sandy Clay, little Silt, trace medium Sand, trace fine root fibers, weakly cemented, hard-very moist		17					
		52			Brown fine Sandy Silt, little Clay, trace medium Sand, weakly cemented, very dense-damp to moist		7					
		61			@ 6 to 10 feet, trace Clay		12					
		42			@ 8½ feet, dense		14					
10												
15		75/11"	3.5		Brown Clayey Silt, trace fine Sand, little Calcareous veining, hard-very moist		19					
	Boring Terminated at 15'											

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23



JOB NO.: 22G183-3				DRILLING DATE: 8/8/23				WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: 18 feet				
LOCATION: Perris, California				LOGGED BY: Joey Hernandez				READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1439.8 feet MSL							
		51			OLDER ALLUVIUM: Brown Clayey fine Sand, little Silt, moderately cemented, little Calcareous nodules/veining, dense-damp	115	6					El = 33 @ 1 to 5 feet  Disturbed Sample
		40			Brown fine Sandy Silt, little Clay, medium dense-damp to moist		3					
5		38				120	12					
		26			Brown Clayey Silt, little fine Sand, weakly cemented, very stiff-moist	117	12					
10		10			Dark Brown fine to medium Sandy Silt, little Clay, weakly cemented, loose-damp to moist	104	9					
												
		25			Brown fine Sandy Silt, medium dense-moist	119	10					
												
		21			Light Gray Brown fine Sandy Silt, little Iron oxide staining, little Calcareous veining, slightly porous, medium dense-very moist		28					
20					Boring Terminated at 20'							

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23











JOB NO.: 22G183-3	DRILLING DATE: 8/11/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 13 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: 1439.1 feet MSL												
5   												



JOB NO.: 22G183-3	DRILLING DATE: 8/25/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 18 feet
LOCATION: Perris, California	LOGGED BY: Ryan Bremer	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: 1439.2 feet MSL												
5		24			ALLUVIUM: Brown fine to medium Sandy Silt, weakly cemented, medium dense-damp	113	3					
		44	4.0		OLDER ALLUVIUM: Brown fine Sandy Clay, little Silt, trace medium Sand, weakly cemented, very stiff-moist	128	11					
		84/11"	4.0		Brown Silty Clay to Clayey Silt, little fine Sand, little Calcareous veining, very dense/hard-moist	123	12					
		56	4.0			122	13					
		77	3.5		Brown fine to medium Sandy Clay, weakly cemented, hard-damp	144	8					
10												
15		27			Light Gray Brown fine Sandy Silt, extensive Calcareous veining, medium dense-very moist		43					
20		27					19					
Boring Terminated at 20'												

TBL 22G183-3.GPJ SoCALGEO.GDT 9/19/23



JOB NO.: 22G183-3	DRILLING DATE: 8/14/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 12.5 feet
LOCATION: Perris, California	LOGGED BY: Ryan Bremer	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: 1438.7 feet MSL												
5	X	47			OLDER ALLUVIUM: Gray Brown fine Sandy Silt, little Clay, trace medium Sand, weakly cemented, dense to very dense-damp to moist		6					
	X	43					12					
	X	50			@ 6 feet, Brown, trace Clay, little Calcareous veining		12					
	X	40			Brown fine to medium Sandy Silt, dense-moist		13					
	X	68/11"			Brown fine Sandy Silt, little Calcareous veining, weakly cemented, very dense-moist		14					
15					Boring Terminated at 15'							

TBL 22G183-3.GPJ SoCalGEO.GDT 9/19/23



JOB NO.: 22G183-3				DRILLING DATE: 8/14/23				WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: 9 feet				
LOCATION: Perris, California				LOGGED BY: Ryan Bremer				READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1439.2 feet MSL							
5		71			<u>OLDER ALLUVIUM</u> : Brown fine Sandy Silt, trace medium Sand, weakly to moderately cemented, very dense-damp to moist		7					
		71					9					
		83/11"			@ 6 feet, little Clay, little Calcareous veining		7					
		51	4.5		Brown fine Sandy Clay, little Silt, trace medium Sand, little Calcareous veining, hard-damp		6					
10					Boring Terminated at 10'							

TBL 22G183-3.GPJ SoCalGeo.GDT 9/19/23



JOB NO.: 22G183-3	DRILLING DATE: 8/14/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 9 feet
LOCATION: Perris, California	LOGGED BY: Ryan Bremer	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: 1438.5 feet MSL												
5		56	2.5		OLDER ALLUVIUM: Gray Brown fine to medium Sandy Clay, little Silt, trace fine root fibers, weakly cemented, hard-dry to damp		4					
		72			Brown fine Sandy Silt, little Clay, trace medium Sand, weakly cemented, very dense-damp to moist		8					
		41			Brown fine to medium Sandy Silt, trace coarse Sand, weakly cemented, dense-damp		6					
		52			Brown fine Sandy Silt, trace Clay, trace medium Sand, very dense-moist		10					
10					Boring Terminated at 10'							

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23










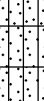







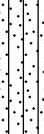






JOB NO.: 22G183-3				DRILLING DATE: 8/11/23				WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: 7 feet				
LOCATION: Perris, California				LOGGED BY: Joey Hernandez				READING TAKEN: At Completion				
FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5		74	3.0		<u>OLDER ALLUVIUM</u> : Gray Brown fine to medium Sandy Clay, weakly cemented, very stiff to hard-damp		7					
		46			Brown fine Sandy Silt, trace Clay, trace Calcareous veining, weakly cemented, dense-moist		12					
		57			@ 6 feet, little Clay, very dense		9					
		42					11					
10					Boring Terminated at 10'							

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23





JOB NO.: 22G183-3	DRILLING DATE: 8/15/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 27 feet
LOCATION: Perris, California	LOGGED BY: Ryan Bremer	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: 1446.8 feet MSL												
		16			ALLUVIUM: Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp	127	5					
		51			OLDER ALLUVIUM: Gray Brown Clayey fine to medium Sand, little Silt, weakly cemented, dense-damp	127	4					
5		50/5"			Brown fine to medium Sandy Silt, little Clay, trace Calcareous veining, weakly cemented, very dense-damp	111	6					
		50/5"			Brown fine Sandy Silt, trace medium Sand, weakly cemented, very dense-damp	95	6					
10		50/5"			Light Brown fine to medium Sandy Silt, weakly cemented, trace Calcareous veining, very dense-damp	118	6					
					Gray Brown to Brown fine Sandy Silt, trace Clay, trace medium Sand, trace Calcareous veining, weakly cemented, medium dense-damp		8					
15		28										
					@ 18½ feet, very dense-moist		11					
20		52										
					Brown Silty fine Sand to fine Sandy Silt, weakly cemented, medium dense-very moist		19					
25		29										
					Light Gray Brown fine Sandy Silt, extensive Calcareous veining, very dense-very moist		21					
30		64										
Boring Terminated at 30'												

TBL 22G183-3.GPJ, SOCALGEO.GDT 9/19/23


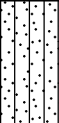

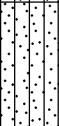



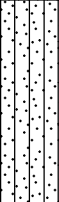




JOB NO.: 22G183-3	DRILLING DATE: 8/14/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 18 feet
LOCATION: Perris, California	LOGGED BY: Ryan Bremer	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: 1443.9 feet MSL												
5		27	4.5		ALLUVIUM: Dark Brown fine Sandy Clay, trace medium Sand, little Calcareous veining, weakly cemented, very stiff-damp to moist		9					
		83/11"	4.5		OLDER ALLUVIUM: Brown fine to medium Sandy Clay, little Silt, trace Calcareous veining, weakly to moderately cemented, hard-damp		5					
		92/11"	4.5		Brown fine Sandy Clay, trace medium Sand, weakly to moderately cemented, hard-damp		5					
		50/5"		Light Brown fine Sandy Silt, trace Clay, trace medium Sand, very dense-damp		5						
	15		29		@ 13½ feet, little medium Sand, medium dense		6					
		46		Brown fine to medium Sandy Silt, trace coarse Sand, weakly cemented, dense-moist		9						
20					Boring Terminated at 20'							

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23


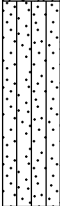
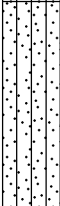
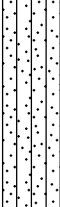






JOB NO.: 22G183-3				DRILLING DATE: 8/15/23				WATER DEPTH: Dry					
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: 18 feet					
LOCATION: Perris, California				LOGGED BY: Ryan Bremer				READING TAKEN: At Completion					
FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS	
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)		
					SURFACE ELEVATION: 1444.1 feet MSL								
5		21	78/11"		ALLUVIUM: Brown fine Sandy Silt, trace medium Sand, trace Calcareous veining, weakly cemented, medium dense-damp		6						
		69			OLDER ALLUVIUM: Light Brown fine Sandy Silt, little Clay, trace medium Sand, trace Calcareous veining, weakly cemented, very dense-damp		6						
		49		4.5			Brown fine to medium Sandy Clay, little Silt, trace Calcareous veining, weakly cemented, hard-damp						6
		39			Gray Brown fine Sandy Silt, trace Clay, trace medium Sand, trace Calcareous veining, weakly cemented, dense-damp to moist		8						
		43		3.0			Gray Brown Clayey Silt, little fine Sand, little Calcareous nodules, hard-very moist						19
20					Boring Terminated at 20'								

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23







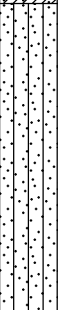


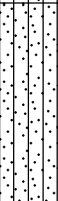




JOB NO.: 22G183-3	DRILLING DATE: 8/15/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 18 feet
LOCATION: Perris, California	LOGGED BY: Ryan Bremer	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS					COMMENTS	
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)		ORGANIC CONTENT (%)
SURFACE ELEVATION: 1443.5 feet MSL												
		28			ALLUVIUM: Gray Brown Clayey fine Sand, some Silt, weakly cemented, medium dense-damp		6					
		80			OLDER ALLUVIUM: Brown fine to medium Sandy Silt, trace to little Clay, weakly cemented, very dense-damp		7					
5		93/11"					6					
		38			Brown fine Sandy Silt, trace medium Sand, weakly cemented, dense-damp		7					
10												
		33					7					
15												
		50/3"			@ 18½ feet, little medium Sand, trace Calcareous veining, very dense-very moist		22					
20												
Boring Terminated at 20'												

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23



JOB NO.: 22G183-3	DRILLING DATE: 8/15/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 22.5 feet
LOCATION: Perris, California	LOGGED BY: Ryan Bremer	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: 1442.5 feet MSL												
		50			OLDER ALLUVIUM: Light Brown fine to medium Sandy Silt, trace Clay, little Calcareous veining, weakly cemented, dense-damp	114	4					
		77	4.5		Dark Brown fine Sandy Clay, little Silt, trace medium Sand, hard-damp	133	7					
5		90/11"			Light Brown fine Sandy Silt, little Clay, weakly cemented, very dense-damp	114	6					
		82/11"				128	6					
10		85				123	7					
					Light Brown fine to medium Sandy Silt, dense-damp		7					
15		38										
						Light Gray Brown Silty Clay, little Calcareous veining, stiff to very stiff-very moist		47				
20		15	1.0									
25		23	1.5			37						
Boring Terminated at 25'												

TBL 22G183-3.GPJ, SOCALGEO.GDT 9/19/23



JOB NO.: 22G183-3				DRILLING DATE: 8/15/23				WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: 9 feet				
LOCATION: Perris, California				LOGGED BY: Ryan Bremer				READING TAKEN: At Completion				
FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5		22	4.5		<u>ALLUVIUM</u> : Dark Gray Silty Clay, little fine to medium Sand, very stiff-damp	119	6					
		36			<u>OLDER ALLUVIUM</u> : Brown fine to medium Sandy Silt, trace Clay, trace medium Sand, trace Calcareous veining, weakly cemented, medium dense-damp	124	5					
		31/11"			Brown fine Sandy Silt, trace medium Sand, weakly cemented, very dense-damp	117	5					
		50/5"			@ 7 feet, Light Brown, trace Clay	115	6					
		74			@ 9 feet, Gray Brown, little medium Sand, trace Calcareous veining	123	5					
10					Boring Terminated at 10'							

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23



JOB NO.: 22G183-3	DRILLING DATE: 8/14/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 10 feet
LOCATION: Perris, California	LOGGED BY: Ryan Bremer	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS					COMMENTS	
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)		ORGANIC CONTENT (%)
					SURFACE ELEVATION: 1443.0 feet MSL							
5		51	4.5		OLDER ALLUVIUM: Brown Silty Clay, little fine Sand, weakly cemented, hard-damp		6					
		79			Brown fine Sandy Silt, little Clay, weakly cemented, very dense-damp to moist		6					
		52			@ 6 feet, trace Clay, trace Calcareous veining		9					
		61					10					
10					Boring Terminated at 10'							

TBL 22G183-3.GPJ SoCalGeo.GDT 9/19/23



JOB NO.: 22G183-3				DRILLING DATE: 8/14/23				WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: 8 feet				
LOCATION: Perris, California				LOGGED BY: Ryan Bremer				READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1439.5 feet MSL							
5	X	62			OLDER ALLUVIUM: Brown fine to medium Sandy Silt, trace Clay, weakly cemented, very dense-damp to moist		6					
	X	72/11"					6					
	X	52			@ 6 feet, little Clay		9					
	X	57			Brown fine Sandy Silt, trace Clay, very dense-moist		10					
10												
Boring Terminated at 10'												

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23





JOB NO.: 22G183-3	DRILLING DATE: 8/15/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 14 feet
LOCATION: Perris, California	LOGGED BY: Ryan Bremer	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: 1438.5 feet MSL												
5		68	4.5		OLDER ALLUVIUM: Brown fine to medium Sandy Clay, little Silt, trace Calcareous veining, weakly cemented, hard-damp	107	4					
		71			Gray Brown fine Sandy Silt, little Clay, trace medium Sand, weakly cemented, dense to very dense-damp to very moist	127	6					
		81				125	9					
		85/9"			@ 7 feet, little Calcareous veining	125	13					
		50				112	24					
10												
15		64			Light Gray Brown fine Sandy Silt, extensive Calcareous veining, very dense-very moist		20					
					Boring Terminated at 15'							

TBL 22G183-3.GPJ SoCALGEO.GDT 9/19/23



JOB NO.: 22G183-3				DRILLING DATE: 8/14/23				WATER DEPTH: Dry								
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: 19 feet								
LOCATION: Perris, California				LOGGED BY: Ryan Bremer				READING TAKEN: At Completion								
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS				
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)					
					SURFACE ELEVATION: 1438.0 feet MSL											
5		26			ALLUVIUM: Brown fine Sandy Silt, little to some Clay, trace medium Sand, weakly cemented, medium dense-moist		9									
		30	4.0		OLDER ALLUVIUM: Dark Brown Clayey Silt, little fine Sand, trace Calcareous veining, weakly cemented, hard-moist to very moist		14									
		46	3.5				18									
	10		24		Brown fine to medium Sandy Silt, trace Clay, little Calcareous veining, medium dense to very dense-moist to very moist		13									
			50/3"				25									
15																
20		24			Gray Silt, trace fine to medium Sand, extensive Calcareous veining, medium dense-very moist		21									
	Boring Terminated at 20'															


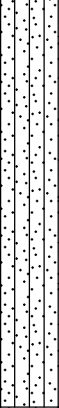



TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23



JOB NO.: 22G183-3				DRILLING DATE: 8/14/23				WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: 8 feet				
LOCATION: Perris, California				LOGGED BY: Ryan Bremer				READING TAKEN: At Completion				
FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5   												

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23



JOB NO.: 22G183-3				DRILLING DATE: 8/9/23				WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: 9 feet				
LOCATION: Perris, California				LOGGED BY: Joey Hernandez				READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1448.4 feet MSL							
5		30			<u>OLDER ALLUVIUM</u> : Brown fine Sandy Silt, little Clay, trace medium Sand, weakly cemented, dense to very dense-damp to moist  @ 8½ feet, trace Clay		4					
		56					7					
		87/10"					9					
		85/10"					8					
10					Boring Terminated at 10'							

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23





JOB NO.: 22G183-3				DRILLING DATE: 8/9/23				WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: 9 feet				
LOCATION: Perris, California				LOGGED BY: Joey Hernandez				READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1447.1 feet MSL							
					ALLUVIUM: Brown Silty fine Sand, little Clay, trace medium Sand, medium dense-damp		6					EI = 31 @ 1 to 5 feet
5		82/10"			OLDER ALLUVIUM: Brown fine Sandy Silt, little Clay, trace Calcareous veining, weakly cemented, dense to very dense-damp to moist		8					
		59					9					
		42					9					
10												
					Boring Terminated at 10'							

TBL 22G183-3.GPJ SOCALGEO.GDT 9/19/23



JOB NO.: 22G183-3R	DRILLING DATE: 9/18/24	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 13 feet
LOCATION: Perris, California	LOGGED BY: Aidan Salazar	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: --- MSL												
5	X	25	4.5		OLDER ALLUVIUM: Brown Clayey fine to medium Sand, trace coarse Sand, slightly cemented, medium dense-damp		5					
	X	11			Brown fine Sandy Clay, trace medium Sand, trace Calcareous veining, stiff to hard-damp to moist		10					
	X	14					8					
	X	63/9"					10					
10	X											
15	X	18			Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp		6					
Boring Terminated @ 15 feet												

TBL 22G183-3R.GPJ SOCALGEO.GDT 10/16/24



JOB NO.: 22G183-3R	DRILLING DATE: 9/18/24	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 18 feet
LOCATION: Perris, California	LOGGED BY: Aidan Salazar	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: --- MSL												
5  												

TBL 22G183-3R.GPJ SOCALGEO.GDT 10/16/24



JOB NO.: 22G183-3R	DRILLING DATE: 9/18/24	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 17.5 feet
LOCATION: Perris, California	LOGGED BY: Aidan Salazar	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: --- MSL												
5  												

TBL 22G183-3R.GPJ SOCALGEO.GDT 10/16/24





JOB NO.: 22G183-3R		DRILLING DATE: 9/18/24		WATER DEPTH: Dry								
PROJECT: Harvest Landing Industrial Development		DRILLING METHOD: Hollow Stem Auger		CAVE DEPTH: 17 feet								
LOCATION: Perris, California		LOGGED BY: Aidan Salazar		READING TAKEN: At Completion								
FIELD RESULTS				DESCRIPTION	LABORATORY RESULTS						COMMENTS	
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)		GRAPHIC LOG	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)		ORGANIC CONTENT (%)
5		32			ALLUVIUM: Brown fine to medium Sandy Silt, trace coarse Sand, trace Clay, trace Calcareous nodules, medium dense to dense-damp	111	3					
		68			OLDER ALLUVIUM: Brown Clayey fine to medium Sand, some Silt, trace coarse Sand, trace Calcareous nodules, dense-damp	113	7					
		22			Brown Silty fine to medium Sand, little Clay, trace coarse Sand, medium dense-damp	123	6					
		33				116	5					
		83/10"			Brown fine Sandy Silt, trace medium Sand, trace Clay, very dense-damp to moist	124	4					
10												
15		50/5"			@ 13½ feet, trace Calcareous nodules		8					
20		28			@ 18½ feet, medium dense		12					
Boring Terminated @ 20 feet												



JOB NO.: 22G183-3R	DRILLING DATE: 9/18/24	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 13 feet
LOCATION: Perris, California	LOGGED BY: Aidan Salazar	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: --- MSL												
5   <												

TBL 22G183-3R.GPJ SOCALGEO.GDT 10/16/24










JOB NO.: 22G183-3R	DRILLING DATE: 9/18/24	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 17.5 feet
LOCATION: Perris, California	LOGGED BY: Aidan Salazar	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: --- MSL												
5		16	85/10"	4.5		ALLUVIUM: Dark Brown Silty fine Sand to fine Sandy Silt, trace Clay, medium dense-damp	117	6				Disturbed Sample @ 9'
		26				@ 3 feet, trace medium to coarse Sand	125	9				
		29				OLDER ALLUVIUM: Dark Brown fine to medium Sandy Silt, little Clay, trace coarse Sand, medium dense to very dense-damp	118	8				
		77					131	9				
		85/10"				Light Brown fine Sandy Clay, little Silt, trace medium Sand, hard-moist		11				
10						Brown fine to medium Sandy Silt, trace coarse Sand, trace Clay, dense-moist						
15		40						10				
		42	@ 18½ feet, little coarse Sand			10						
20						Boring Terminated @ 20 feet						













TBL 22G183-3R.GPJ SOCALGEO.GDT 10/16/24



JOB NO.: 22G183-3R		DRILLING DATE: 9/18/24		WATER DEPTH: Dry								
PROJECT: Harvest Landing Industrial Development		DRILLING METHOD: Hollow Stem Auger		CAVE DEPTH: 12.5 feet								
LOCATION: Perris, California		LOGGED BY: Aidan Salazar		READING TAKEN: At Completion								
FIELD RESULTS				DESCRIPTION	LABORATORY RESULTS						COMMENTS	
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)		GRAPHIC LOG	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)		ORGANIC CONTENT (%)
5		18			ALLUVIUM: Brown fine to medium Sandy Silt, little coarse Sand, trace Clay, some Calcareous nodules, medium dense-moist		9					
		66			OLDER ALLUVIUM: Dark Brown Silty fine to medium Sand, trace coarse Sand, trace Clay, very dense-moist		11					
		62			Brown fine Sandy Silt, trace medium Sand, trace Clay, little Calcareous nodules, dense to very dense-moist		12					
		40						13				
10												
15		38					10					
					Boring Terminated @ 15 feet							

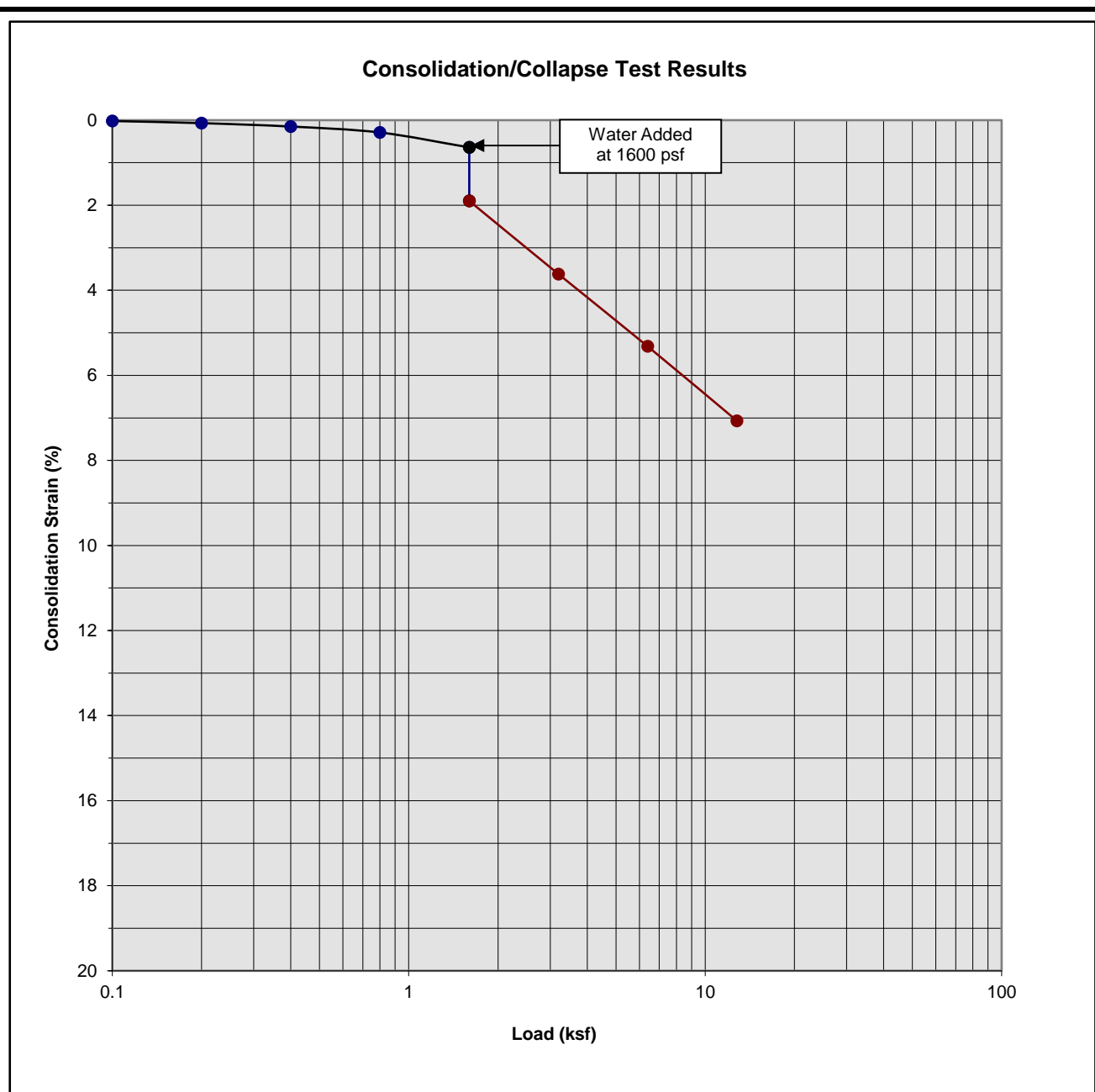


JOB NO.: 22G183-3R	DRILLING DATE: 9/18/24	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 12 feet
LOCATION: Perris, California	LOGGED BY: Aidan Salazar	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: --- MSL												
5		73/11"			OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace Clay, little Calcareous nodules, very dense-damp	109	6					
		76/9"				120	6					
		48			Brown fine Sandy Silt, little medium Sand, trace Clay, dense-very moist	116	14					
		67			Brown Clayey fine Sand, some Silt, trace medium Sand, trace Calcareous nodules, slightly porous, dense-moist	127	11					
		87/10"			Brown fine Sandy Silt, trace medium Sand, little Calcareous nodules, very dense-moist	120	12					
		68/11"			Light Brown fine to medium Sandy Clay, trace coarse Sand, extensive Calcareous veining, hard-very moist		14					
15					Boring Terminated @ 15 feet							

TBL 22G183-3R.GPJ SOCALGEO.GDT 10/16/24

# APPENDIX



Classification: OLDER ALLUVIUM: Brown fine Sandy Silt, trace Clay, trace medium Sand

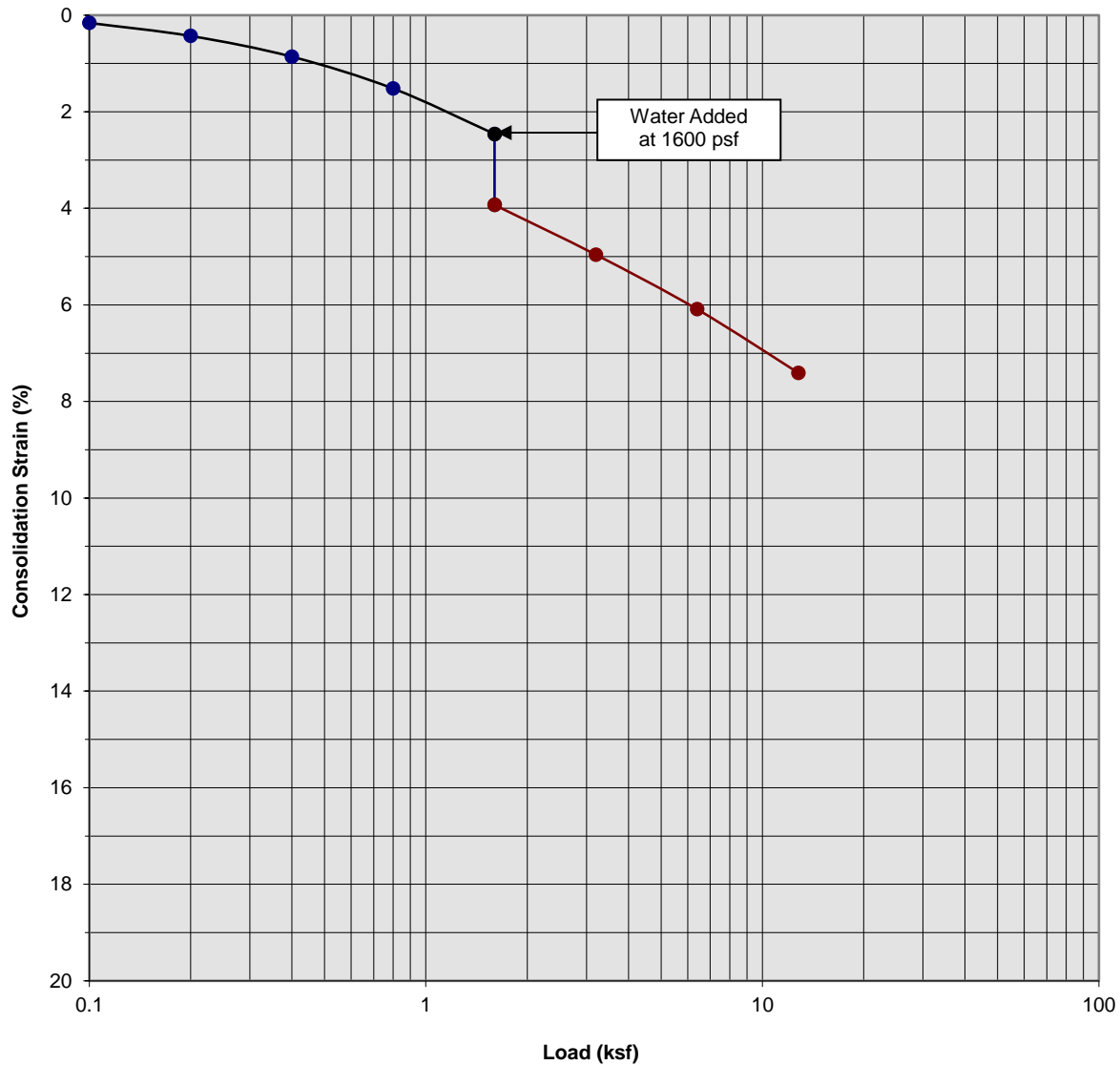
Boring Number:	B-37	Initial Moisture Content (%)	9
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	9 to 10	Initial Dry Density (pcf)	119.7
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	128.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.26

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-3  
**PLATE C- 1**



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### Consolidation/Collapse Test Results



Classification: OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace Clay

Boring Number:	B-37	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	14 to 15	Initial Dry Density (pcf)	128.4
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	138.0
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.47

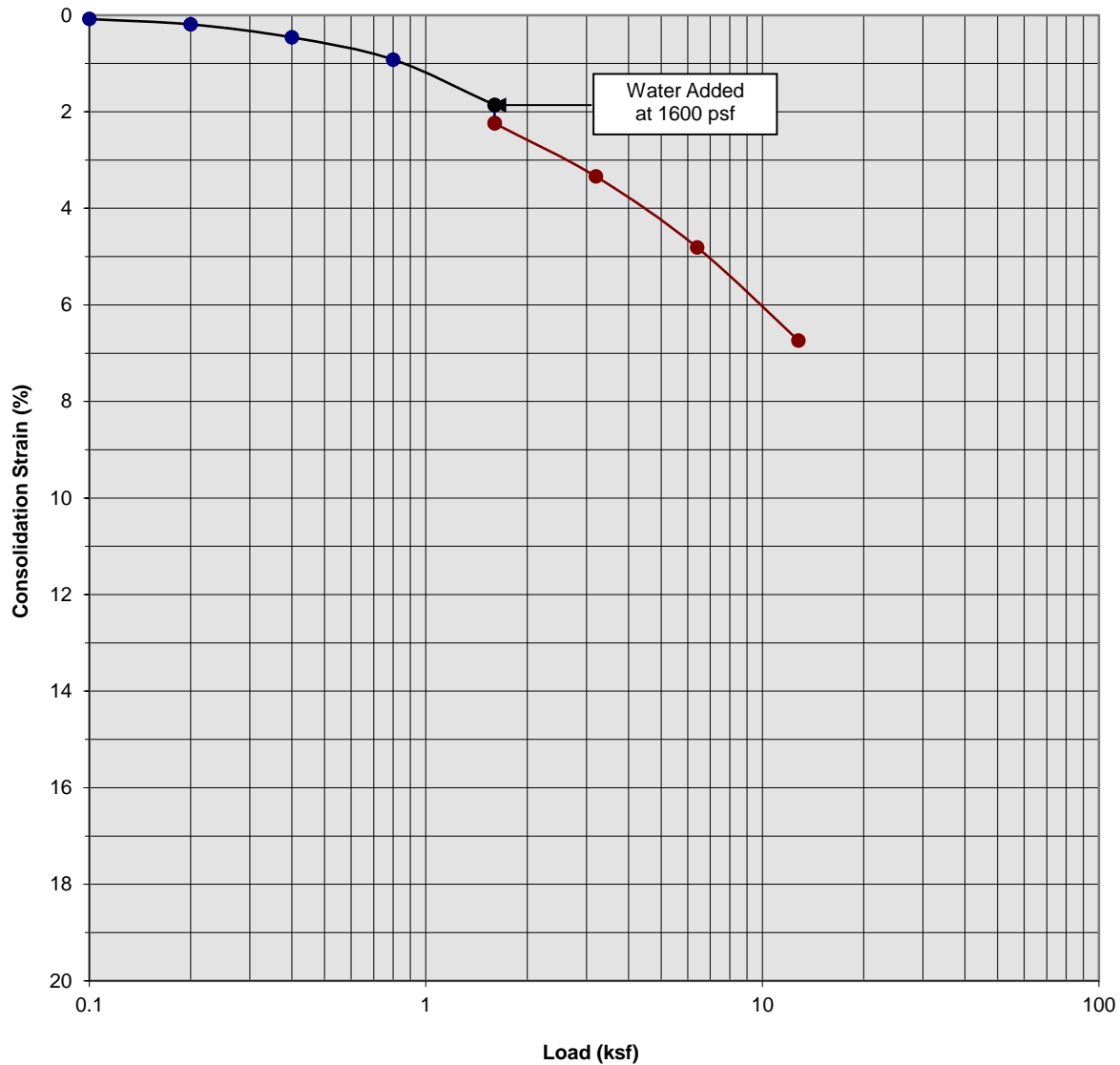
Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-3  
**PLATE C- 2**



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### Consolidation/Collapse Test Results



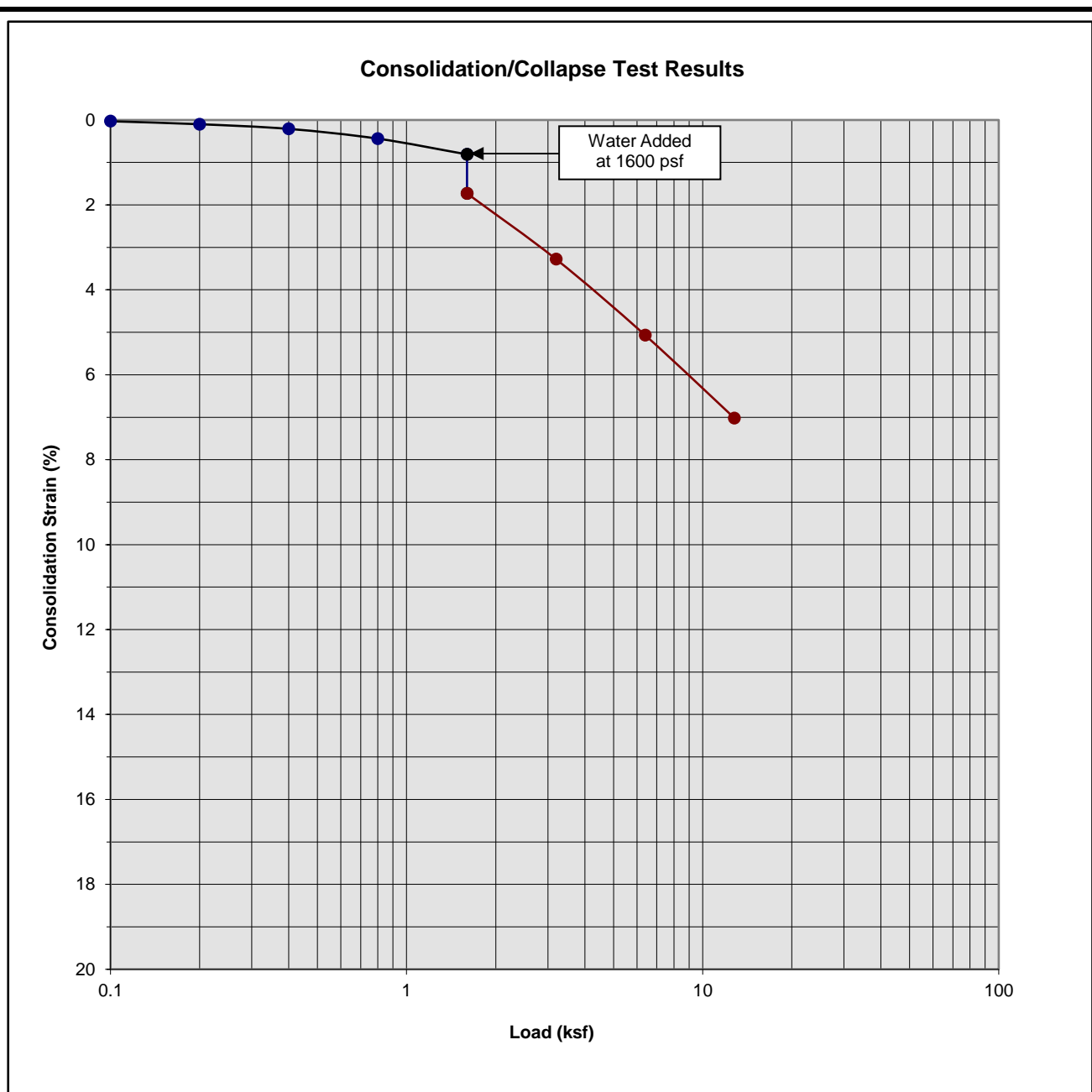
Classification: OLDER ALLUVIUM: Brown fine to medium Sandy Silt, trace Clay

Boring Number:	B-37	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	19 to 20	Initial Dry Density (pcf)	119.2
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	127.8
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.38

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-3  
**PLATE C- 3**



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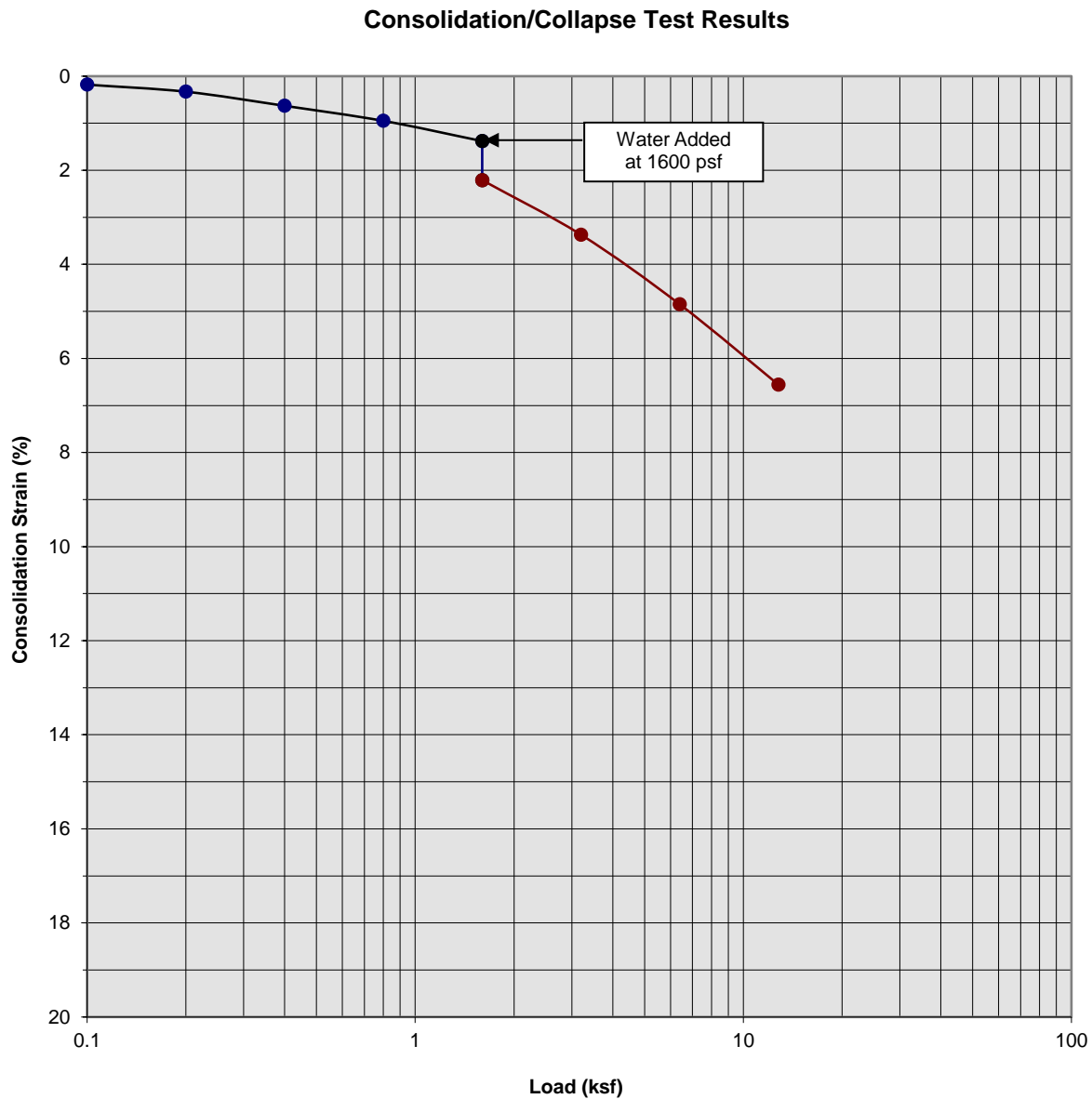
Classification: OLDER ALLUVIUM: Brown fine Sandy Silt, trace Clay, trace medium Sand

Boring Number:	B-37	Initial Moisture Content (%)	8
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	24 to 25	Initial Dry Density (pcf)	122.2
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	131.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.92

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-3  
**PLATE C- 4**



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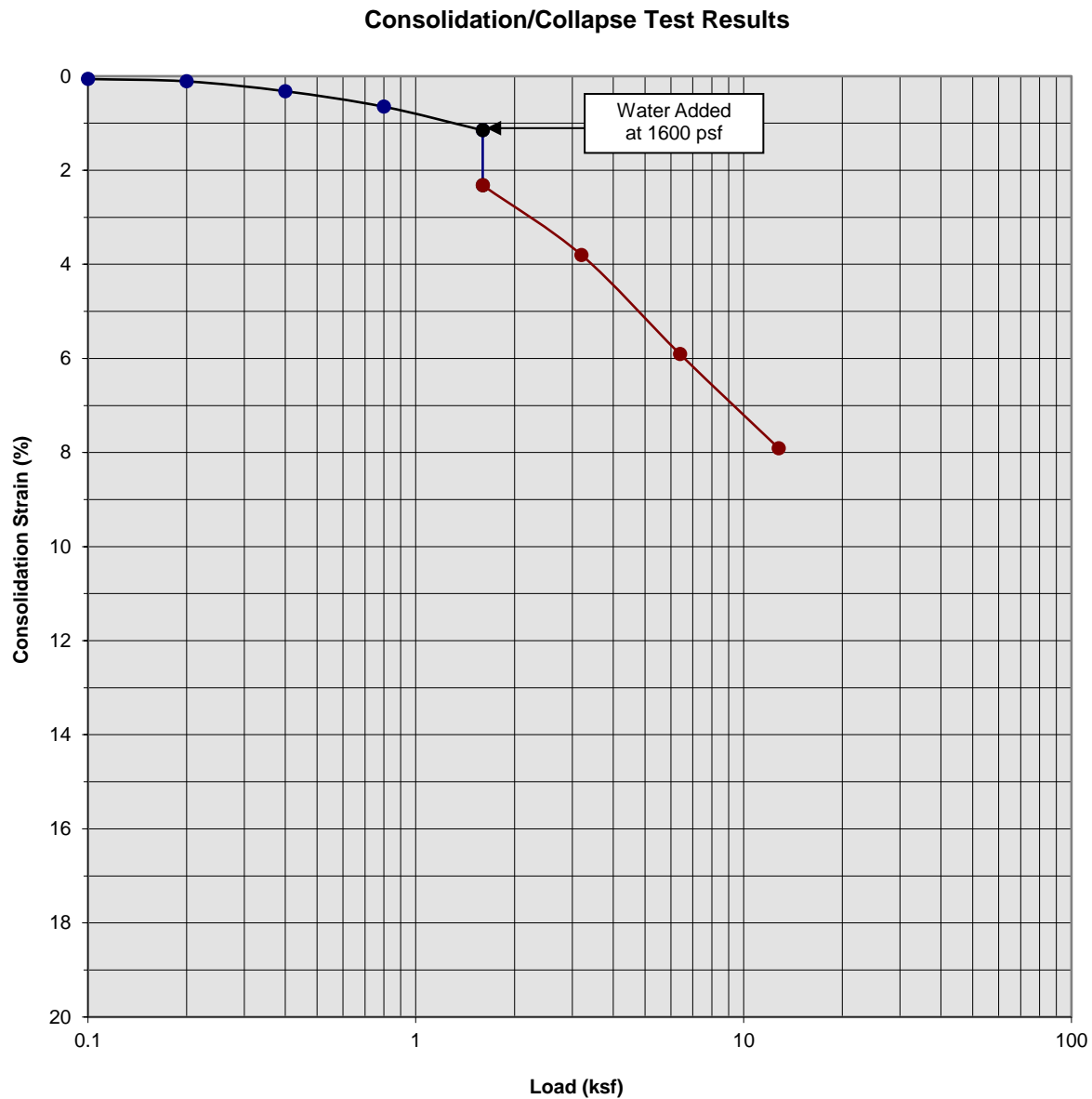
Classification: OLDER ALLUVIUM: Brown fine Sandy Silt, little Clay

Boring Number:	B-48	Initial Moisture Content (%)	11
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	5 to 6	Initial Dry Density (pcf)	120.5
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	127.0
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.83

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-3  
**PLATE C- 5**



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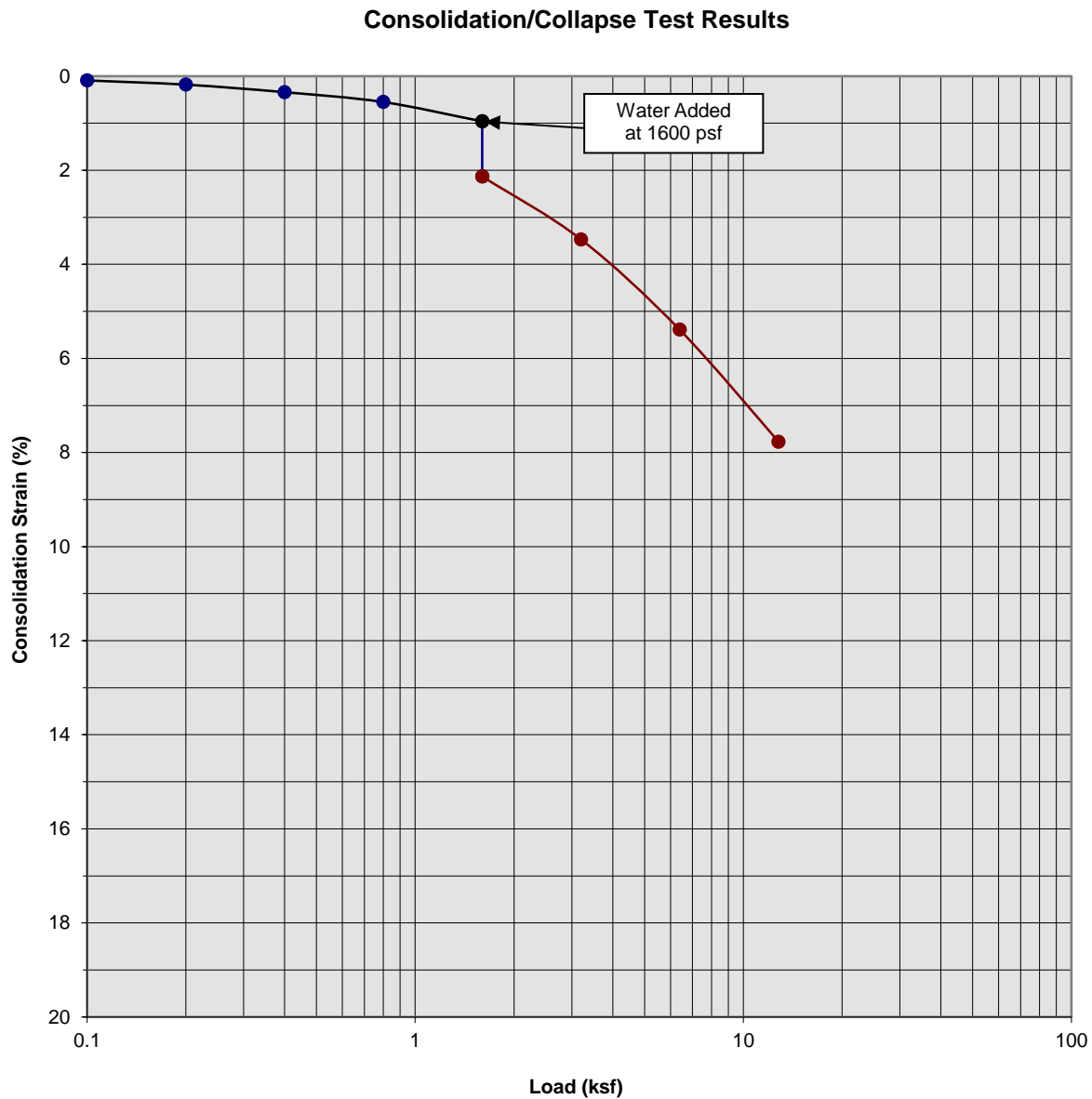
Classification: OLDER ALLUVIUM: Brown Clayey Silt, little fine Sand

Boring Number:	B-48	Initial Moisture Content (%)	11
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	7 to 8	Initial Dry Density (pcf)	117.9
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	128.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.17

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-3  
**PLATE C- 6**



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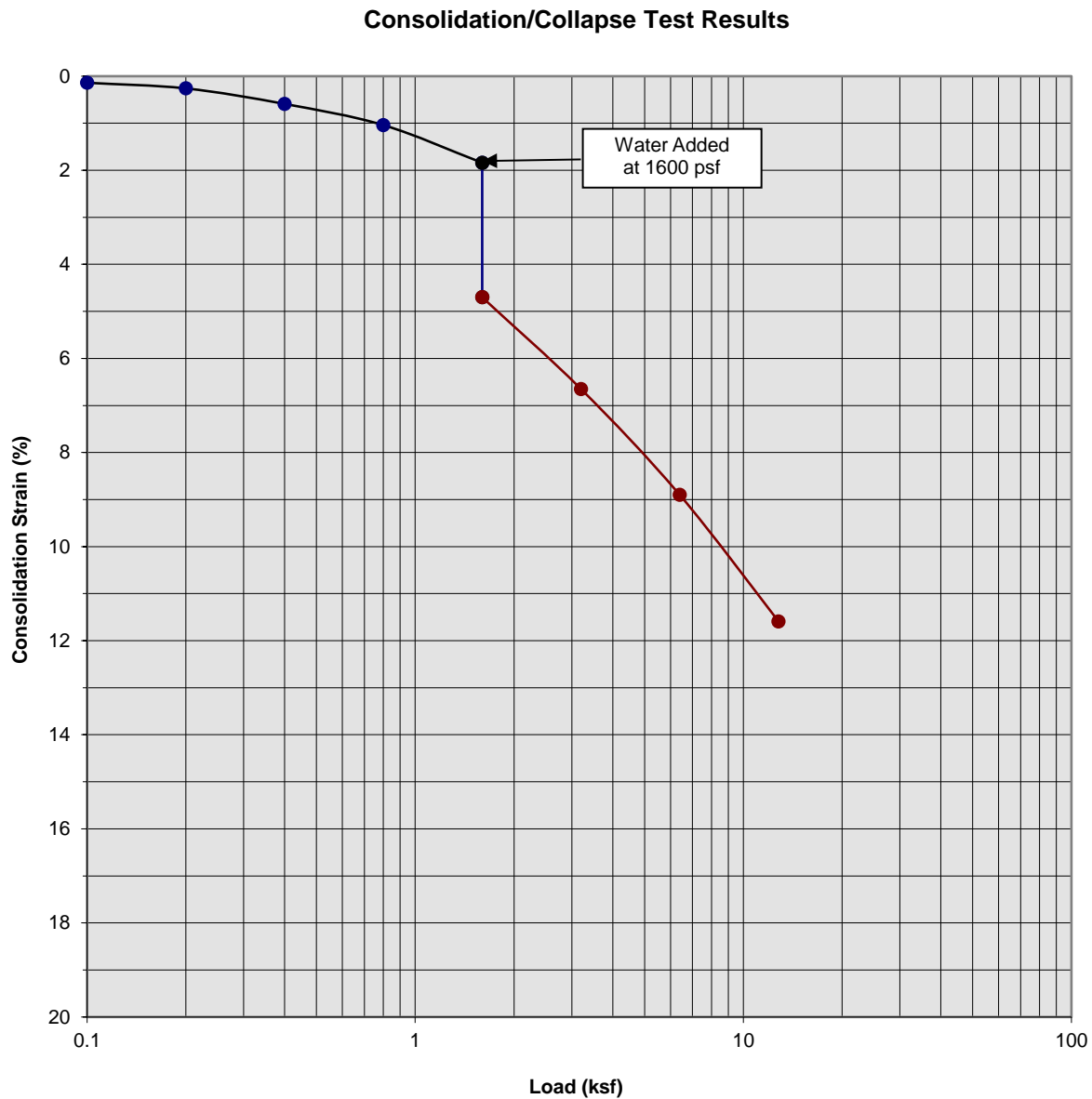
Classification: OLDER ALLUVIUM: Dark Brown fine to medium Sandy Silt, little Clay

Boring Number:	B-48	Initial Moisture Content (%)	8
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	9 to 10	Initial Dry Density (pcf)	109.7
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	117.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.17

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-3  
**PLATE C- 7**



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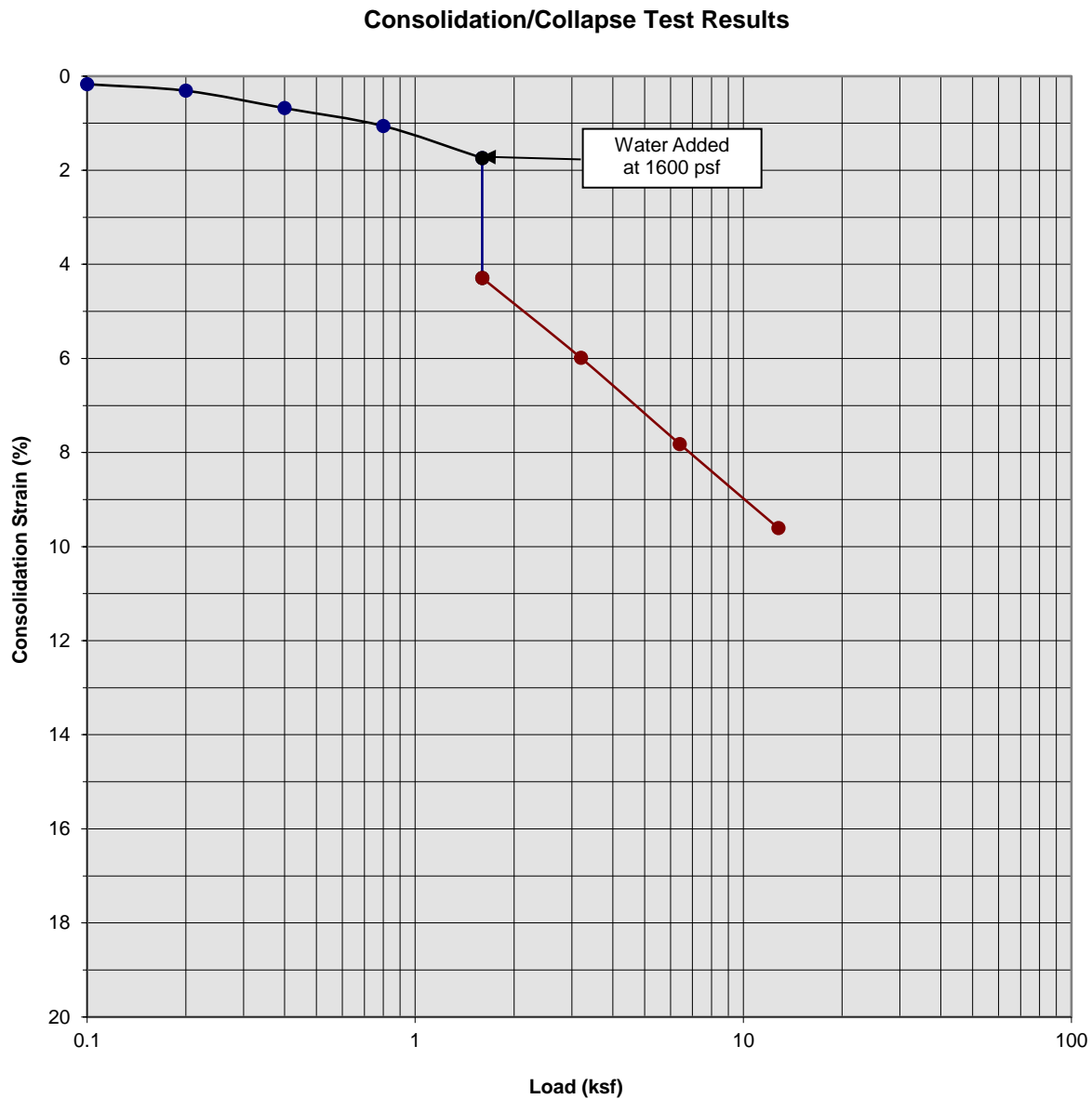
Classification: ALLUVIUM: Brown Silty fine to medium Sand, trace coarse Sand

Boring Number:	B-55	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	11
Depth (ft)	1 to 2	Initial Dry Density (pcf)	113.8
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	127.0
Specimen Thickness (in)	1.0	Percent Collapse (%)	2.86

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-3  
**PLATE C- 8**



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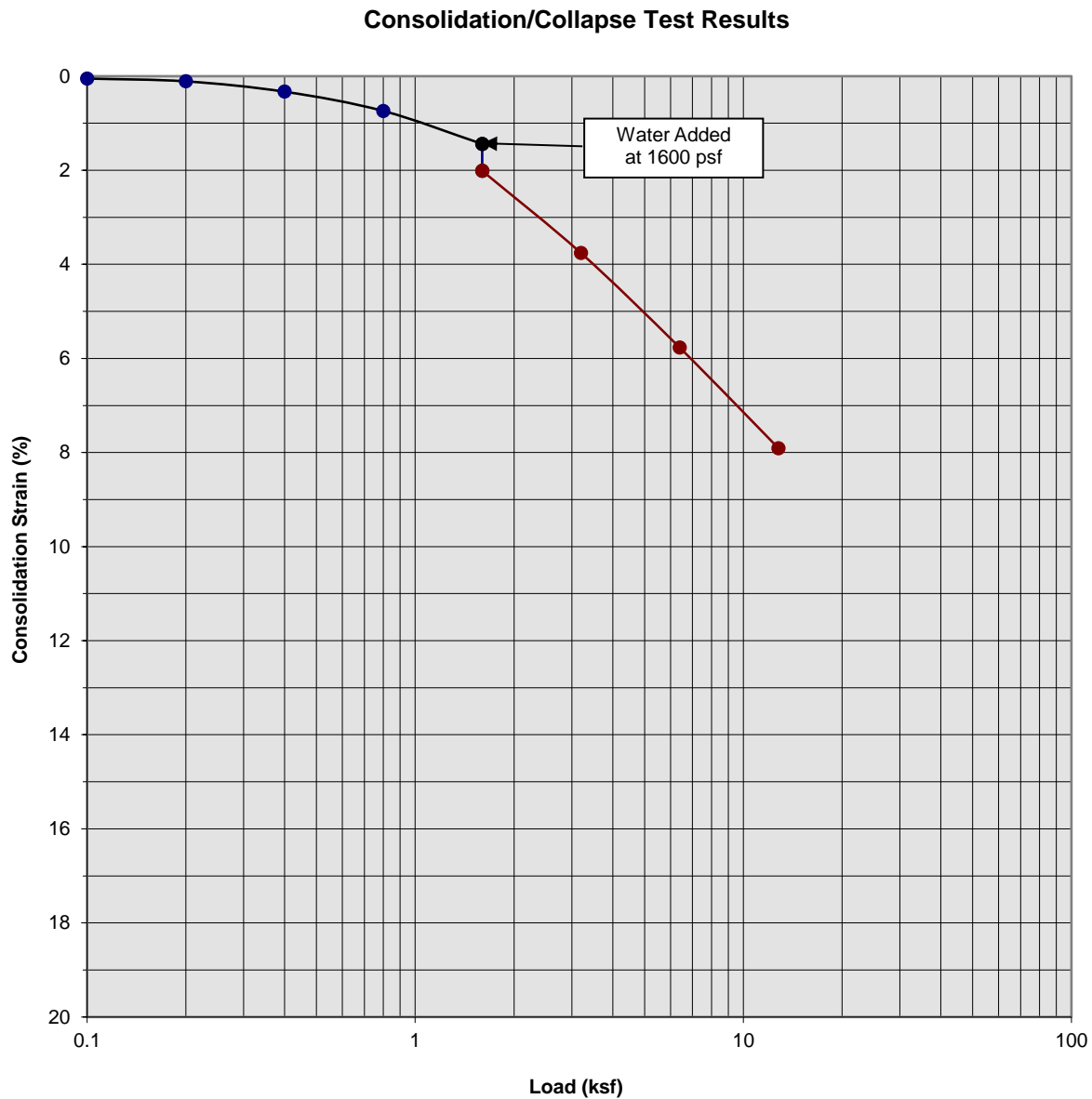
Classification: OLDER ALLUVIUM: Gray Brown Clayey fine to medium Sand, little Silt

Boring Number:	B-55	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	9
Depth (ft)	3 to 4	Initial Dry Density (pcf)	127.6
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	141.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	2.55

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-3  
**PLATE C- 9**



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Classification: OLDER ALLUVIUM: Brown fine to medium Sandy Silt, little Clay

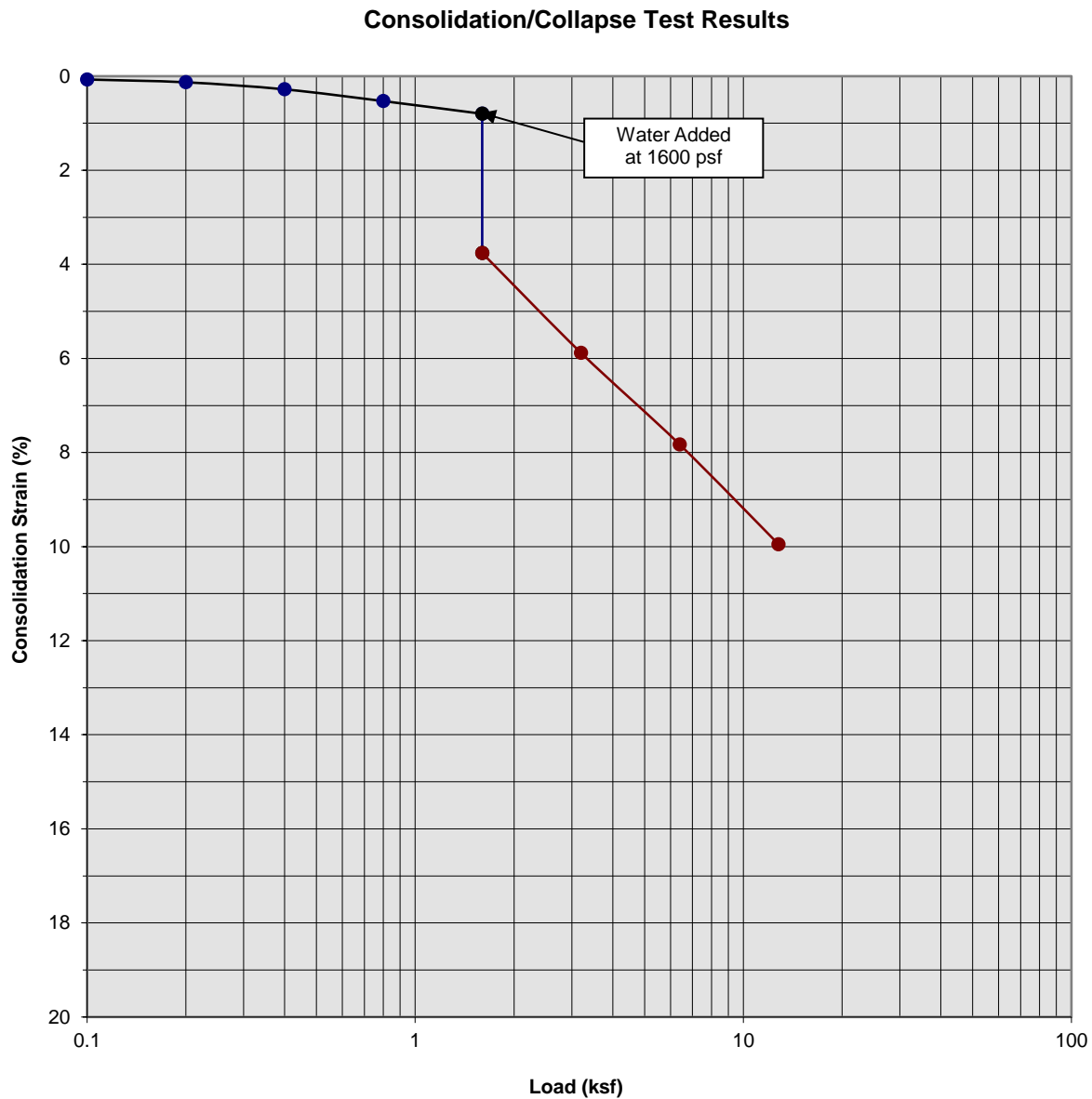
Boring Number:	B-55	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	5 to 6	Initial Dry Density (pcf)	111.4
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	121.0
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.57

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-3  
**PLATE C- 10**



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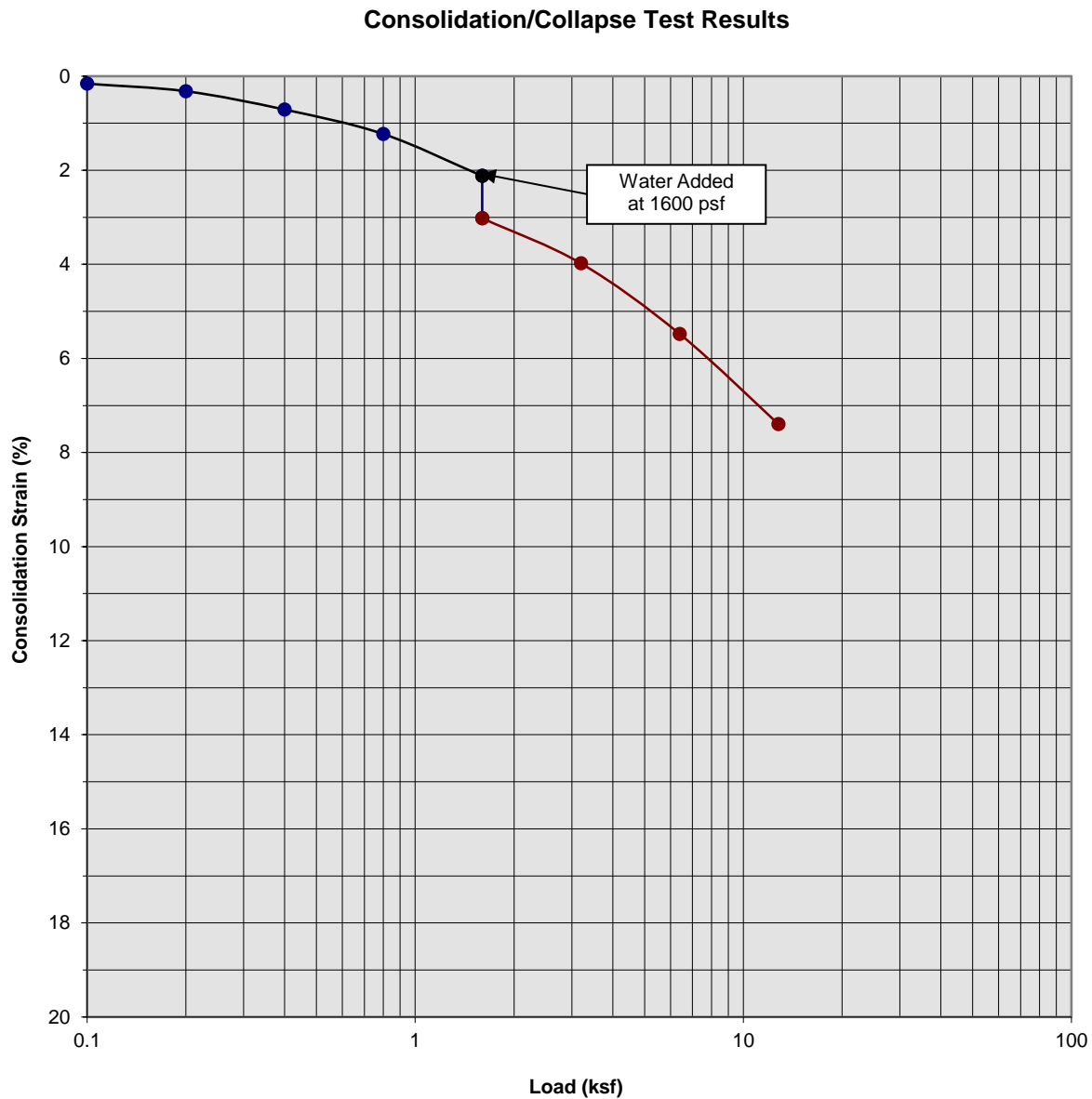
Classification: ALLUVIUM: Dark Gray Silty Clay, little fine to medium Sand

Boring Number:	B-60	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	1 to 2	Initial Dry Density (pcf)	119.4
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	132.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	2.96

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-3  
**PLATE C- 11**



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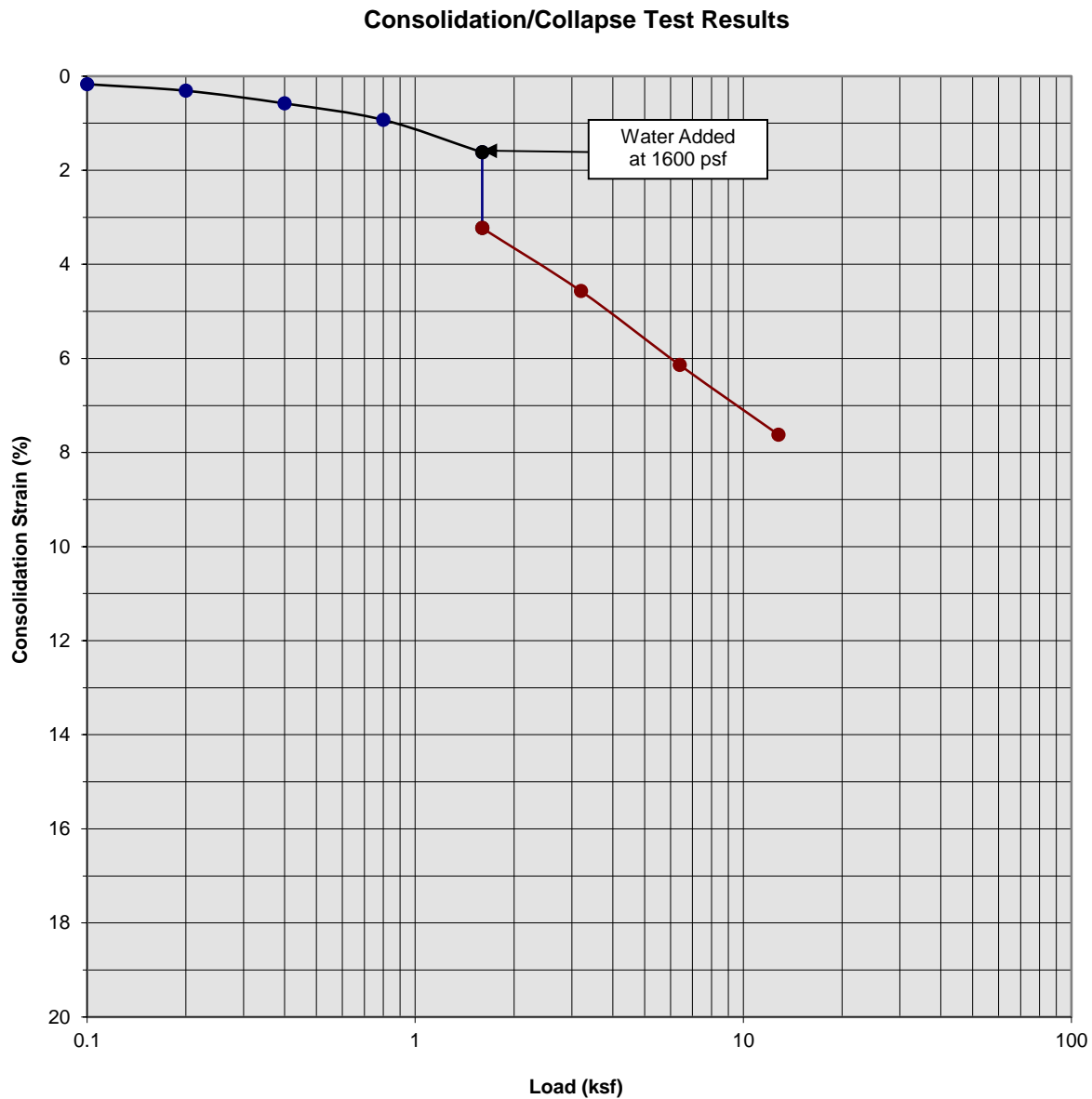
Classification: OLDER ALLUVIUM: Brown fine to medium Sandy Silt, trace Clay

Boring Number:	B-60	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	3 to 4	Initial Dry Density (pcf)	123.4
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	133.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.90

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-3  
**PLATE C- 12**



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Classification: OLDER ALLUVIUM: Gray Brown fine Sandy Silt, little medium Sand

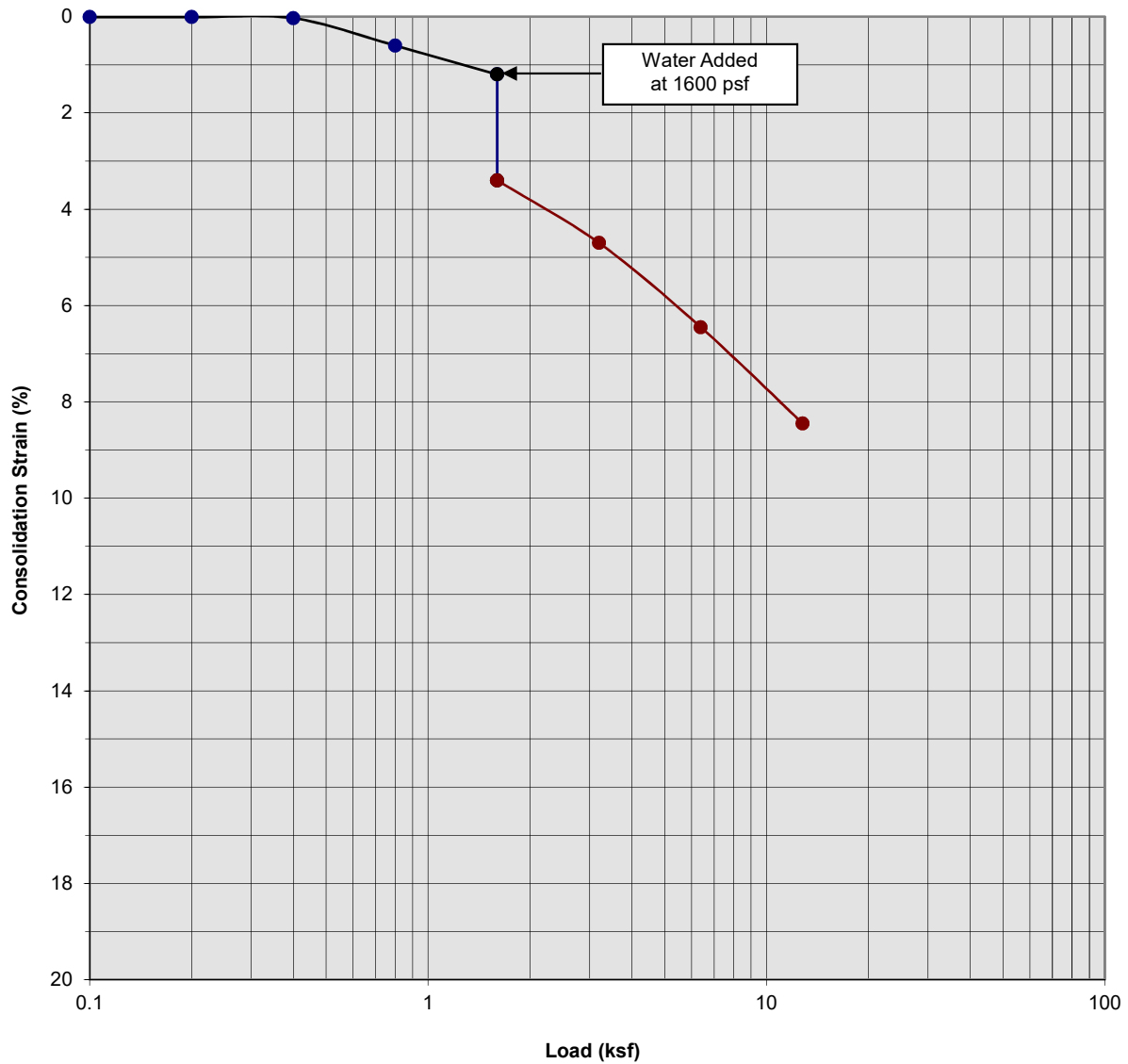
Boring Number:	B-60	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	9 to 10	Initial Dry Density (pcf)	120.9
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	129.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.61

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-3  
**PLATE C- 13**



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### Consolidation/Collapse Test Results



Classification: OLDER ALLUVIUM: Brown fine to coarse Sandy Silt, trace Clay

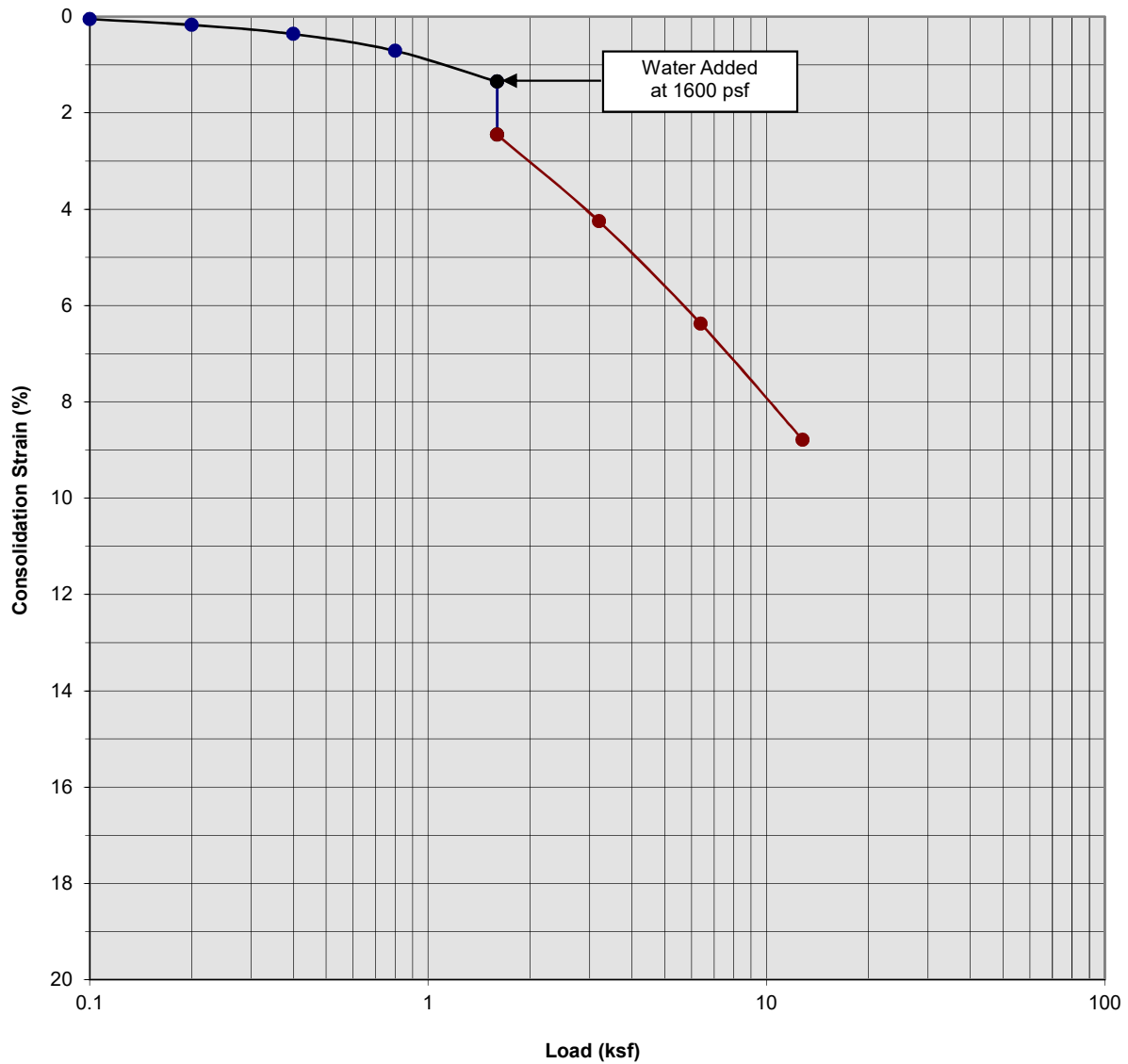
Boring Number:	B-69	Initial Moisture Content (%)	7
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	3 to 4	Initial Dry Density (pcf)	115.5
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	127.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	2.20

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-3R  
**PLATE C- 14**



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### Consolidation/Collapse Test Results



Classification: OLDER ALLUVIUM: Brown fine to coarse Sandy Silt, trace Clay

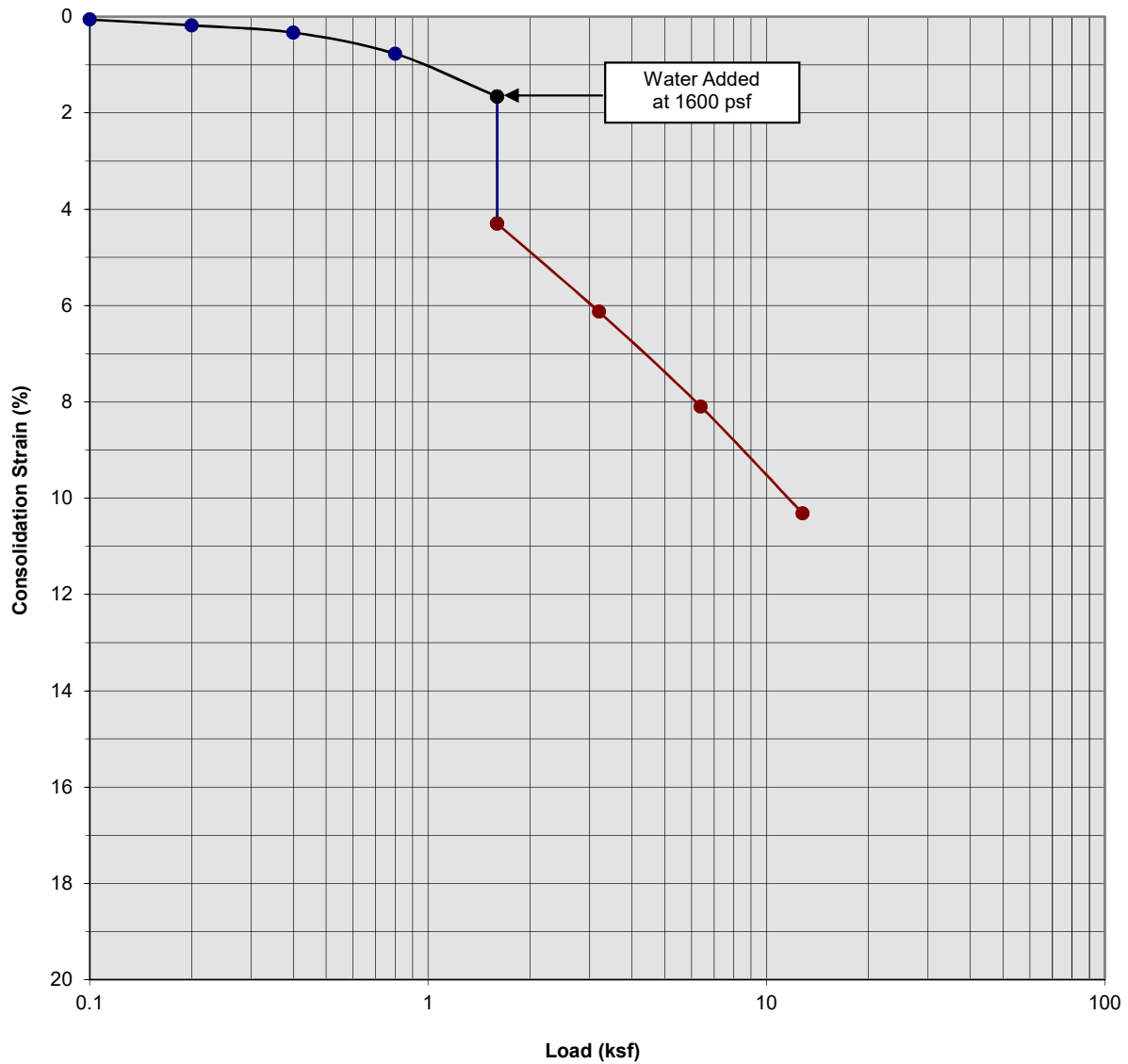
Boring Number:	B-69	Initial Moisture Content (%)	7
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	5 to 6	Initial Dry Density (pcf)	117.4
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	129.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.10

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-3R  
**PLATE C- 15**



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### Consolidation/Collapse Test Results



Classification: OLDER ALLUVIUM: Brown fine to medium Sandy Silt, trace coarse Sand

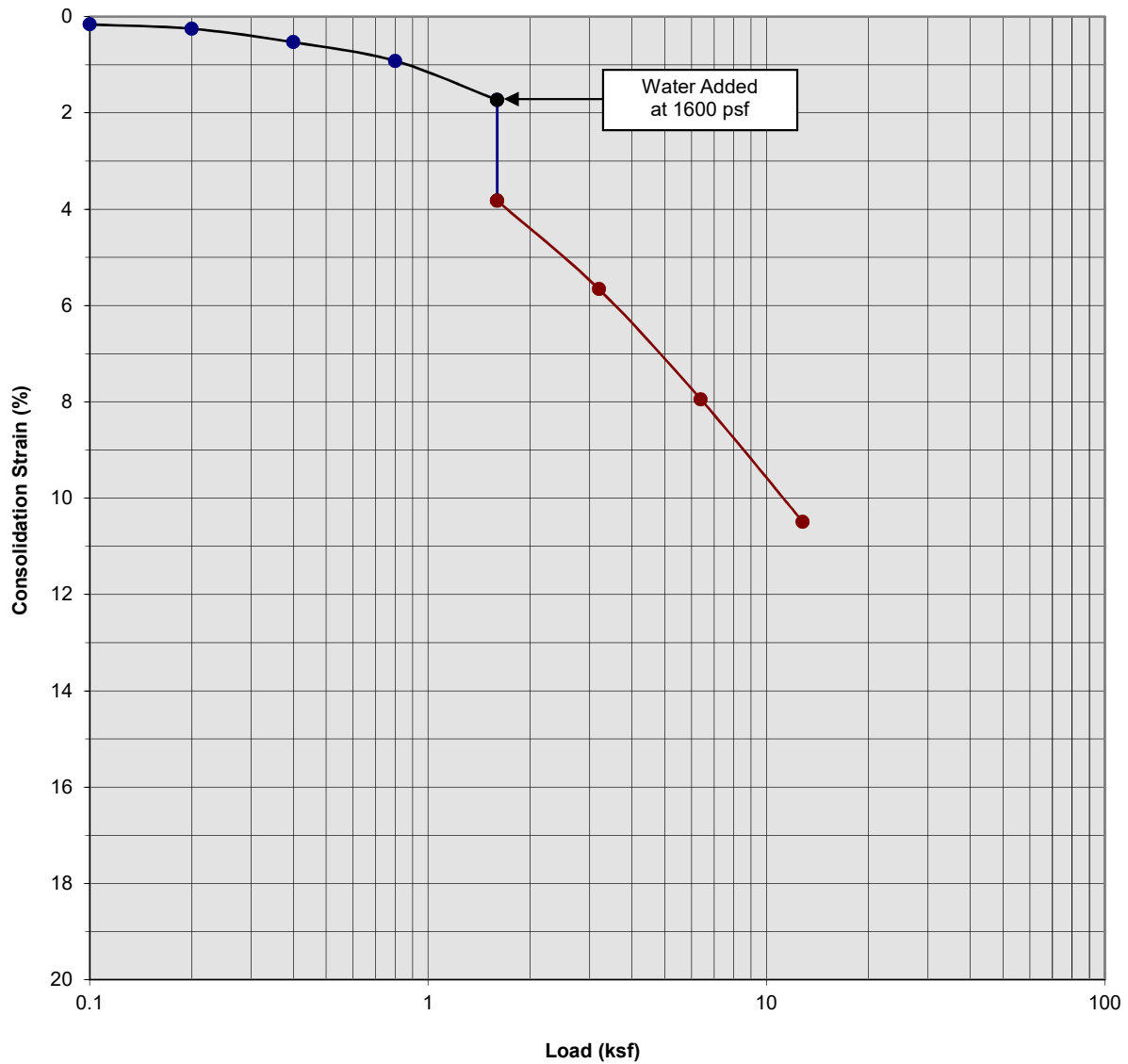
Boring Number:	B-69	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	7 to 8	Initial Dry Density (pcf)	123.2
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	138.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	2.64

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-3R  
**PLATE C- 16**



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### Consolidation/Collapse Test Results



Classification: OLDER ALLUVIUM: Brown Clayey fine to medium Sand, trace coarse Sand

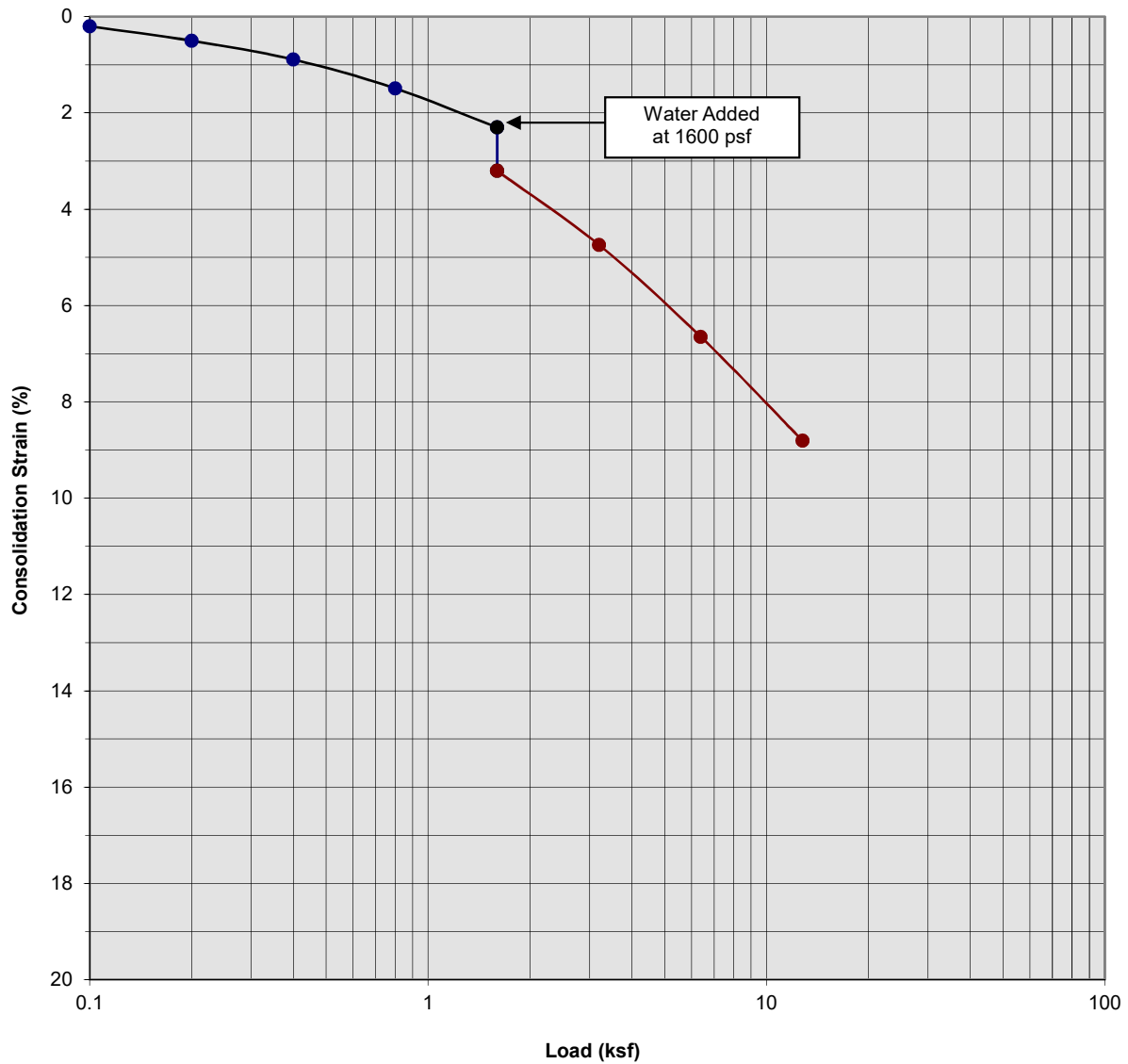
Boring Number:	B-69	Initial Moisture Content (%)	7
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	9 to 10	Initial Dry Density (pcf)	121.8
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	137.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	2.09

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-3R  
**PLATE C- 17**



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### Consolidation/Collapse Test Results



Classification: OLDER ALLUVIUM: Brown Silty fine to medium Sand, little Clay,  
trace coarse Sand

Boring Number:	B-71	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	5 to 6	Initial Dry Density (pcf)	122.8
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	133.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.90

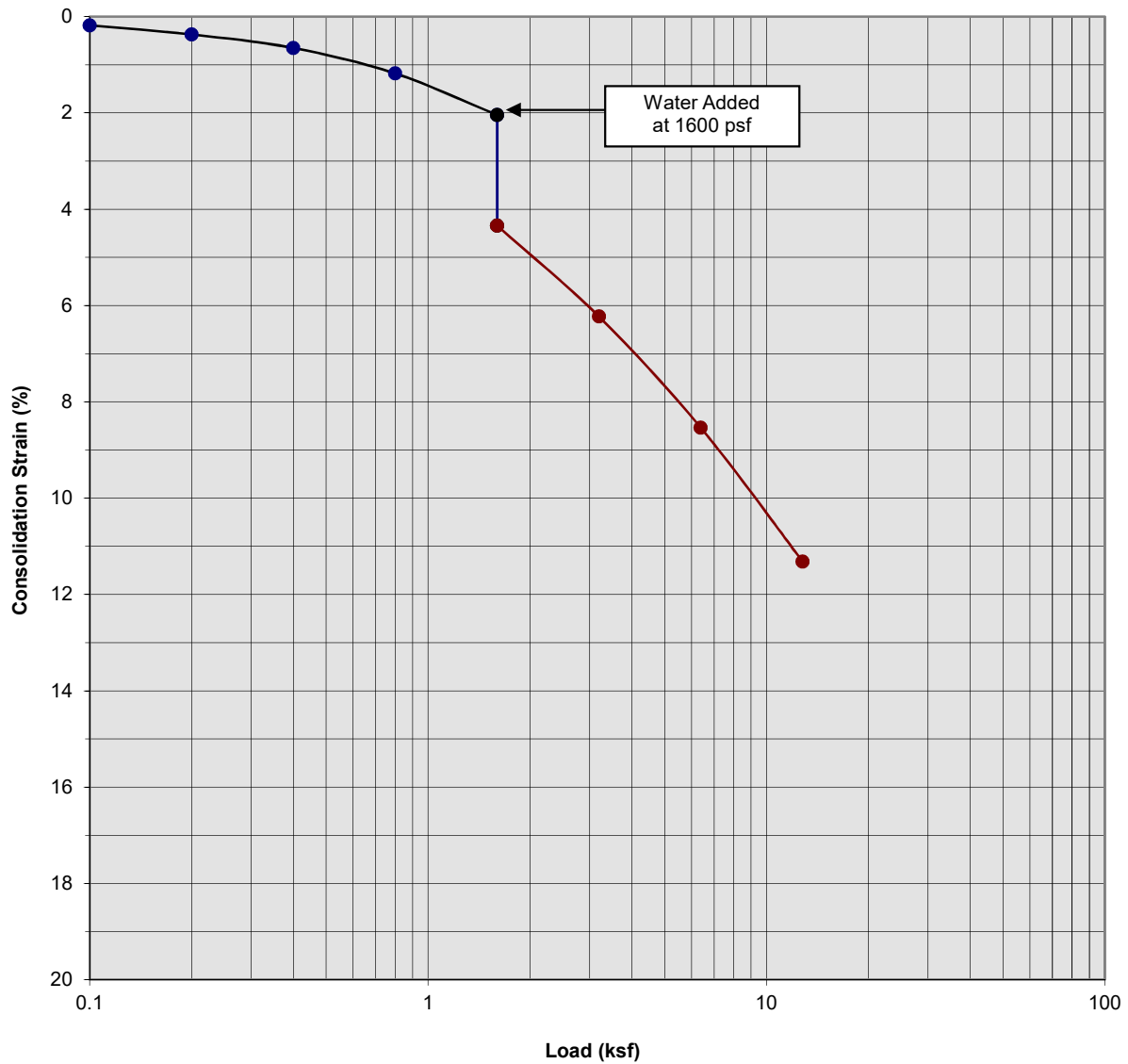
Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-3R  
**PLATE C- 18**



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### Consolidation/Collapse Test Results



Classification: OLDER ALLUVIUM: Brown Silty fine to medium Sand, little Clay,  
trace coarse Sand

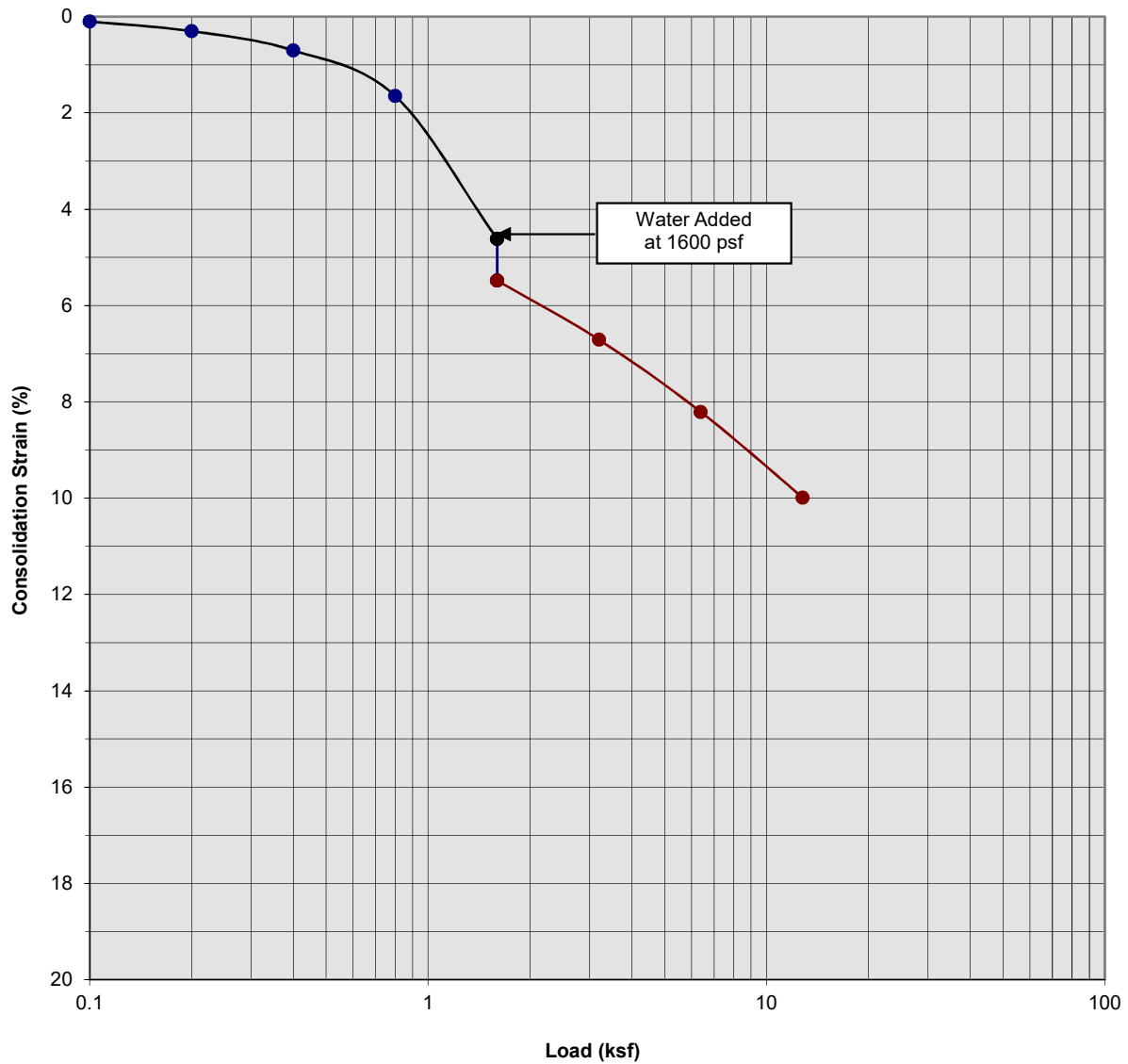
Boring Number:	B-71	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	7-8'	Initial Dry Density (pcf)	116.9
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	132.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	2.30

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-3R  
**PLATE C- 19**



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### Consolidation/Collapse Test Results



Classification: OLDER ALLUVIUM: Brown fine Sandy Silt, trace medium Sand, trace Clay

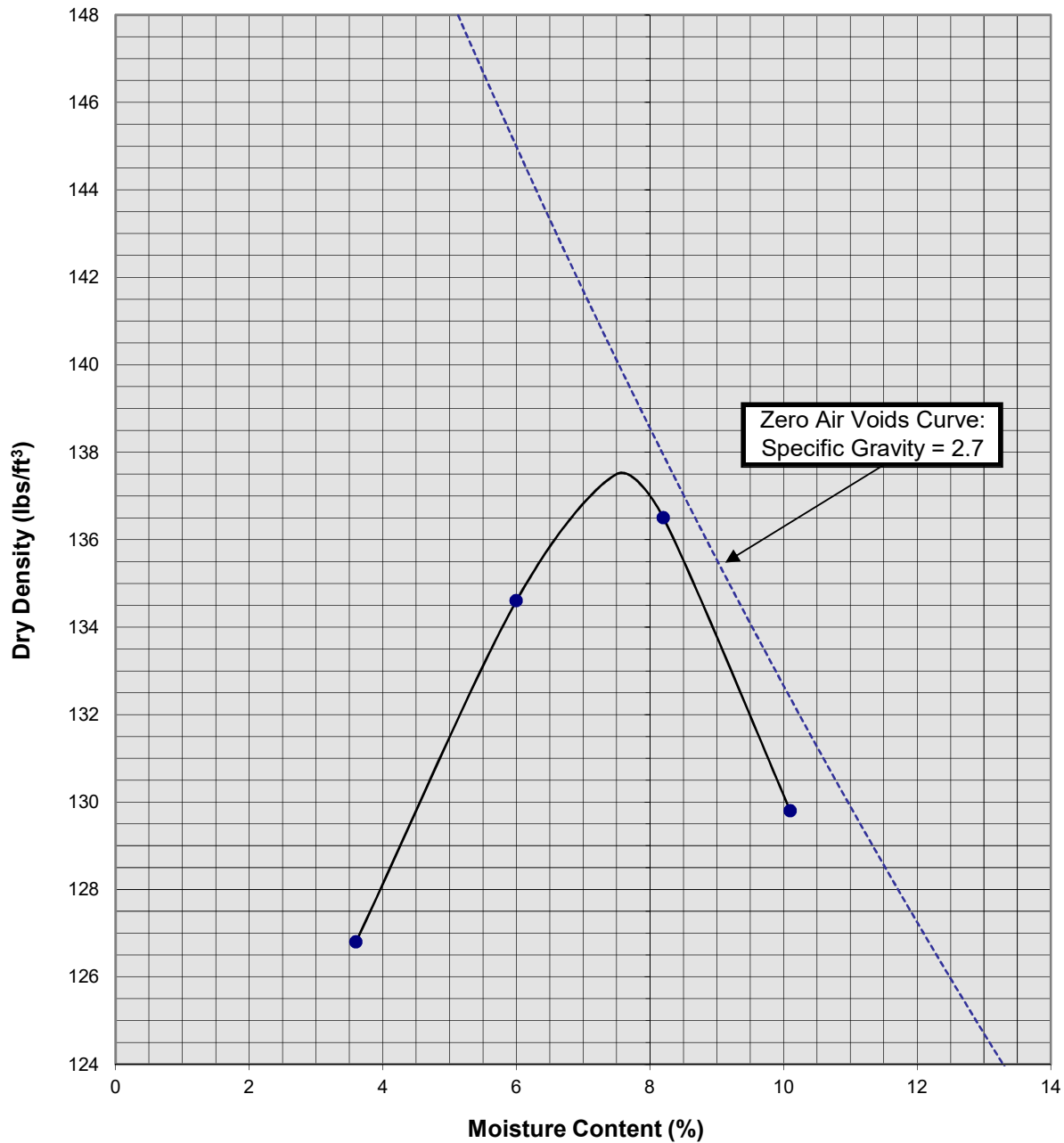
Boring Number:	B-71	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	9-10'	Initial Dry Density (pcf)	124.5
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	139.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.86

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-3R  
**PLATE C- 20**



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# Moisture/Density Relationship ASTM D-1557



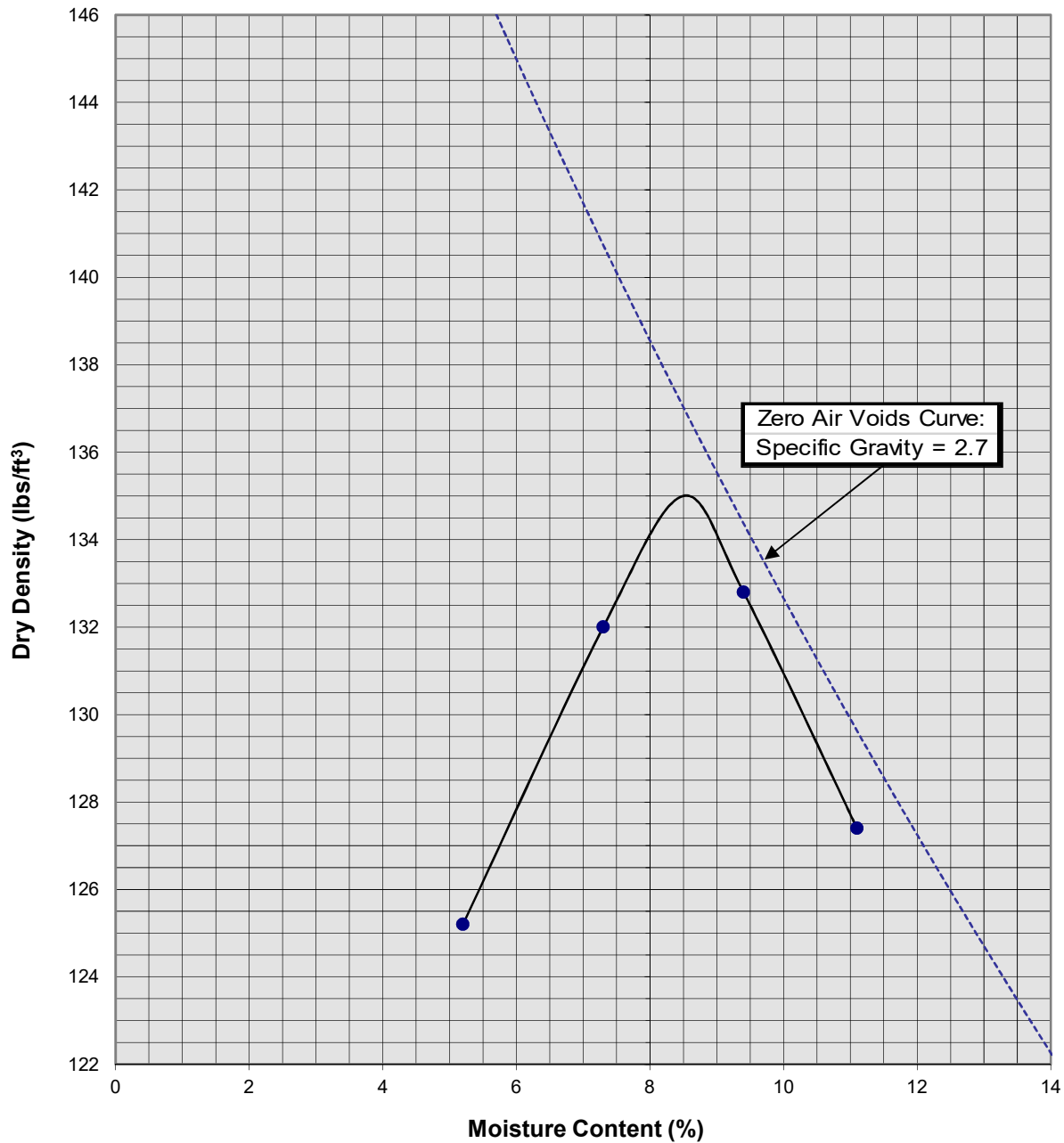
Soil ID Number	B-35 @ 1-5'
Optimum Moisture (%)	7.5
Maximum Dry Density (pcf)	137.5
Soil Classification	Light Brown Silty fine to medium Sand, some Clay

Harvest Landing Industrial Dev.  
Perris, California  
Project No. 22G183-3  
**PLATE C-21**



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# Moisture/Density Relationship ASTM D-1557



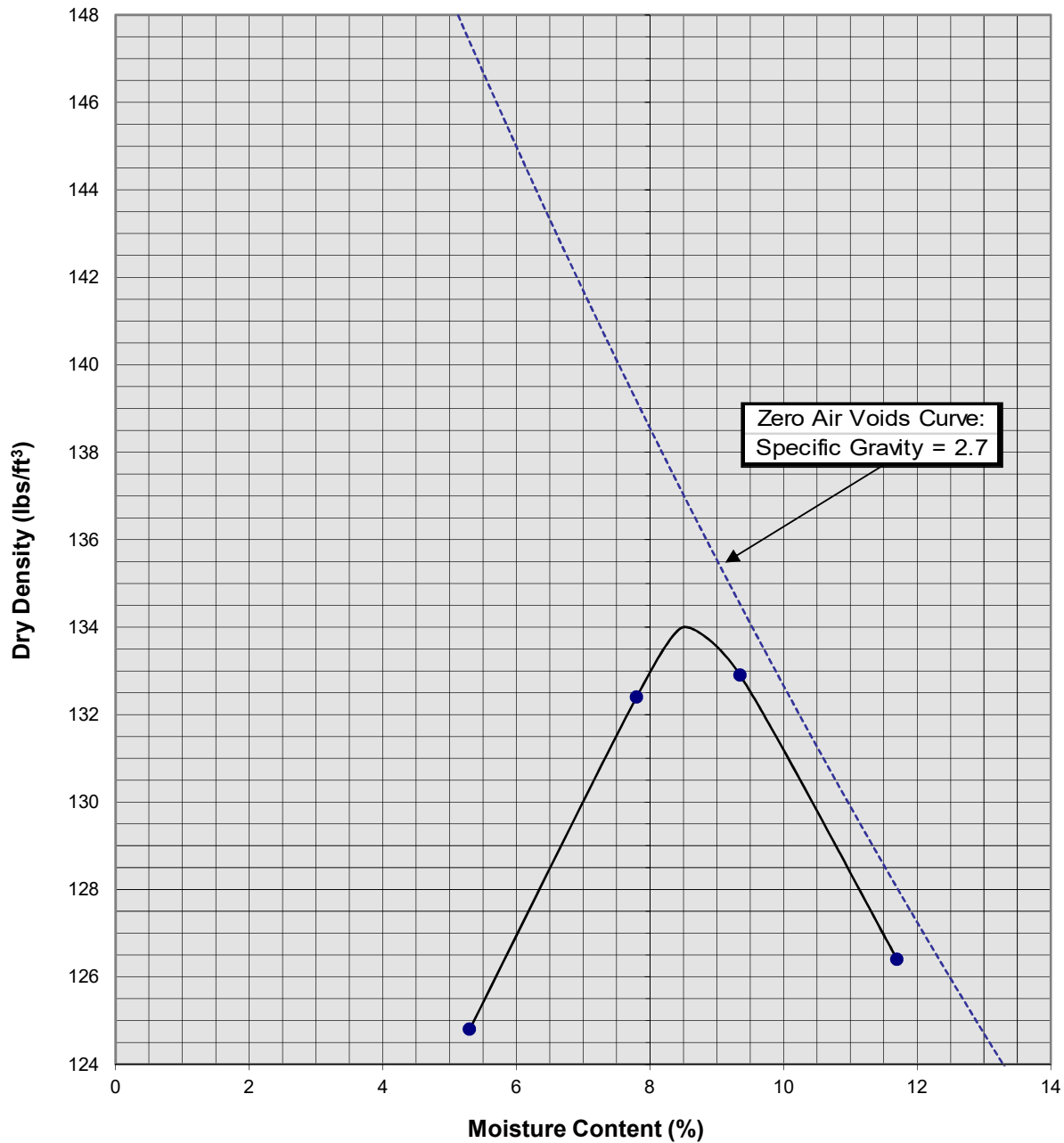
Soil ID Number	B-48 @ 1-5'
Optimum Moisture (%)	8.5
Maximum Dry Density (pcf)	135
Soil Classification	Brown Clayey fine Sand, some Silt

Harvest Landing Industrial Dev.  
Perris, California  
Project No. 22G183-3  
**PLATE C-22**



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# Moisture/Density Relationship ASTM D-1557



Soil ID Number		B-67 @ 1-5'
Optimum Moisture (%)		8.5
Maximum Dry Density (pcf)		134
Soil	Light Brown Silty fine Sand, trace to little Clay	
Classification		

Harvest Landing Industrial Dev.  
Perris, California  
Project No. 22G183-3

**PLATE C-23**



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# APPENDIX

## **GRADING GUIDE SPECIFICATIONS**

These grading guide specifications are intended to provide typical procedures for grading operations. They are intended to supplement the recommendations contained in the geotechnical investigation report for this project. Should the recommendations in the geotechnical investigation report conflict with the grading guide specifications, the more site specific recommendations in the geotechnical investigation report will govern.

### **General**

- The Earthwork Contractor is responsible for the satisfactory completion of all earthwork in accordance with the plans and geotechnical reports, and in accordance with city, county, and applicable building codes.
- The Geotechnical Engineer is the representative of the Owner/Builder for the purpose of implementing the report recommendations and guidelines. These duties are not intended to relieve the Earthwork Contractor of any responsibility to perform in a workman-like manner, nor is the Geotechnical Engineer to direct the grading equipment or personnel employed by the Contractor.
- The Earthwork Contractor is required to notify the Geotechnical Engineer of the anticipated work and schedule so that testing and inspections can be provided. If necessary, work may be stopped and redone if personnel have not been scheduled in advance.
- The Earthwork Contractor is required to have suitable and sufficient equipment on the job-site to process, moisture condition, mix and compact the amount of fill being placed to the approved compaction. In addition, suitable support equipment should be available to conform with recommendations and guidelines in this report.
- Canyon cleanouts, overexcavation areas, processed ground to receive fill, key excavations, subdrains and benches should be observed by the Geotechnical Engineer prior to placement of any fill. It is the Earthwork Contractor's responsibility to notify the Geotechnical Engineer of areas that are ready for inspection.
- Excavation, filling, and subgrade preparation should be performed in a manner and sequence that will provide drainage at all times and proper control of erosion. Precipitation, springs, and seepage water encountered shall be pumped or drained to provide a suitable working surface. The Geotechnical Engineer must be informed of springs or water seepage encountered during grading or foundation construction for possible revision to the recommended construction procedures and/or installation of subdrains.

### **Site Preparation**

- The Earthwork Contractor is responsible for all clearing, grubbing, stripping and site preparation for the project in accordance with the recommendations of the Geotechnical Engineer.
- If any materials or areas are encountered by the Earthwork Contractor which are suspected of having toxic or environmentally sensitive contamination, the Geotechnical Engineer and Owner/Builder should be notified immediately.

- Major vegetation should be stripped and disposed of off-site. This includes trees, brush, heavy grasses and any materials considered unsuitable by the Geotechnical Engineer.
- Underground structures such as basements, cesspools or septic disposal systems, mining shafts, tunnels, wells and pipelines should be removed under the inspection of the Geotechnical Engineer and recommendations provided by the Geotechnical Engineer and/or city, county or state agencies. If such structures are known or found, the Geotechnical Engineer should be notified as soon as possible so that recommendations can be formulated.
- Any topsoil, slopewash, colluvium, alluvium and rock materials which are considered unsuitable by the Geotechnical Engineer should be removed prior to fill placement.
- Remaining voids created during site clearing caused by removal of trees, foundations basements, irrigation facilities, etc., should be excavated and filled with compacted fill.
- Subsequent to clearing and removals, areas to receive fill should be scarified to a depth of 10 to 12 inches, moisture conditioned and compacted
- The moisture condition of the processed ground should be at or slightly above the optimum moisture content as determined by the Geotechnical Engineer. Depending upon field conditions, this may require air drying or watering together with mixing and/or discing.

#### Compacted Fills

- Soil materials imported to or excavated on the property may be utilized in the fill, provided each material has been determined to be suitable in the opinion of the Geotechnical Engineer. Unless otherwise approved by the Geotechnical Engineer, all fill materials shall be free of deleterious, organic, or frozen matter, shall contain no chemicals that may result in the material being classified as "contaminated," and shall be very low to non-expansive with a maximum expansion index (EI) of 50. The top 12 inches of the compacted fill should have a maximum particle size of 3 inches, and all underlying compacted fill material a maximum 6-inch particle size, except as noted below.
- All soils should be evaluated and tested by the Geotechnical Engineer. Materials with high expansion potential, low strength, poor gradation or containing organic materials may require removal from the site or selective placement and/or mixing to the satisfaction of the Geotechnical Engineer.
- Rock fragments or rocks less than 6 inches in their largest dimensions, or as otherwise determined by the Geotechnical Engineer, may be used in compacted fill, provided the distribution and placement is satisfactory in the opinion of the Geotechnical Engineer.
- Rock fragments or rocks greater than 12 inches should be taken off-site or placed in accordance with recommendations and in areas designated as suitable by the Geotechnical Engineer. These materials should be placed in accordance with Plate D-8 of these Grading Guide Specifications and in accordance with the following recommendations:
  - Rocks 12 inches or more in diameter should be placed in rows at least 15 feet apart, 15 feet from the edge of the fill, and 10 feet or more below subgrade. Spaces should be left between each rock fragment to provide for placement and compaction of soil around the fragments.
  - Fill materials consisting of soil meeting the minimum moisture content requirements and free of oversize material should be placed between and over the rows of rock or



concrete. Ample water and compactive effort should be applied to the fill materials as they are placed in order that all of the voids between each of the fragments are filled and compacted to the specified density.

- Subsequent rows of rocks should be placed such that they are not directly above a row placed in the previous lift of fill. A minimum 5-foot offset between rows is recommended.
- To facilitate future trenching, oversized material should not be placed within the range of foundation excavations, future utilities or other underground construction unless specifically approved by the soil engineer and the developer/owner representative.
- Fill materials approved by the Geotechnical Engineer should be placed in areas previously prepared to receive fill and in evenly placed, near horizontal layers at about 6 to 8 inches in loose thickness, or as otherwise determined by the Geotechnical Engineer for the project.
- Each layer should be moisture conditioned to optimum moisture content, or slightly above, as directed by the Geotechnical Engineer. After proper mixing and/or drying, to evenly distribute the moisture, the layers should be compacted to at least 90 percent of the maximum dry density in compliance with ASTM D-1557-78 unless otherwise indicated.
- Density and moisture content testing should be performed by the Geotechnical Engineer at random intervals and locations as determined by the Geotechnical Engineer. These tests are intended as an aid to the Earthwork Contractor, so he can evaluate his workmanship, equipment effectiveness and site conditions. The Earthwork Contractor is responsible for compaction as required by the Geotechnical Report(s) and governmental agencies.
- Fill areas unused for a period of time may require moisture conditioning, processing and recompaction prior to the start of additional filling. The Earthwork Contractor should notify the Geotechnical Engineer of his intent so that an evaluation can be made.
- Fill placed on ground sloping at a 5-to-1 inclination (horizontal-to-vertical) or steeper should be benched into bedrock or other suitable materials, as directed by the Geotechnical Engineer. Typical details of benching are illustrated on Plates D-2, D-4, and D-5.
- Cut/fill transition lots should have the cut portion overexcavated to a depth of at least 3 feet and rebuilt with fill (see Plate D-1), as determined by the Geotechnical Engineer.
- All cut lots should be inspected by the Geotechnical Engineer for fracturing and other bedrock conditions. If necessary, the pads should be overexcavated to a depth of 3 feet and rebuilt with a uniform, more cohesive soil type to impede moisture penetration.
- Cut portions of pad areas above buttresses or stabilizations should be overexcavated to a depth of 3 feet and rebuilt with uniform, more cohesive compacted fill to impede moisture penetration.
- Non-structural fill adjacent to structural fill should typically be placed in unison to provide lateral support. Backfill along walls must be placed and compacted with care to ensure that excessive unbalanced lateral pressures do not develop. The type of fill material placed adjacent to below grade walls must be properly tested and approved by the Geotechnical Engineer with consideration of the lateral earth pressure used in the design.

### Foundations

- The foundation influence zone is defined as extending one foot horizontally from the outside edge of a footing, and proceeding downward at a ½ horizontal to 1 vertical (0.5:1) inclination.
- Where overexcavation beneath a footing subgrade is necessary, it should be conducted so as to encompass the entire foundation influence zone, as described above.
- Compacted fill adjacent to exterior footings should extend at least 12 inches above foundation bearing grade. Compacted fill within the interior of structures should extend to the floor subgrade elevation.

### Fill Slopes

- The placement and compaction of fill described above applies to all fill slopes. Slope compaction should be accomplished by overfilling the slope, adequately compacting the fill in even layers, including the overfilled zone and cutting the slope back to expose the compacted core
- Slope compaction may also be achieved by backrolling the slope adequately every 2 to 4 vertical feet during the filling process as well as requiring the earth moving and compaction equipment to work close to the top of the slope. Upon completion of slope construction, the slope face should be compacted with a sheepsfoot connected to a sideboom and then grid rolled. This method of slope compaction should only be used if approved by the Geotechnical Engineer.
- Sandy soils lacking in adequate cohesion may be unstable for a finished slope condition and therefore should not be placed within 15 horizontal feet of the slope face.
- All fill slopes should be keyed into bedrock or other suitable material. Fill keys should be at least 15 feet wide and inclined at 2 percent into the slope. For slopes higher than 30 feet, the fill key width should be equal to one-half the height of the slope (see Plate D-5).
- All fill keys should be cleared of loose slough material prior to geotechnical inspection and should be approved by the Geotechnical Engineer and governmental agencies prior to filling.
- The cut portion of fill over cut slopes should be made first and inspected by the Geotechnical Engineer for possible stabilization requirements. The fill portion should be adequately keyed through all surficial soils and into bedrock or suitable material. Soils should be removed from the transition zone between the cut and fill portions (see Plate D-2).

### Cut Slopes

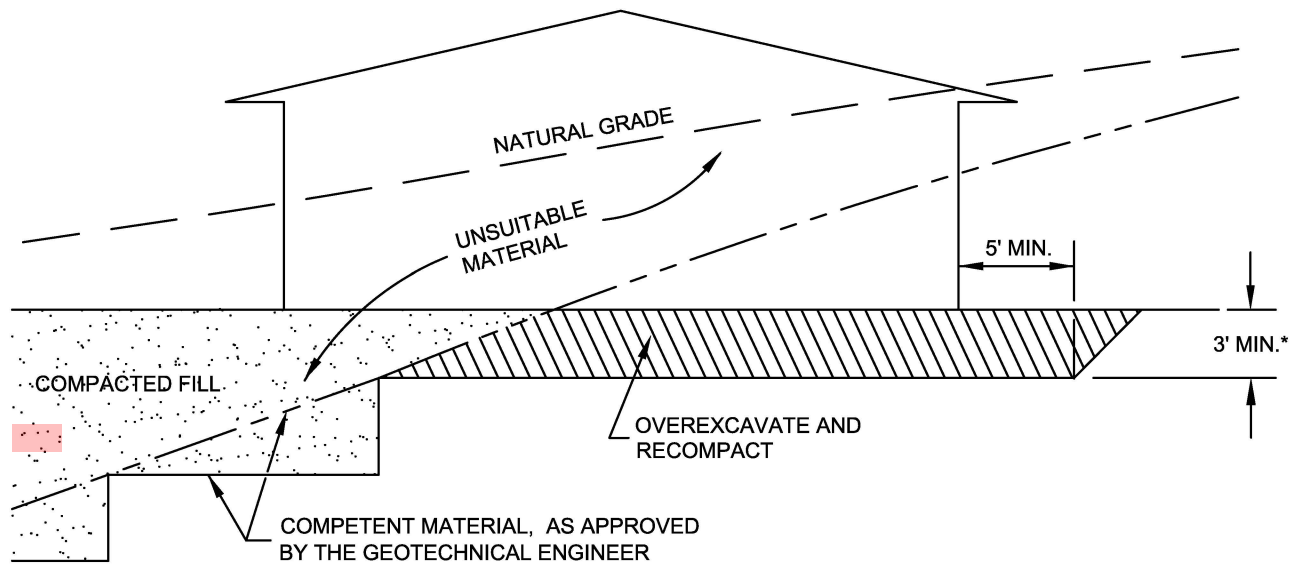
- All cut slopes should be inspected by the Geotechnical Engineer to determine the need for stabilization. The Earthwork Contractor should notify the Geotechnical Engineer when slope cutting is in progress at intervals of 10 vertical feet. Failure to notify may result in a delay in recommendations.
- Cut slopes exposing loose, cohesionless sands should be reported to the Geotechnical Engineer for possible stabilization recommendations.
- All stabilization excavations should be cleared of loose slough material prior to geotechnical inspection. Stakes should be provided by the Civil Engineer to verify the location and dimensions of the key. A typical stabilization fill detail is shown on Plate D-5.

- Stabilization key excavations should be provided with subdrains. Typical subdrain details are shown on Plates D-6.

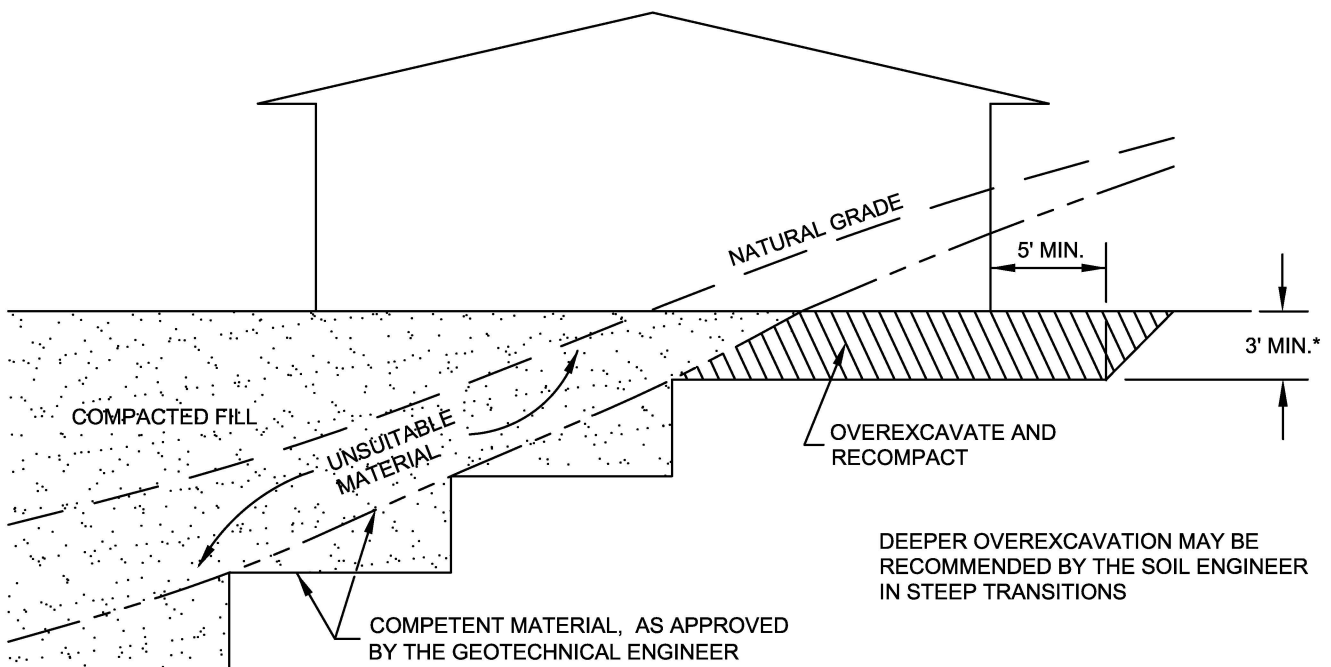
#### Subdrains

- Subdrains may be required in canyons and swales where fill placement is proposed. Typical subdrain details for canyons are shown on Plate D-3. Subdrains should be installed after approval of removals and before filling, as determined by the Soils Engineer.
- Plastic pipe may be used for subdrains provided it is Schedule 40 or SDR 35 or equivalent. Pipe should be protected against breakage, typically by placement in a square-cut (backhoe) trench or as recommended by the manufacturer.
- Filter material for subdrains should conform to CALTRANS Specification 68-1.025 or as approved by the Geotechnical Engineer for the specific site conditions. Clean  $\frac{3}{4}$ -inch crushed rock may be used provided it is wrapped in an acceptable filter cloth and approved by the Geotechnical Engineer. Pipe diameters should be 6 inches for runs up to 500 feet and 8 inches for the downstream continuations of longer runs. Four-inch diameter pipe may be used in buttress and stabilization fills.

## CUT LOT



## CUT/FILL LOT (TRANSITION)



\*SEE TEXT OF REPORT FOR SPECIFIC RECOMMENDATION.  
ACTUAL DEPTH OF OVEREXCAVATION MAY BE GREATER.

### TRANSITION LOT DETAIL

### GRADING GUIDE SPECIFICATIONS

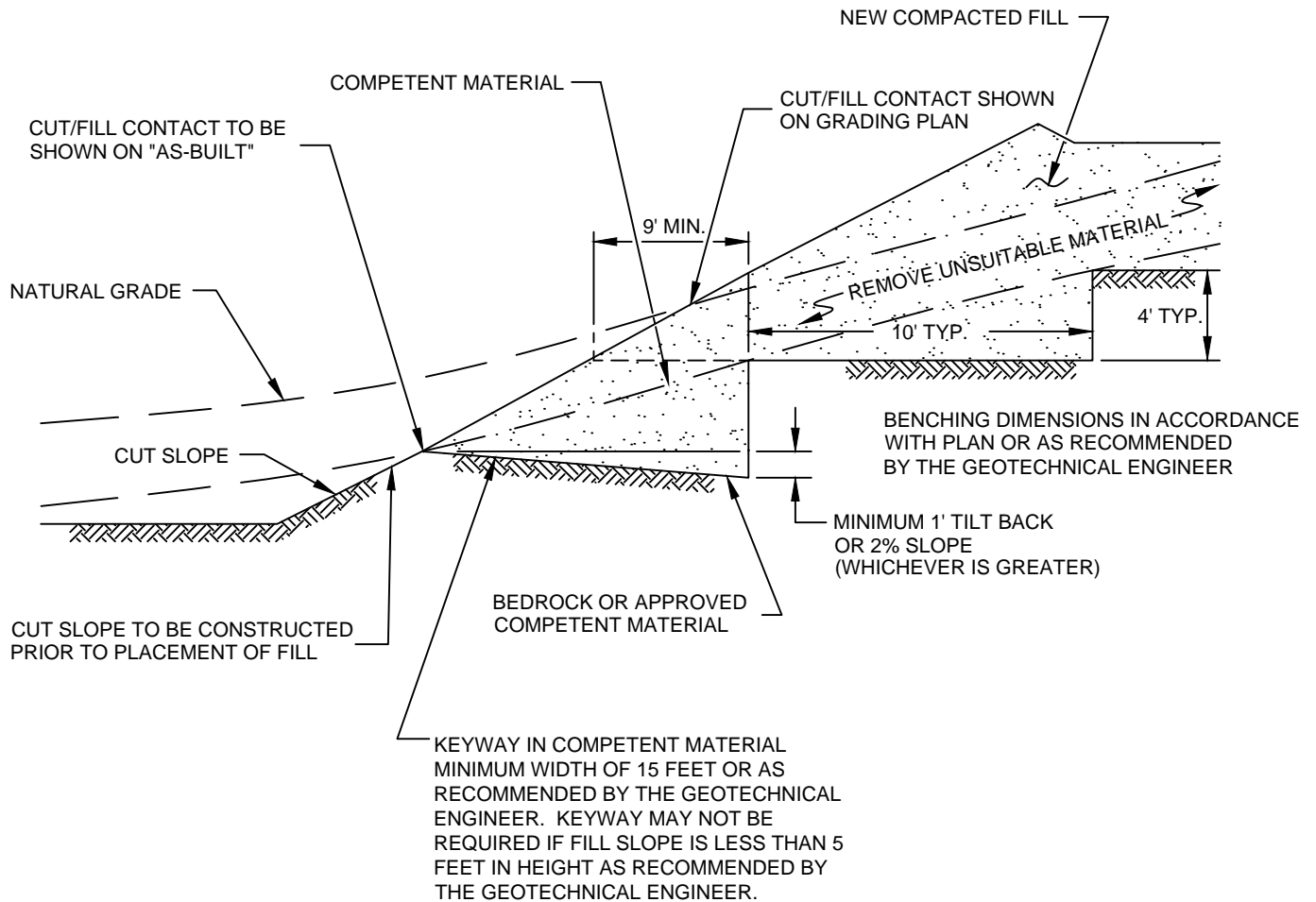
NOT TO SCALE

DRAWN: JAS  
CHKD: GKM

PLATE D-1



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**FILL ABOVE CUT SLOPE DETAIL**  
**GRADING GUIDE SPECIFICATIONS**

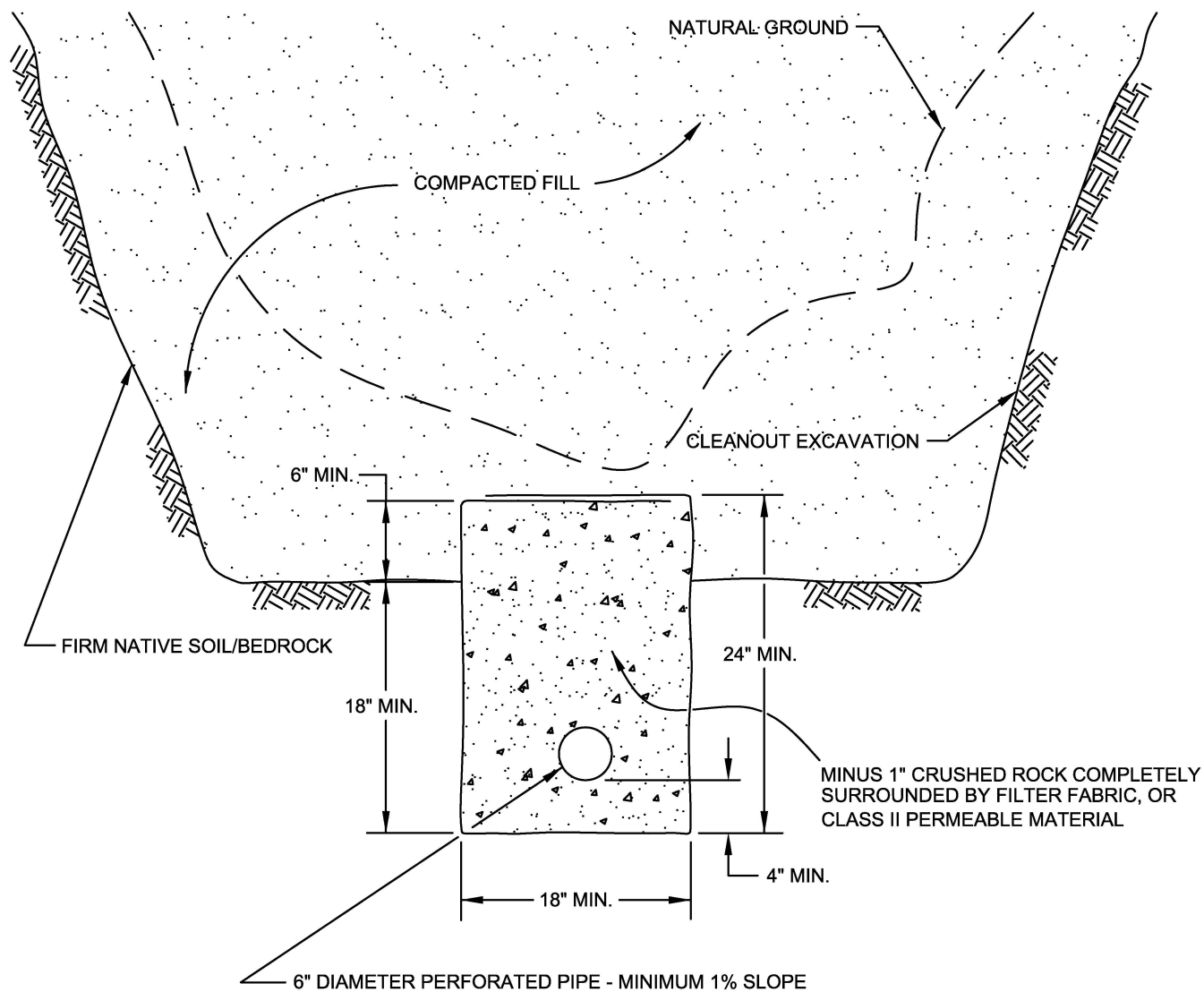
NOT TO SCALE

DRAWN: JAS  
 CHKD: GKM

PLATE D-2



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PIPE MATERIAL
ADS (CORRUGATED POLETHYLENE)
TRANSITE UNDERDRAIN
PVC OR ABS: SDR 35
SDR 21

DEPTH OF FILL OVER SUBDRAIN
8
20
35
100

**SCHEMATIC ONLY  
NOT TO SCALE**

### CANYON SUBDRAIN DETAIL GRADING GUIDE SPECIFICATIONS

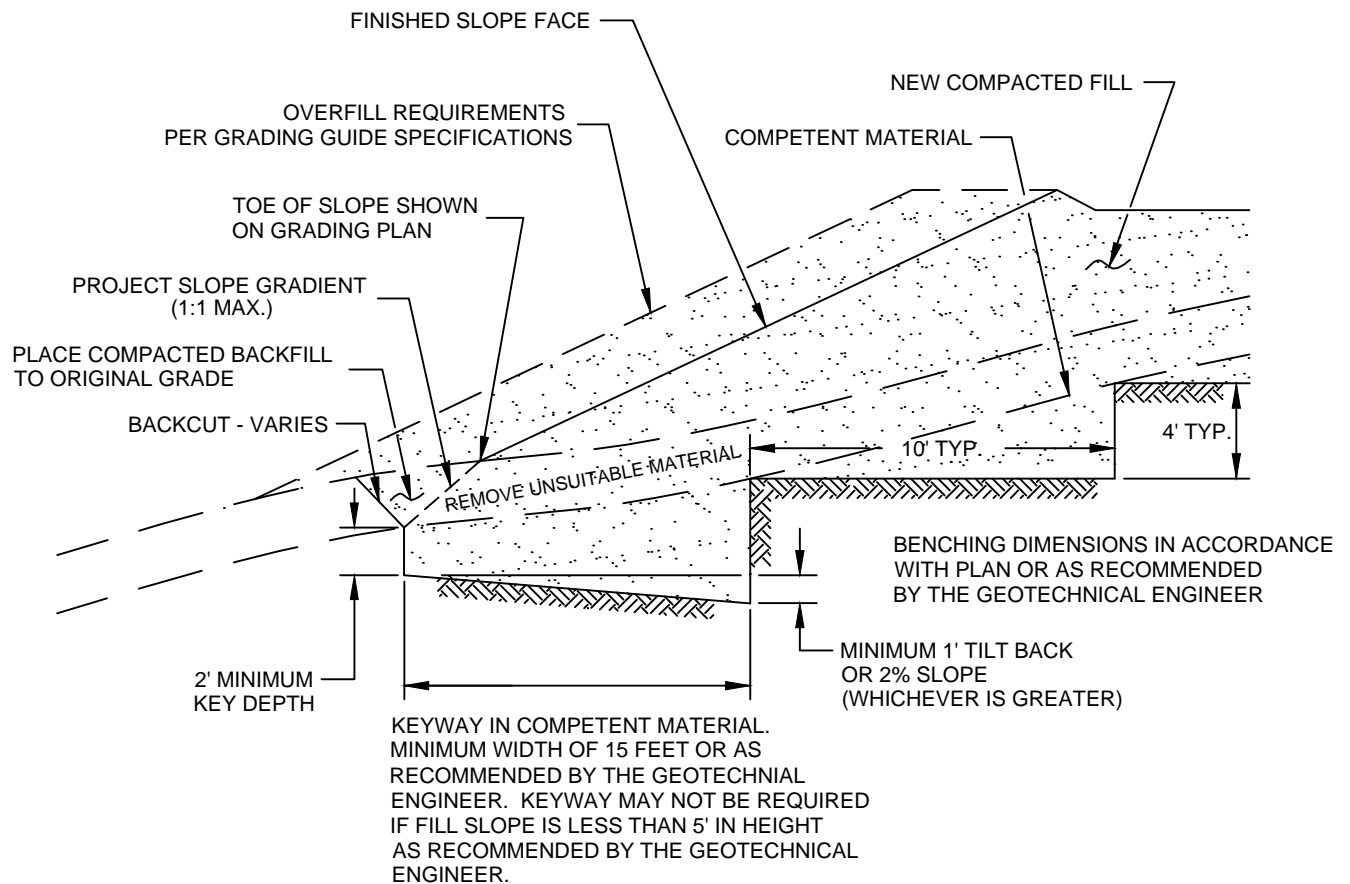
NOT TO SCALE

DRAWN: JAS  
CHKD: GKM

PLATE D-3



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NOTE:  
BENCHING SHALL BE REQUIRED  
WHEN NATURAL SLOPES ARE  
EQUAL TO OR STEEPER THAN 5:1  
OR WHEN RECOMMENDED BY  
THE GEOTECHNICAL ENGINEER.

# FILL ABOVE NATURAL SLOPE DETAIL GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

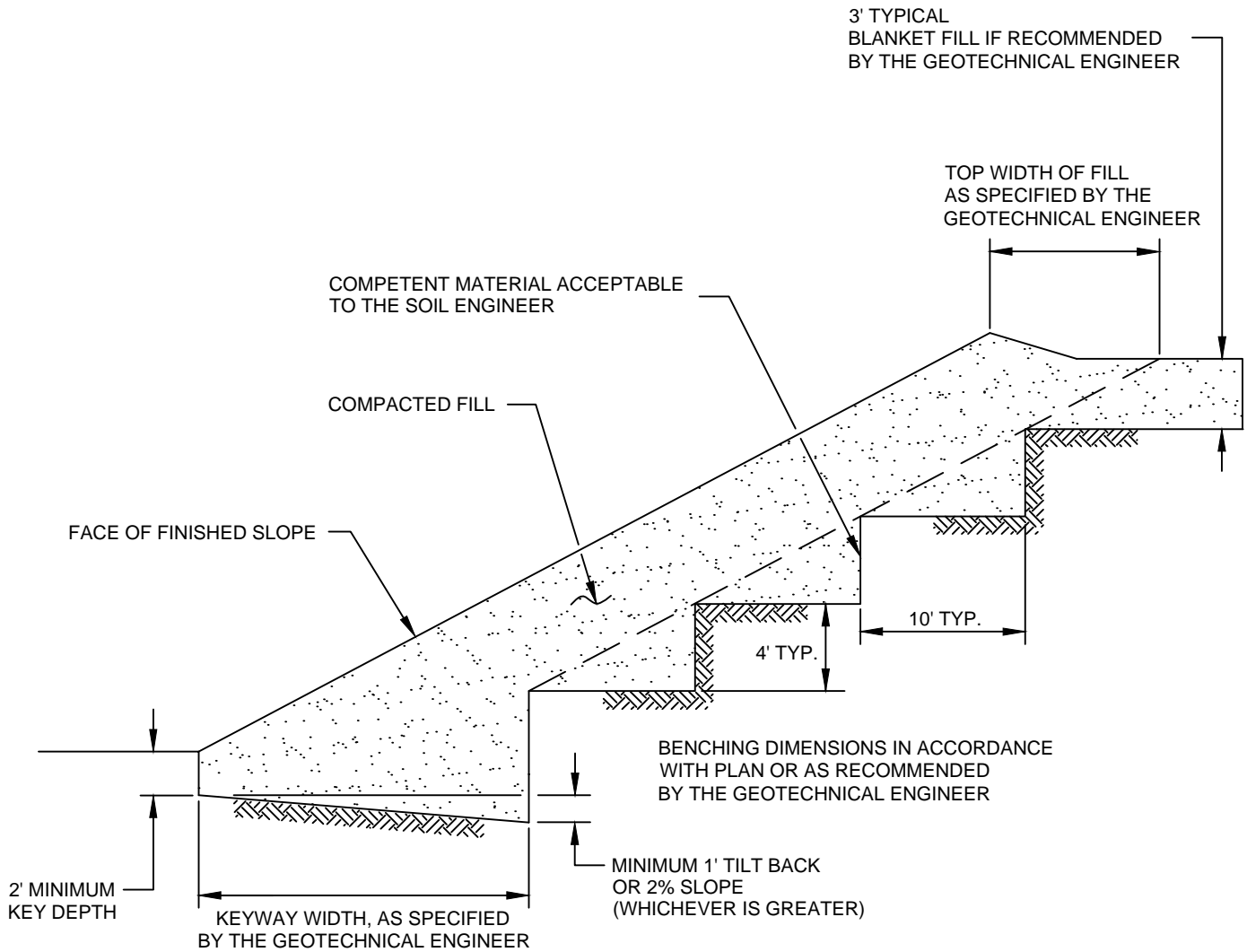
DRAWN: JAS  
CHKD: GKM


PLATE D-4

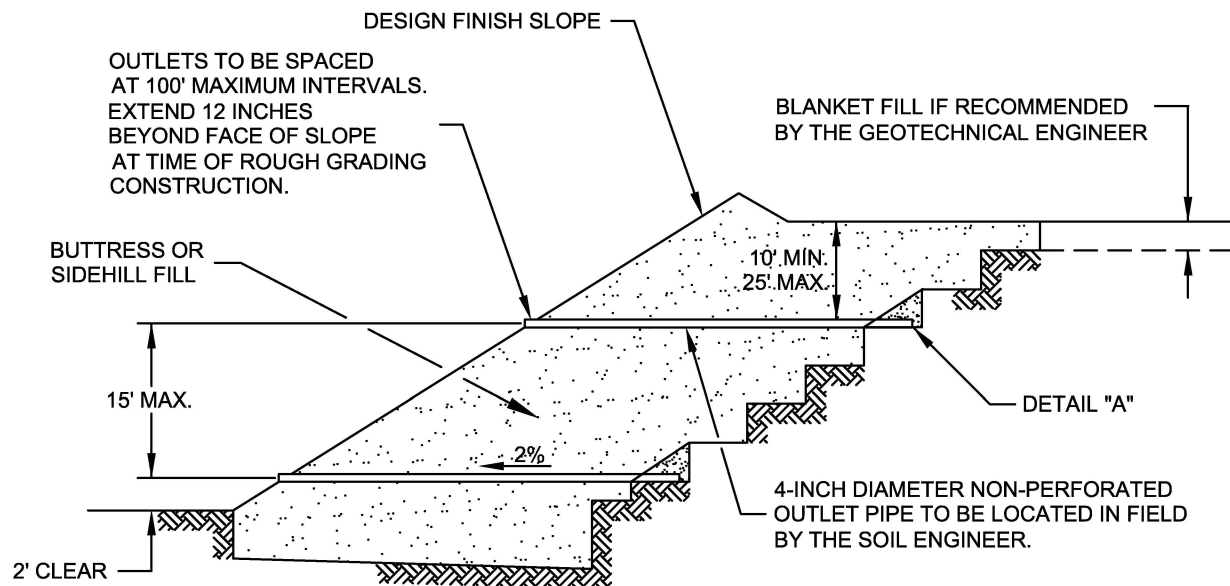


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STABILIZATION FILL DETAIL	
GRADING GUIDE SPECIFICATIONS	
NOT TO SCALE	 <b>SOUTHERN CALIFORNIA GEOTECHNICAL</b>
DRAWN: JAS CHKD: GKM	
PLATE D-5	



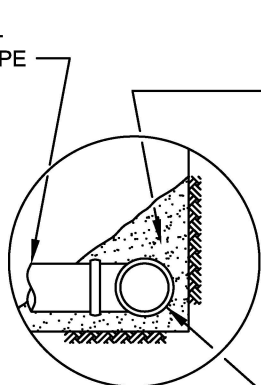
"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8
SAND EQUIVALENT = MINIMUM OF 50	

OUTLET PIPE TO BE CONNECTED TO SUBDRAIN PIPE WITH TEE OR ELBOW



DETAIL "A"

FILTER MATERIAL - MINIMUM OF FIVE CUBIC FEET PER FOOT OF PIPE. SEE ABOVE FOR FILTER MATERIAL SPECIFICATION.


ALTERNATIVE: IN LIEU OF FILTER MATERIAL FIVE CUBIC FEET OF GRAVEL PER FOOT OF PIPE MAY BE ENCASED IN FILTER FABRIC. SEE ABOVE FOR GRAVEL SPECIFICATION.

FILTER FABRIC SHALL BE MIRAFI 140 OR EQUIVALENT. FILTER FABRIC SHALL BE LAPPED A MINIMUM OF 12 INCHES ON ALL JOINTS.

MINIMUM 4-INCH DIAMETER PVC SCH 40 OR ABS CLASS SDR 35 WITH A CRUSHING STRENGTH OF AT LEAST 1,000 POUNDS, WITH A MINIMUM OF 8 UNIFORMLY SPACED PERFORATIONS PER FOOT OF PIPE INSTALLED WITH PERFORATIONS ON BOTTOM OF PIPE. PROVIDE CAP AT UPSTREAM END OF PIPE. SLOPE AT 2 PERCENT TO OUTLET PIPE.

**NOTES:**

1. TRENCH FOR OUTLET PIPES TO BE BACKFILLED WITH ON-SITE SOIL.

SLOPE FILL SUBDRAINS	
GRADING GUIDE SPECIFICATIONS	
NOT TO SCALE	 <b>SOUTHERN CALIFORNIA GEOTECHNICAL</b>
DRAWN: JAS CHKD: GKM	
PLATE D-6	

MINIMUM ONE FOOT THICK LAYER OF  
LOW PERMEABILITY SOIL IF NOT  
COVERED WITH AN IMPERMEABLE SURFACE

MINIMUM ONE FOOT WIDE LAYER OF  
FREE DRAINING MATERIAL  
(LESS THAN 5% PASSING THE #200 SIEVE)

OR  
PROPERLY INSTALLED PREFABRICATED DRAINAGE COMPOSITE  
(MiraDRAIN 6000 OR APPROVED EQUIVALENT).

FILTER MATERIAL - MINIMUM OF TWO  
CUBIC FEET PER FOOT OF PIPE. SEE  
BELOW FOR FILTER MATERIAL SPECIFICATION.

ALTERNATIVE: IN LIEU OF FILTER MATERIAL  
TWO CUBIC FEET OF GRAVEL  
PER FOOT OF PIPE MAY BE ENCASED  
IN FILTER FABRIC. SEE BELOW FOR  
GRAVEL SPECIFICATION.

FILTER FABRIC SHALL BE MIRAFL 140  
OR EQUIVALENT. FILTER FABRIC SHALL  
BE LAPPED A MINIMUM OF 6 INCHES  
ON ALL JOINTS.

MINIMUM 4-INCH DIAMETER PVC SCH 40 OR ABS CLASS SDR 35 WITH  
A CRUSHING STRENGTH OF AT LEAST 1,000 POUNDS, WITH A MINIMUM  
OF 8 UNIFORMLY SPACED PERFORATIONS PER FOOT OF PIPE INSTALLED  
WITH PERFORATIONS ON BOTTOM OF PIPE. PROVIDE CAP AT UPSTREAM  
END OF PIPE. SLOPE AT 2 PERCENT TO OUTLET PIPE.

"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION  
OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR  
APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8
SAND EQUIVALENT = MINIMUM OF 50	

### RETAINING WALL BACKDRAINS GRADING GUIDE SPECIFICATIONS

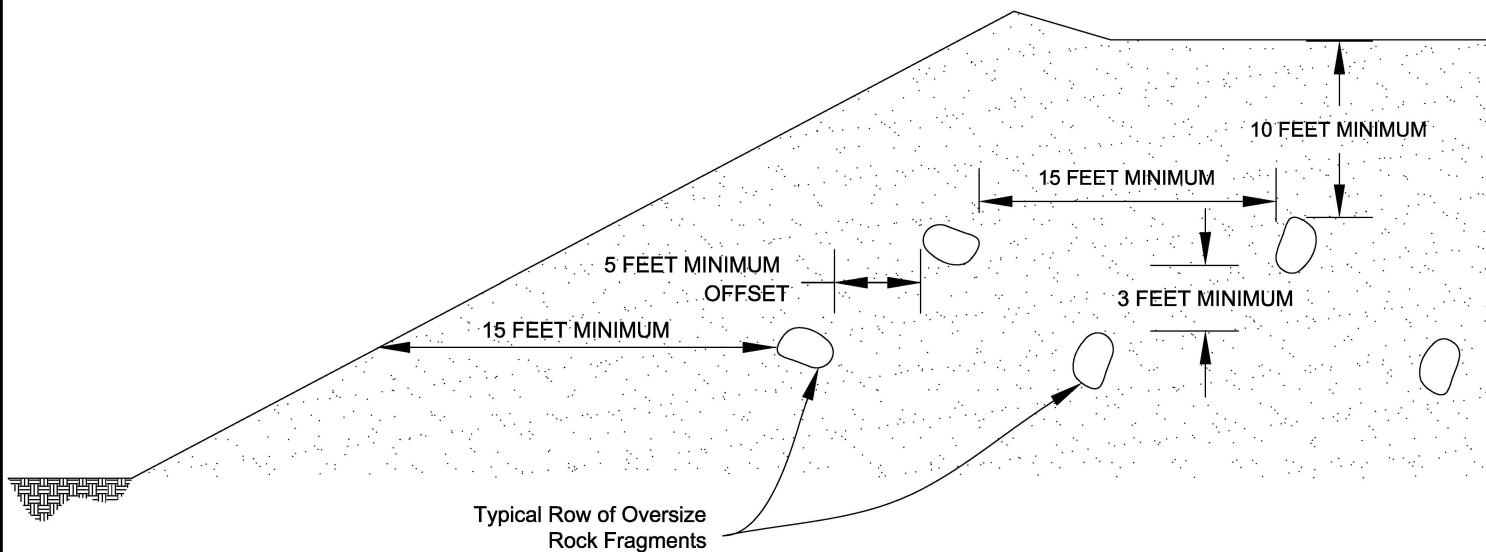
NOT TO SCALE

DRAWN: JAS  
CHKD: GKM

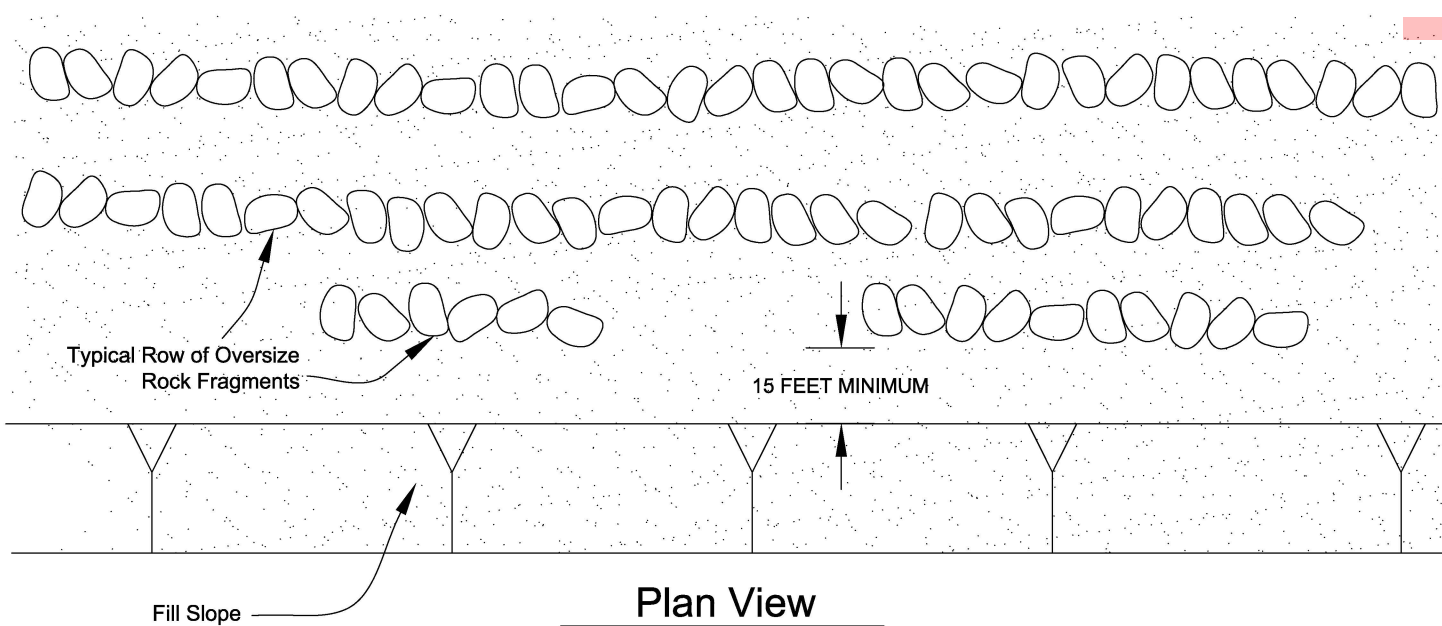
PLATE D-7



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**Section View**



**Plan View**

**PLACEMENT OF OVERSIZED MATERIAL  
GRADING GUIDE SPECIFICATIONS**

NOT TO SCALE

DRAWN: PM  
CHKD: GKM

PLATE D-8

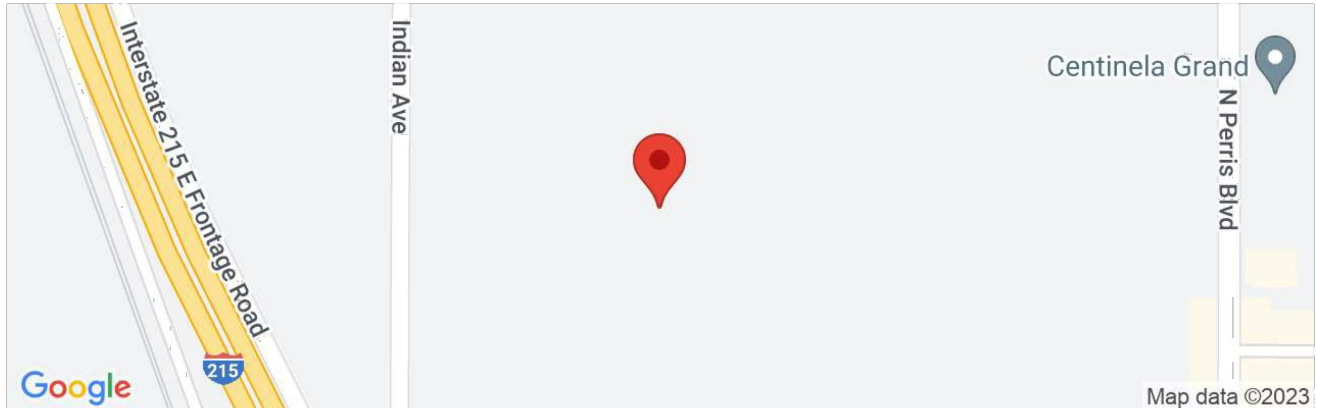


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CALIFORNIA  
GEOTECHNICAL**

# APPENDIX



Latitude, Longitude: 33.81149, -117.232091



Date	9/18/2023, 4:12:29 PM
Design Code Reference Document	ASCE7-16
Risk Category	II
Site Class	D - Stiff Soil

Type	Value	Description
$S_S$	1.483	$MCE_R$ ground motion. (for 0.2 second period)
$S_1$	0.551	$MCE_R$ ground motion. (for 1.0s period)
$S_{MS}$	1.483	Site-modified spectral acceleration value
$S_{M1}$	null -See Section 11.4.8	Site-modified spectral acceleration value
$S_{DS}$	0.989	Numeric seismic design value at 0.2 second SA
$S_{D1}$	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
$F_a$	1	Site amplification factor at 0.2 second
$F_v$	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.5	$MCE_G$ peak ground acceleration
$F_{PGA}$	1.1	Site amplification factor at PGA
$PGA_M$	0.55	Site modified peak ground acceleration
$T_L$	8	Long-period transition period in seconds
$S_{sRT}$	1.483	Probabilistic risk-targeted ground motion. (0.2 second)
$S_{sUH}$	1.584	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
$S_{sD}$	1.5	Factored deterministic acceleration value. (0.2 second)
$S_{1RT}$	0.551	Probabilistic risk-targeted ground motion. (1.0 second)
$S_{1UH}$	0.601	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
$S_{1D}$	0.6	Factored deterministic acceleration value. (1.0 second)
$PGAd$	0.5	Factored deterministic acceleration value. (Peak Ground Acceleration)
$PGA_{UH}$	0.625	Uniform-hazard (2% probability of exceedance in 50 years) Peak Ground Acceleration
$C_{RS}$	0.936	Mapped value of the risk coefficient at short periods

SOURCE: SEAOC/OSHDP Seismic Design Maps Tool  
<<https://seismicmaps.org/>>



**SEISMIC DESIGN PARAMETERS - 2022 CBC**  
**HARVEST LANDING INDUSTRIAL DEVELOPMENT**  
**PERRIS, CALIFORNIA**

DRAWN: JAH  
CHKD: RGT

SCG PROJECT  
22G183-3

PLATE E-1



**SOUTHERN  
CALIFORNIA  
GEOTECHNICAL**

# APPENDIX






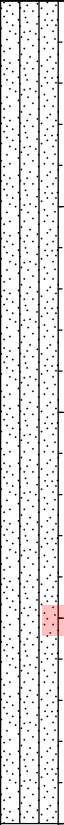





JOB NO.: 22G183-1	DRILLING DATE: 4/29/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 24 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION:   MSL												
5		37			<u>ALLUVIUM</u> : Brown Silty fine to medium Sand, trace Clay, little calcareous nodules, slightly porous, medium dense to dense-damp	115	5					
		55				122	5					
		48				120	6					
		36				120	5					
		46				126	7					
10												
15		46			Brown Silty fine Sand, trace medium to coarse Sand, trace calcareous nodules, dense-damp to moist		10					
20		30					9					
25		36					8					
Boring Terminated at 25'												

TBL 22G183-1.GPJ SOCALGEO.GDT 6/15/22



JOB NO.: 22G183-1	DRILLING DATE: 4/29/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 18 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION:   MSL												
5		11			<p>ALLUVIUM: Brown Silty fine to medium Sand, trace Clay, trace coarse Sand, little calcareous nodules, medium dense-damp</p> <p>@ 13½ to 20 feet, dense-moist</p>		3				EI = 7 @ 0-5'	
		19					5					
		22					5					
		28					6					
	10											
		58			9							
15												
20		43										
Boring Terminated at 20'												

TBL 22G183-1.GPJ SoCalGeo.GDT 6/15/22



JOB NO.: 22G183-1			DRILLING DATE: 4/29/22			WATER DEPTH: Dry						
PROJECT: Harvest Landing Industrial Development			DRILLING METHOD: Hollow Stem Auger			CAVE DEPTH: 14 feet						
LOCATION: Perris, California			LOGGED BY: Joey Hernandez			READING TAKEN: At Completion						
FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5		8			ALLUVIUM: Brown Silty fine Sand, trace Clay, trace coarse Sand, little calcareous nodules, loose-damp		5					
		10			Brown fine to medium Sandy Silt, trace Clay, trace coarse Sand, little calcareous nodules, medium dense-damp		5					
		21			Dark Brown Silty fine to medium Sand, trace Clay, trace coarse Sand, little calcareous nodules, medium dense-damp to moist		5					
		24					6					
10												
		55			@13½ feet, very dense		11					
15					Boring Terminated at 15'							

TBL 22G183-1.GPJ SOCALGEO.GDT 6/15/22



JOB NO.: 22G183-1	DRILLING DATE: 4/29/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 13 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS					LABORATORY RESULTS							COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: MSL							
					ALLUVIUM: Brown fine to medium Sandy Silt, trace calcareous nodules, medium dense-damp	117	2					
					Brown Silty fine to medium Sand, trace coarse Sand, little calcareous nodules, dense-damp	119	4					
5		36				115	4					
		60				121	5					
		57			@ 7 feet, trace fine root fibers	114	4					
10		54										
		50										
		49			Brown fine Sandy Silt, trace to little medium to coarse Sand, dense-moist		10					
15					Boring Terminated at 15'							

TBL 22G183-1.GPJ SOCALGEO.GDT 6/15/22



JOB NO.: 22G183-1	DRILLING DATE: 4/29/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 22 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: MSL							
		32			<u>ALLUVIUM</u> : Brown Silty fine to medium Sand, trace Clay, trace coarse Sand, little calcareous nodules, medium dense to dense-damp	116	5					
		42				122	5					
5		57				128	6					
		55				115	8					
10		62				129	7					
					Brown fine Sandy Silt, trace Clay, little medium Sand, trace calcareous nodules, medium dense-damp							
15		21					7					
20		16					9					
25		29					9					
					Boring Terminated at 25'							

TBL 22G183-1.GPJ SOCALGEO.GDT 6/15/22




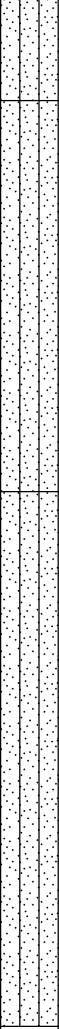







JOB NO.: 22G183-1	DRILLING DATE: 4/29/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 18 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: MSL							
5		20			<u>ALLUVIUM</u> : Brown fine to medium Sandy Silt, trace Clay, trace coarse Sand, little calcareous nodules, medium dense to dense-damp		4					
		57					4					
		37					5					
		18					5					
10					Brown fine Sandy Silt, trace Clay, little medium to coarse Sand, little calcareous nodules, dense-moist							
15		44					11					
20		36					11					
					Boring Terminated at 20'							

TBL 22G183-1.GPJ SOCALGEO.GDT 6/15/22



JOB NO.: 22G183-1	DRILLING DATE: 4/29/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 22 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion









FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS				
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)					
SURFACE ELEVATION: MSL																
5		45			<u>ALLUVIUM</u> : Brown Silty fine to medium Sand, trace coarse Sand, trace fine root fibers, dense-damp	117	4									
		58			Brown Silty fine to medium Sand, trace Clay, little coarse Sand, little calcareous nodules, medium dense to dense-damp	117	3									
		20				111	5									
		36				117	4									
		36				114	5									
15		19			Brown Silty fine Sand, trace Clay, trace medium to coarse Sand, little calcareous nodules, medium dense-damp to moist		7									
		26										10				
		26											10			
25							Boring Terminated at 25'									

TBL 22G183-1.GPJ SOCALGEO.GDT 6/15/22





JOB NO.: 22G183-1	DRILLING DATE: 4/30/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 12 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS					GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	DRY DENSITY (PCF)			MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)		
SURFACE ELEVATION:   MSL													
5		20			<u>ALLUVIUM</u> : Brown fine to medium Sandy Silt, trace to little Clay, little Calcareous nodules, slightly cemented, medium dense to dense-damp to moist  @ 6 to 7½ feet, very dense		4						
		39					5						
		65					5						
		23					10						
		28					8						
15													
20		26					12						
						Boring Terminated at 20'							

TBL 22G183-1.GPJ SOCALGEO.GDT 6/15/22



JOB NO.: 22G183-1	DRILLING DATE: 4/28/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 13 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS					LABORATORY RESULTS							COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: MSL							EI = 8 @ 0 to 5 feet
5		65	4.5		ALLUVIUM: Brown fine Sandy Silt, trace calcareous nodules, dense-damp	123	4					
		41			Brown fine to medium Sandy Clay, some Silt, slightly cemented, very stiff-damp	117	5					
		32			Dark Brown fine to medium Sandy Silt, trace Clay, little coarse Sand, little calcareous nodules, medium dense-damp	116	5					
		33				123	6					
		48			@ 9 feet, little Clay	117	3					
10												
15		33			Dark Brown fine Sandy Silt, trace to little medium to coarse Sand, little Calcareous nodules, medium dense-damp	122	7					
					Boring Terminated at 15'							

TBL 22G183-1.GPJ SOCALGEO.GDT 6/15/22













JOB NO.: 22G183-1	DRILLING DATE: 4/28/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 21 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS					LABORATORY RESULTS							COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: MSL							
	X	58			<u>ALLUVIUM</u> : Dark Brown fine Sandy Silt to Silty fine Sand, trace medium to coarse Sand, little calcareous nodules, slightly porous, trace fine root fibers, dense-damp	116	4					
	X	50/5"				110	4					
5	X	67				121	6					
	X	60				118	6					
10	X	66				125	8					
15	X	29					8					
20	X	36					8					
25	X	17			Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp		3					
					Boring Terminated at 25'							

TBL 22G183-1.GPJ SOCALGEO.GDT 6/15/22



JOB NO.: 22G183-1			DRILLING DATE: 4/28/22			WATER DEPTH: Dry					
PROJECT: Harvest Landing Industrial Development			DRILLING METHOD: Hollow Stem Auger			CAVE DEPTH: 17 feet					
LOCATION: Perris, California			LOGGED BY: Joey Hernandez			READING TAKEN: At Completion					
FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS					COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	
5		5			<u>ALLUVIUM:</u> Dark Brown fine Sandy Silt, trace Clay, trace medium to coarse Sand, loose-damp		7				
		5			@ 3½ to 7½ feet, trace to little calcareous nodules		7				
		33			@ 6 feet, dense		7				
10		47			Brown fine Sandy Silt, trace Clay, trace medium to coarse Sand, trace calcareous nodules, slightly cemented, medium dense to dense-moist		11				
		22					9				
15											
		14			Brown fine to medium Sandy Silt, trace coarse Sand, little calcareous nodules, medium dense-damp		8				
20											
					Boring Terminated at 20'						

TBL 22G183-1.GPJ SOCALGEO.GDT 6/15/22












JOB NO.: 22G183-1	DRILLING DATE: 4/30/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 17 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS					LABORATORY RESULTS							COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: MSL							El = 18 @ 0 to 5 feet
					ALLUVIUM: Brown Silty fine to medium Sand, trace Clay, trace coarse Sand, trace calcareous nodules, dense to very dense-damp	123	3					
						119	4					
5		30/11"			Brown fine Sandy Silt, trace Clay, trace medium to coarse Sand, trace calcareous nodules, medium dense to very dense-damp	123	3					
						123	5					
10		72/11"				114	5					
15		26					8					
20		27					6					
					Boring Terminated at 20'							

TBL 22G183-1.GPJ SOCALGEO.GDT 6/15/22



JOB NO.: 22G183-1	DRILLING DATE: 4/28/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 17 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: MSL												
5		24			ALLUVIUM: Brown fine Sandy Silt, trace medium to coarse Sand, little calcareous nodules, medium dense-damp		4					
		27			@ 3½ feet, trace fine root fibers		4					
		69			Gray Brown Silty fine Sand to fine Sandy Silt, very dense-damp		4					
		50/5"			Brown Silty fine to medium Sand, slightly cemented, very dense-to moist		9					
												
10					Brown fine Sandy Silt, trace medium Sand, medium dense to dense-damp to moist		9					
15		24										
20		30					7					
Boring Terminated at 20'												

TBL 22G183-1.GPJ SOCALGEO.GDT 6/15/22



JOB NO.: 22G183-1	DRILLING DATE: 4/28/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 12 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: MSL							
5		21			<u>ALLUVIUM</u> : Brown fine Sandy Silt, trace to little Clay, trace medium to coarse Sand, little calcareous nodules, slightly cemented, medium dense to dense-damp		4					
		30					5					
		38					5					
		35					6					
10												
15		32					6					
20		20					5					
20					Boring Terminated at 20'							

TBL 22G183-1.GPJ SOCALGEO.GDT 6/15/22





JOB NO.: 22G183-1	DRILLING DATE: 4/30/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 17 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS					LABORATORY RESULTS							COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: MSL							
					<u>ALLUVIUM</u> : Brown Silty fine to medium Sand, trace Clay, trace coarse Sand, dense-damp	121	5					
						117	4					
5		59				116	4					
		50				118	5					
		55			Brown fine Sandy Silt, trace Clay, trace medium to coarse Sand, trace calcareous nodules, very dense-damp							
		80			@ 9 feet, Red Brown	98	7					
10		50/5"										
					Brown fine to medium Sandy Silt, little coarse Sand, little calcareous nodules, slightly cemented, dense-damp to moist		8					
15		31										
					Brown Silty fine Sand, trace medium Sand, medium dense-damp to moist		7					
		18										
20												
					Boring Terminated at 20'							

TBL 22G183-1.GPJ SOCALGEO.GDT 6/15/22



JOB NO.: 22G183-1	DRILLING DATE: 4/28/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 8 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS					LABORATORY RESULTS							COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: MSL							
5		22			ALLUVIUM: Brown fine Sandy Silt, medium dense-damp		2					
		34			Brown fine to medium Sandy Silt, trace coarse Sand, trace calcareous nodules, dense-damp		5					
		28			Brown fine Sandy Silt, trace Clay, trace coarse Sand, trace calcareous nodules, slightly cemented, medium dense-damp to moist		6					
		29					11					
10					Boring Terminated at 10'							

TBL 22G183-1.GPJ SOCALGEO.GDT 6/15/22



JOB NO.: 22G183-1	DRILLING DATE: 4/29/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 9 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS					LABORATORY RESULTS							COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: MSL							
5		18			ALLUVIUM: Brown fine to medium Sandy Silt, trace Clay, trace coarse Sand, trace fine root fibers, little calcareous nodules, medium dense-damp		4					
		20					3					
		28			Brown fine Sandy Silt, trace Clay, trace medium to coarse Sand, little calcareous nodules, medium dense-damp		4					
		21					6					
10					Boring Terminated at 10'							

TBL 22G183-1.GPJ SOCALGEO.GDT 6/15/22










JOB NO.: 22G183-1	DRILLING DATE: 4/29/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 13 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: MSL							
5		19			<u>ALLUVIUM</u> : Brown fine Sandy Silt, trace medium to coarse Sand, little calcareous nodules, slightly cemented, medium dense-damp to moist		6					
		18					4					
		18					6					
		20					9					
10												
15		62/11"			Brown Silty fine Sand, trace medium to coarse Sand, very dense-damp		5					
					Boring Terminated at 15'							

TBL 22G183-1.GPJ SOCALGEO.GDT 6/15/22


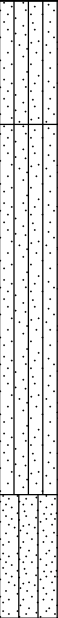







JOB NO.: 22G183-1	DRILLING DATE: 4/30/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 13 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION:   MSL							
5		25			<u>ALLUVIUM</u> : Dark Brown fine to medium Sandy Silt, trace Clay, trace coarse Sand, little calcareous nodules, medium dense to dense-damp		3					
		18					3					
		37					3					
		72					6					
10												
15		62										
					Boring Terminated at 15'							

TBL 22G183-1.GPJ SOCALGEO.GDT 6/15/22



JOB NO.: 22G183-1			DRILLING DATE: 4/28/22			WATER DEPTH: Dry						
PROJECT: Harvest Landing Industrial Development			DRILLING METHOD: Hollow Stem Auger			CAVE DEPTH: 13 feet						
LOCATION: Perris, California			LOGGED BY: Joey Hernandez			READING TAKEN: At Completion						
FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5		24			ALLUVIUM: Brown fine Sandy Silt, trace Clay, trace fine root fibers, trace medium to coarse Sand, medium dense-damp		5					
		54			Brown fine Sandy Silt, little Clay, trace calcareous nodules, slightly cemented, dense to very dense-damp to moist		4					
		68					8					
		50/5"					5					
10												
15		50/5"			Brown Silty fine to medium Sand, very dense-damp to moist		7					
					Boring Terminated at 15'							



JOB NO.: 22G183-1	DRILLING DATE: 4/28/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 12 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: MSL							
5		33			<u>ALLUVIUM</u> : Brown fine to medium Sandy Silt, trace Clay, trace calcareous nodules, slightly cemented, dense to very dense-damp to moist		4					
		31					3					
		70					7					
		72					8					
10												
15		26			Dark Brown fine to medium Sandy Silt, trace Clay, slightly cemented, medium dense-damp to moist		9					
					Boring Terminated at 15'							

TBL 22G183-1.GPJ SOCALGEO.GDT 6/15/22



JOB NO.: 22G183-1	DRILLING DATE: 4/30/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 12 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion


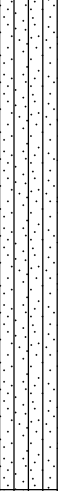





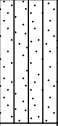
FIELD RESULTS					LABORATORY RESULTS							COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: MSL							
	X	37			<u>ALLUVIUM</u> : Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp	116	2					
	X	75			Brown fine to medium Sandy Silt, trace Clay, trace coarse Sand, slightly cemented, dense to very dense-dry to damp	121	4					
5	X	55				125	1					
	X	67				123	6					
10	X	50/5"			Brown fine Sandy Silt, little Clay, trace medium to coarse Sand, trace calcareous nodules, slightly cemented, very dense-damp	125	8					
15	X	77				127	7					
					Boring Terminated at 15'							

TBL 22G183-1.GPJ SOCALGEO.GDT 6/15/22





JOB NO.: 22G183-1	DRILLING DATE: 4/30/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 13 feet
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION:   MSL							
5		24			ALLUVIUM: Brown fine to medium Sandy Silt, trace coarse Sand, trace calcareous nodules, slightly cemented, medium dense to dense-damp		4					
		30					4					
		38					4					
		47					4					
10												
15		31			Brown fine Sandy Silt, trace medium Sand, slightly cemented, dense-damp to moist		8					
	Boring Terminated at 15'											



JOB NO.: 22G183-2	DRILLING DATE: 6/9/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: 48 feet
LOCATION: Perris, California	LOGGED BY: Michelle Esparza	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: --- MSL												
5	X	48			ALLUVIUM: Brown fine to medium Sandy Silt, trace fine root fibers, dense-dry		2					
10	X	50/5"			Brown fine Sandy Silt, trace medium Sand, dense to very dense-damp		6					
20	X	45			@ 18½', little medium Sand, trace Clay		7			57		
25					Brown Silty fine to medium Sand, medium dense to dense-damp							
30	X	20			@ 28½', trace coarse Sand		7			39		

TBL 22G183-2 (BORINGS).GPJ SOCALGEO.GDT 7/1/22



JOB NO.: 22G183-2

DRILLING DATE: 6/9/22

WATER DEPTH: Dry

PROJECT: Harvest Landing Industrial Development





DRILLING METHOD: Hollow Stem Auger

CAVE DEPTH: 48 feet

LOCATION: Perris, California

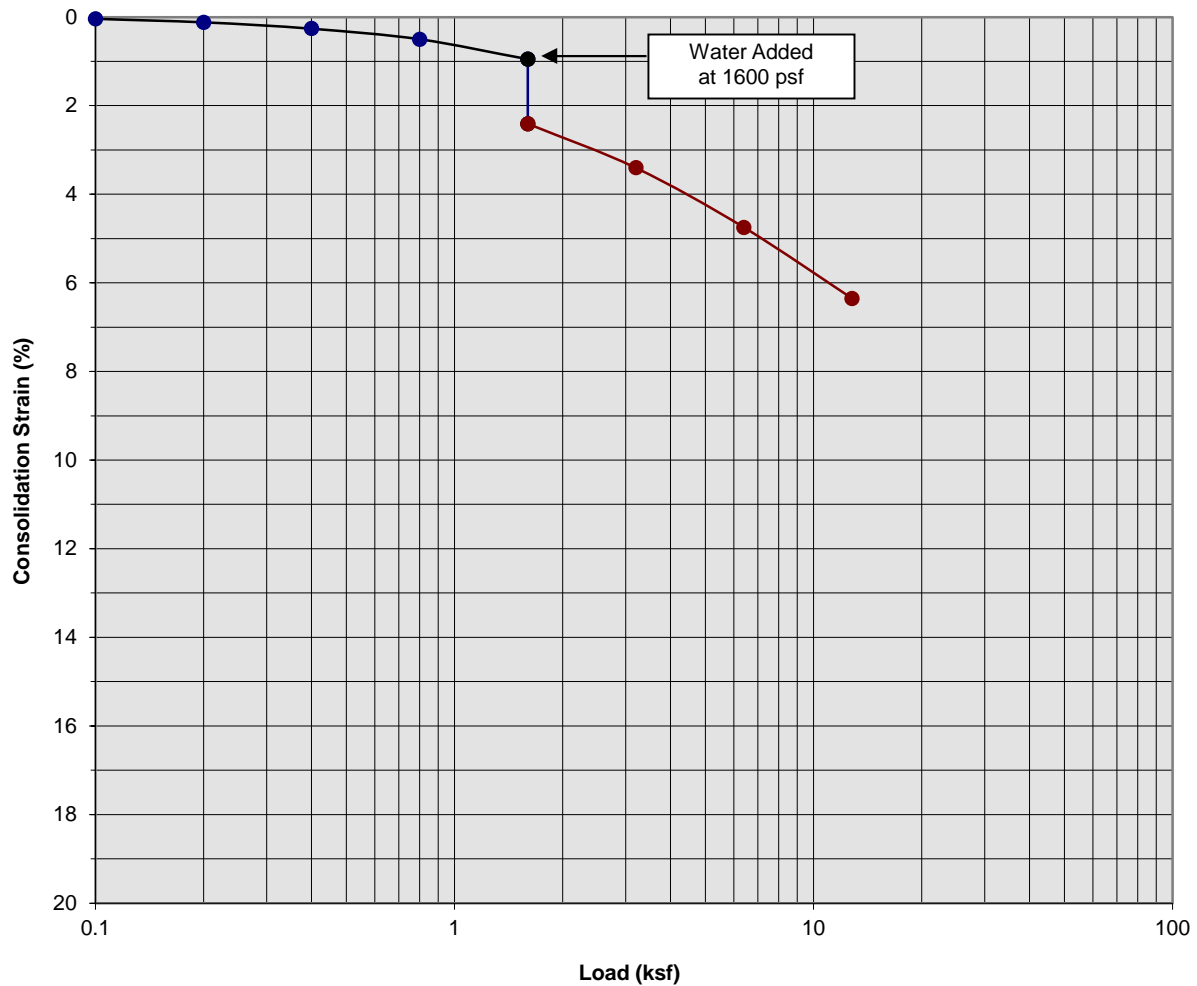
LOGGED BY: Michelle Esparza

READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION  (Continued)	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
40		38				7			34			
45												
50		40			@ 48½', trace Clay, trace coarse Sand, trace Calcareous veining, dense-moist		9			33		
55					Light Brown fine to medium Sandy Clay, trace Silt, hard-very moist							
60		46	4.5			21			59			
					Boring Terminated at 60'							

TBL 22G183-2 (BORINGS).GPJ SOCALGEO.GDT 7/1/22

### Consolidation/Collapse Test Results



Classification: Brown Silty fine to medium Sand, trace Clay

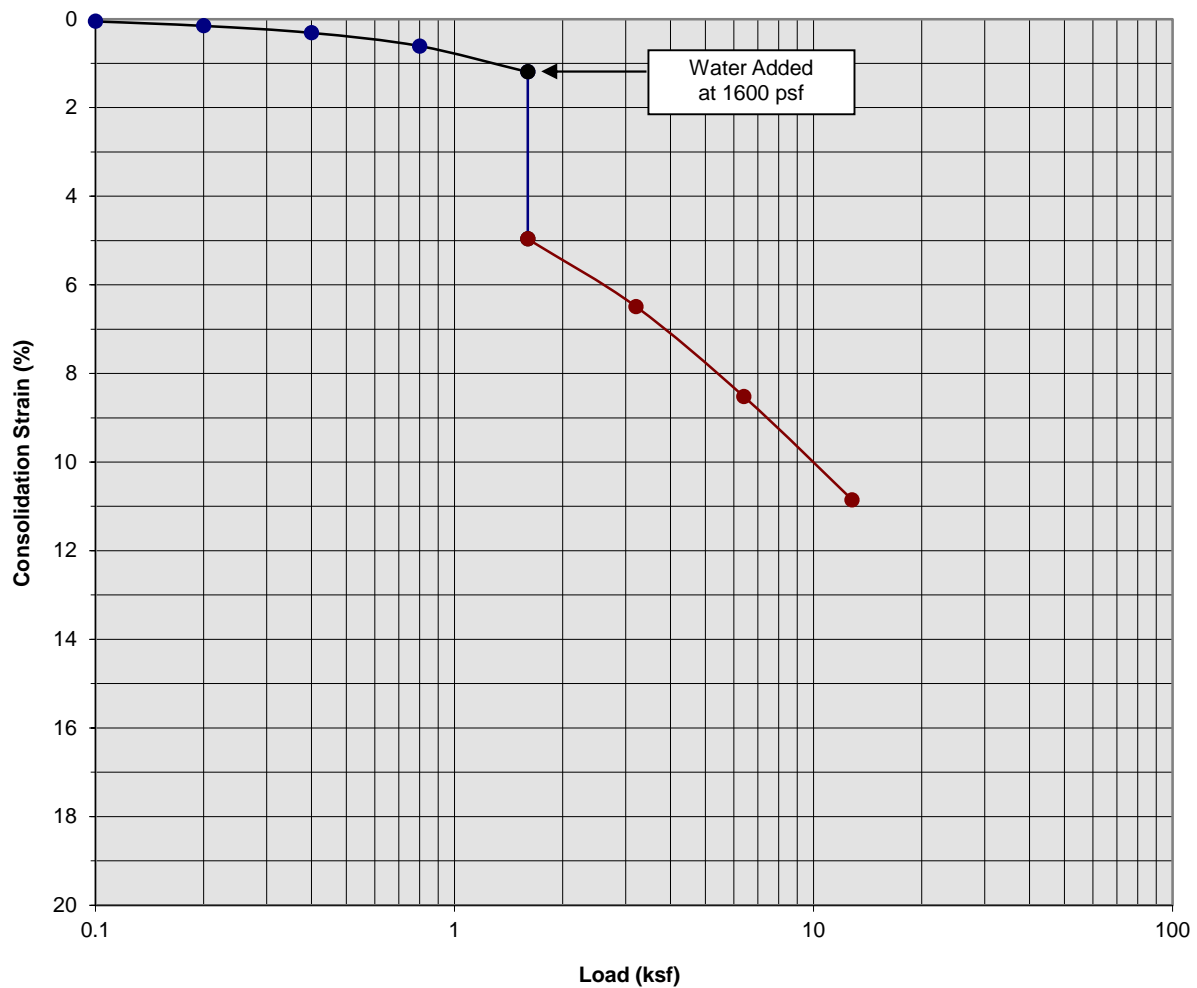
Boring Number:	B-1	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	3 to 4	Initial Dry Density (pcf)	123.9
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	131.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.46

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-1  
**PLATE C- 1**



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### Consolidation/Collapse Test Results



Classification: Brown Silty fine to medium Sand, trace Clay

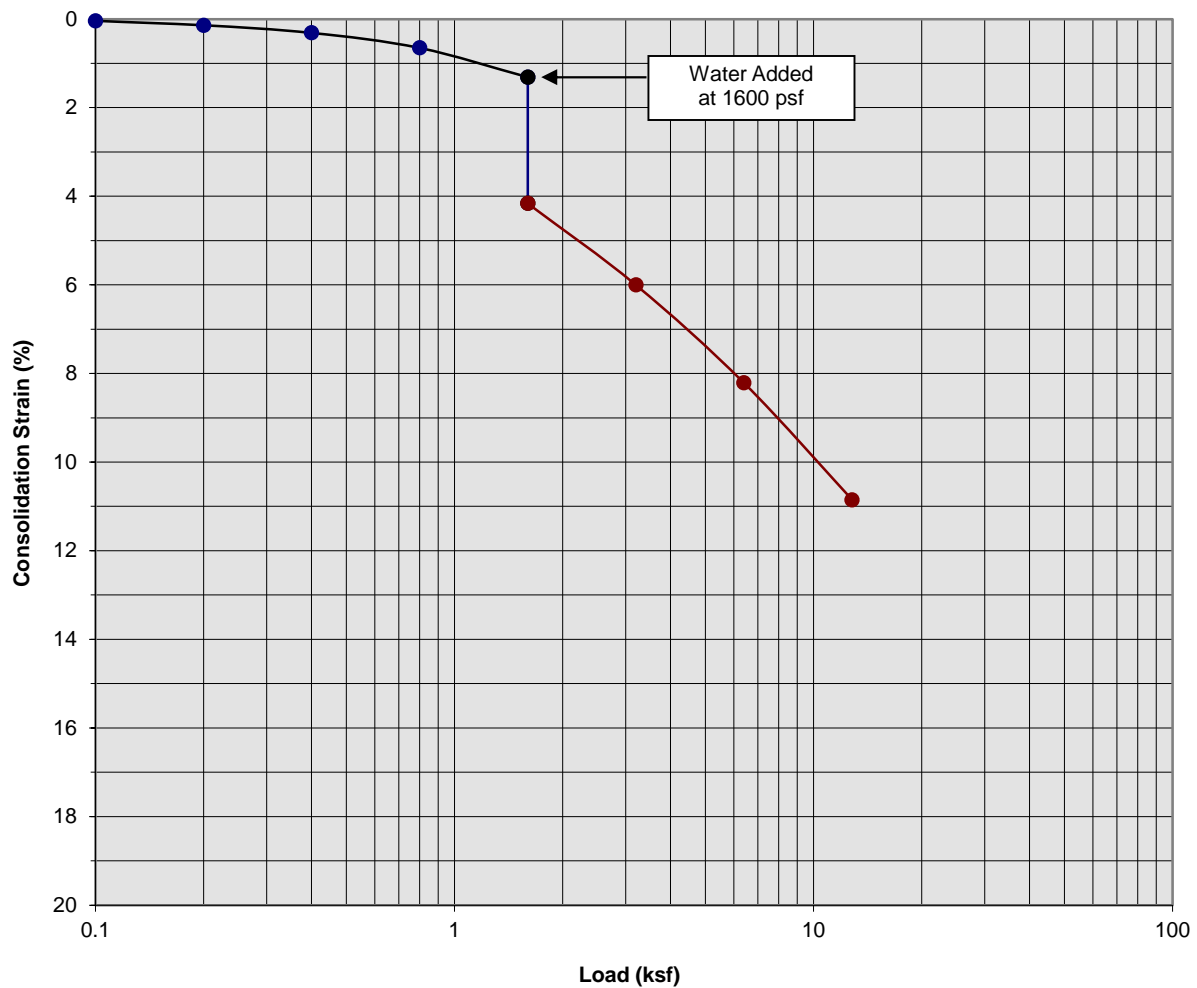
Boring Number:	B-1	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	5 to 6	Initial Dry Density (pcf)	117.5
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	131.6
Specimen Thickness (in)	1.0	Percent Collapse (%)	3.77

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-1  
**PLATE C- 2**



**SOUTHERN  
CALIFORNIA  
GEOTECHNICAL**  
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### Consolidation/Collapse Test Results



Classification: Brown Silty fine to medium Sand, trace Clay

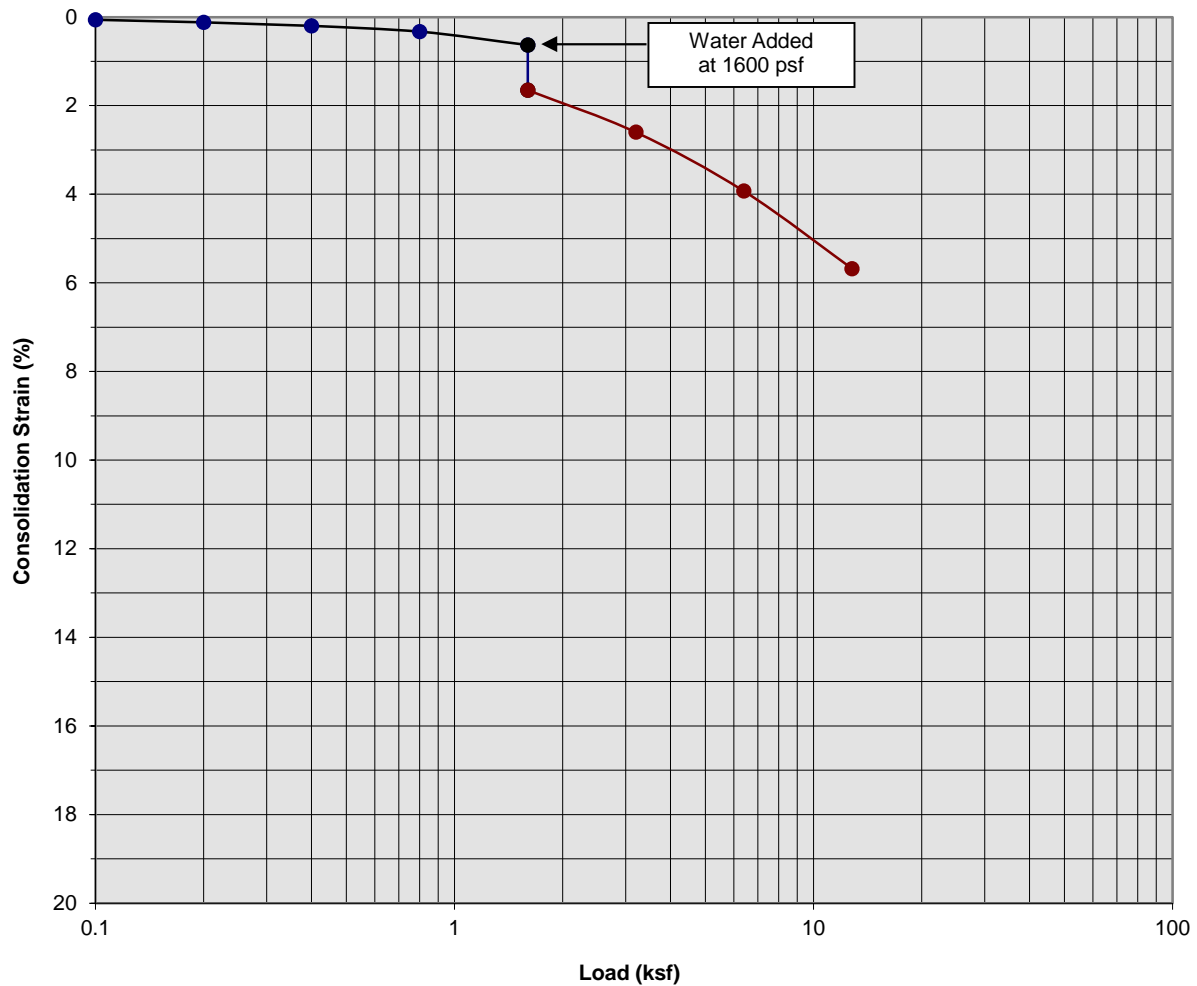
Boring Number:	B-1	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	7 to 8	Initial Dry Density (pcf)	120.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	128.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	2.85

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-1  
**PLATE C- 3**



**SOUTHERN  
CALIFORNIA  
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### Consolidation/Collapse Test Results



Classification: Brown Silty fine to medium Sand, trace Clay

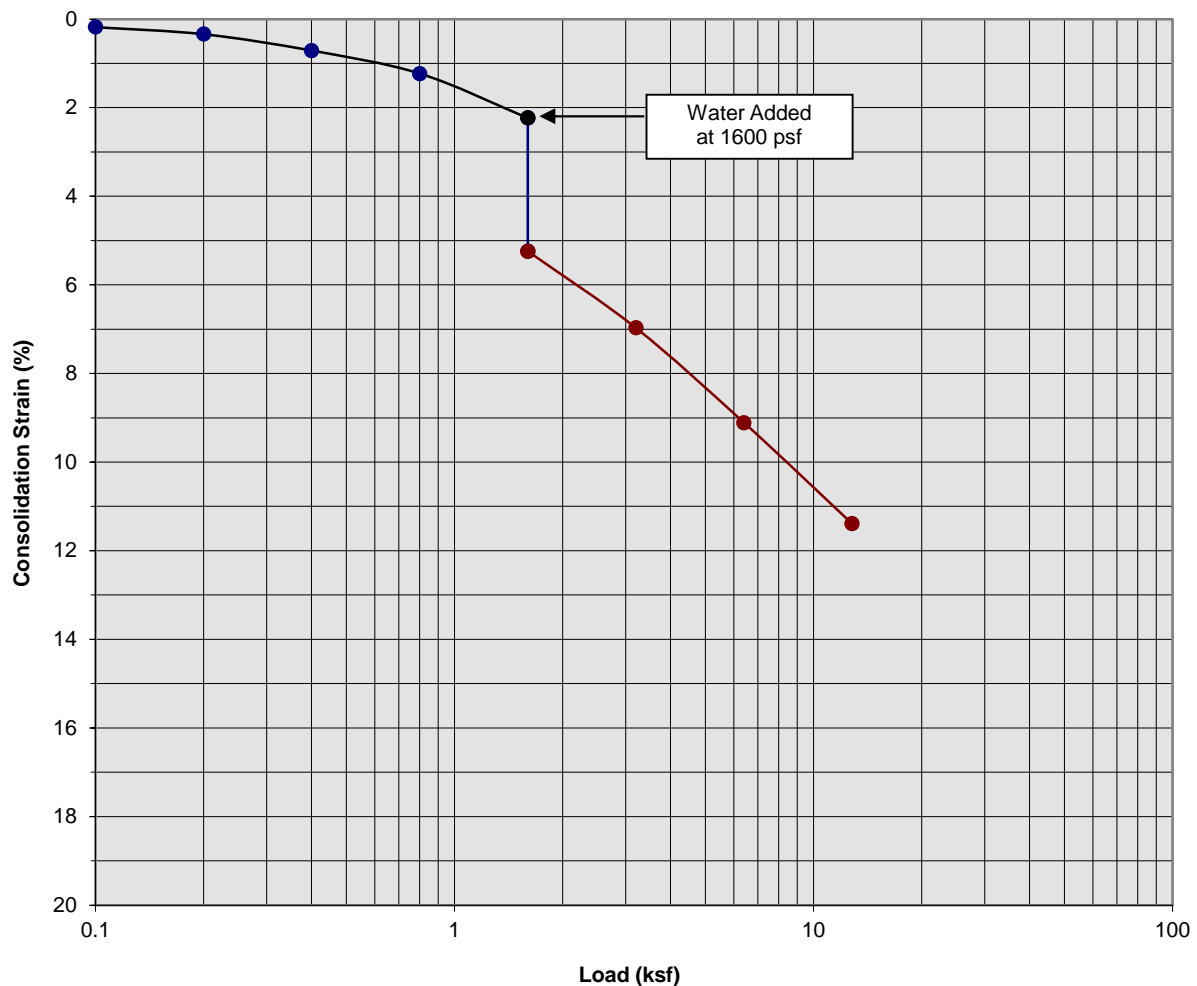
Boring Number:	B-1	Initial Moisture Content (%)	7
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	9 to 10	Initial Dry Density (pcf)	123.3
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	131.0
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.02

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-1  
**PLATE C- 4**



**SOUTHERN  
CALIFORNIA  
GEOTECHNICAL**  
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### Consolidation/Collapse Test Results



Classification: Brown Silty fine to medium Sand, trace Clay

Boring Number:	B-5	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	3 to 4	Initial Dry Density (pcf)	122.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	128.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	3.01

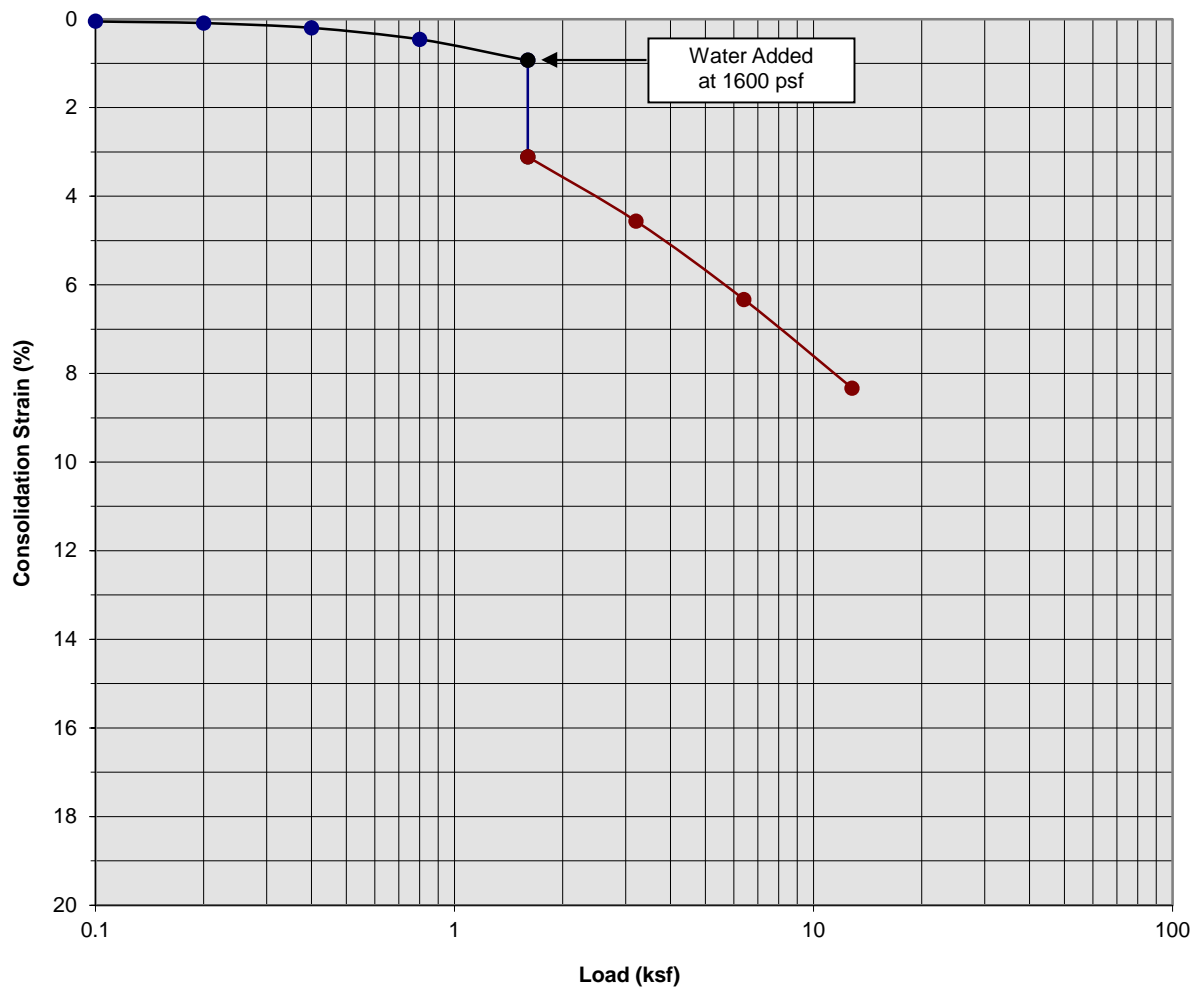
Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-1  
**PLATE C- 5**



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CALIFORNIA  
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### Consolidation/Collapse Test Results



Classification: Brown Silty fine to medium Sand, trace Clay

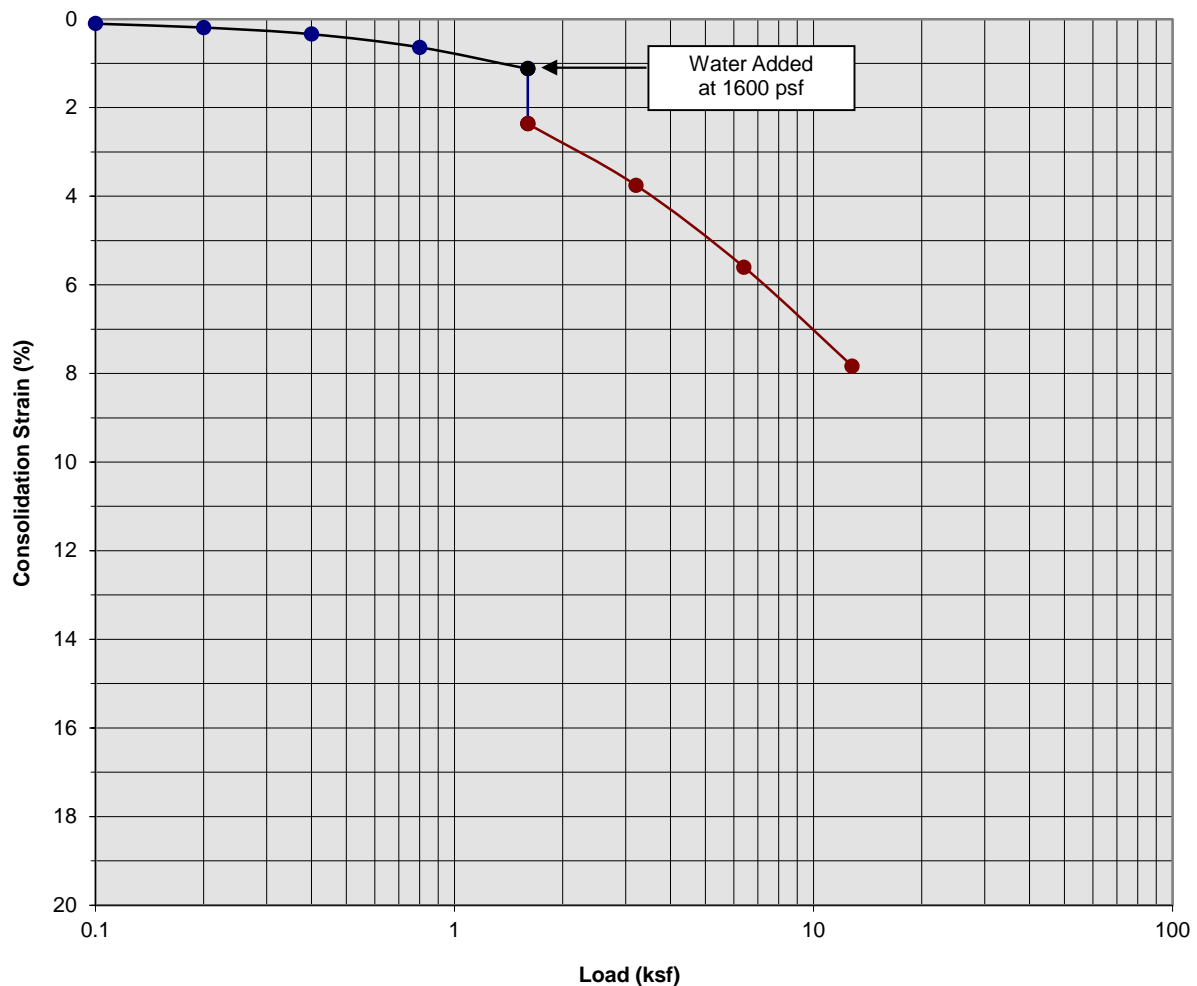
Boring Number:	B-5	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	11
Depth (ft)	5 to 6	Initial Dry Density (pcf)	121.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	128.0
Specimen Thickness (in)	1.0	Percent Collapse (%)	2.18

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-1  
**PLATE C- 6**



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### Consolidation/Collapse Test Results



Classification: Brown Silty fine to medium Sand, trace Clay

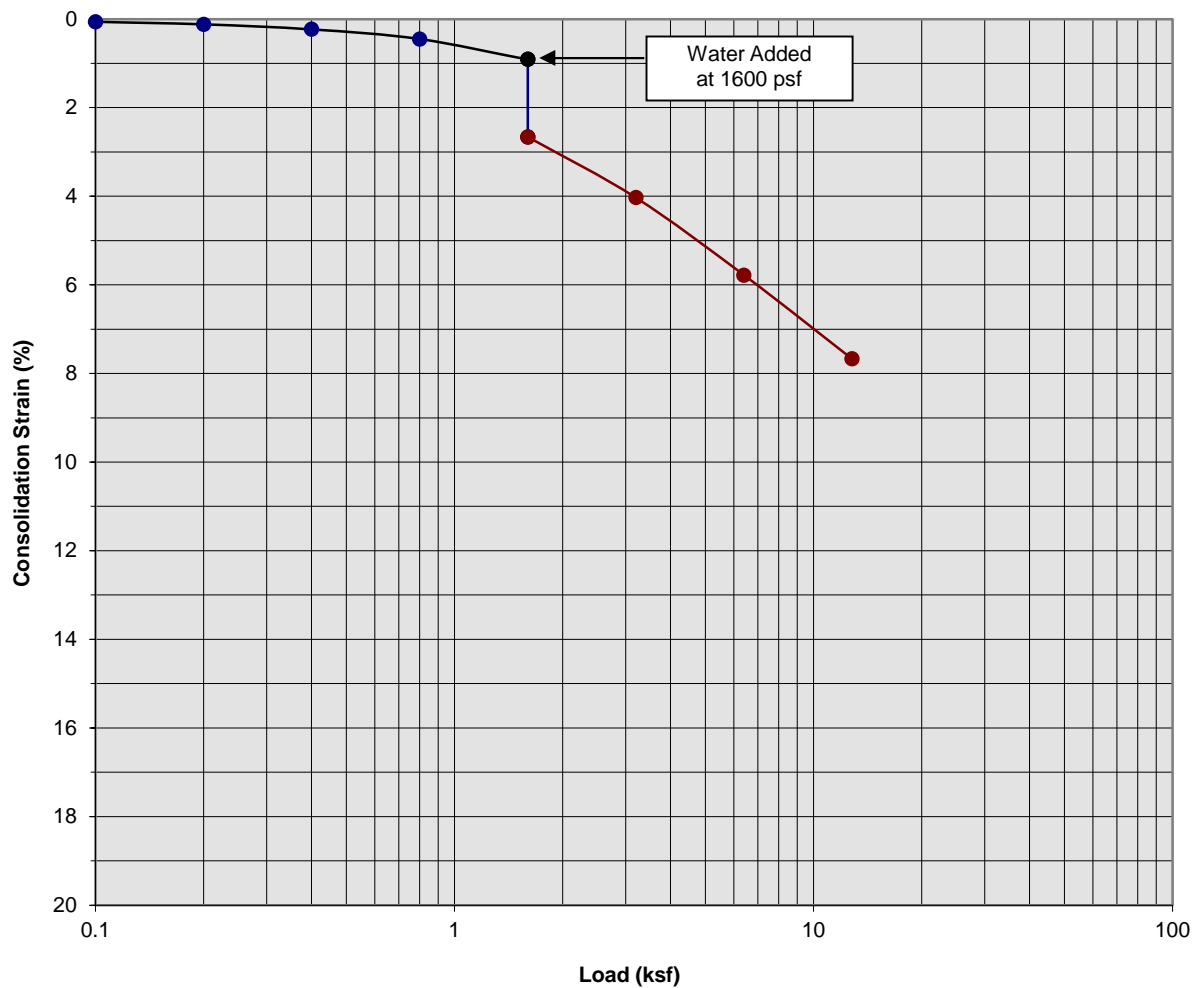
Boring Number:	B-5	Initial Moisture Content (%)	7
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	7 to 8	Initial Dry Density (pcf)	117.2
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	126.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.24

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-1  
**PLATE C- 7**



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CALIFORNIA  
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### Consolidation/Collapse Test Results



Classification: Brown Silty fine to medium Sand, trace Clay

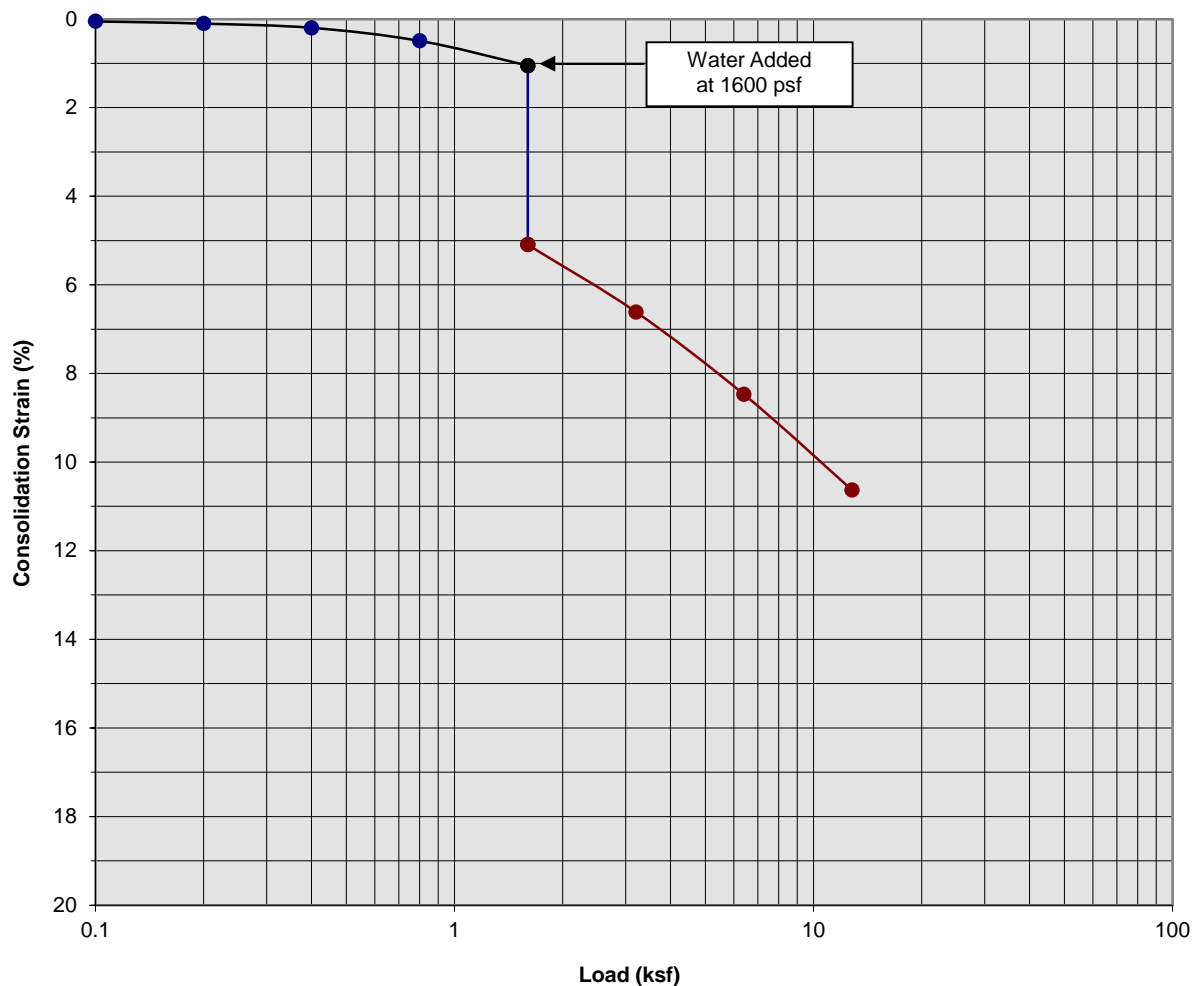
Boring Number:	B-5	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	9 to 10	Initial Dry Density (pcf)	125.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	129.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.75

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-1  
**PLATE C- 8**



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### Consolidation/Collapse Test Results



Classification: Brown Silty fine to medium Sand, trace Clay, little coarse Sand

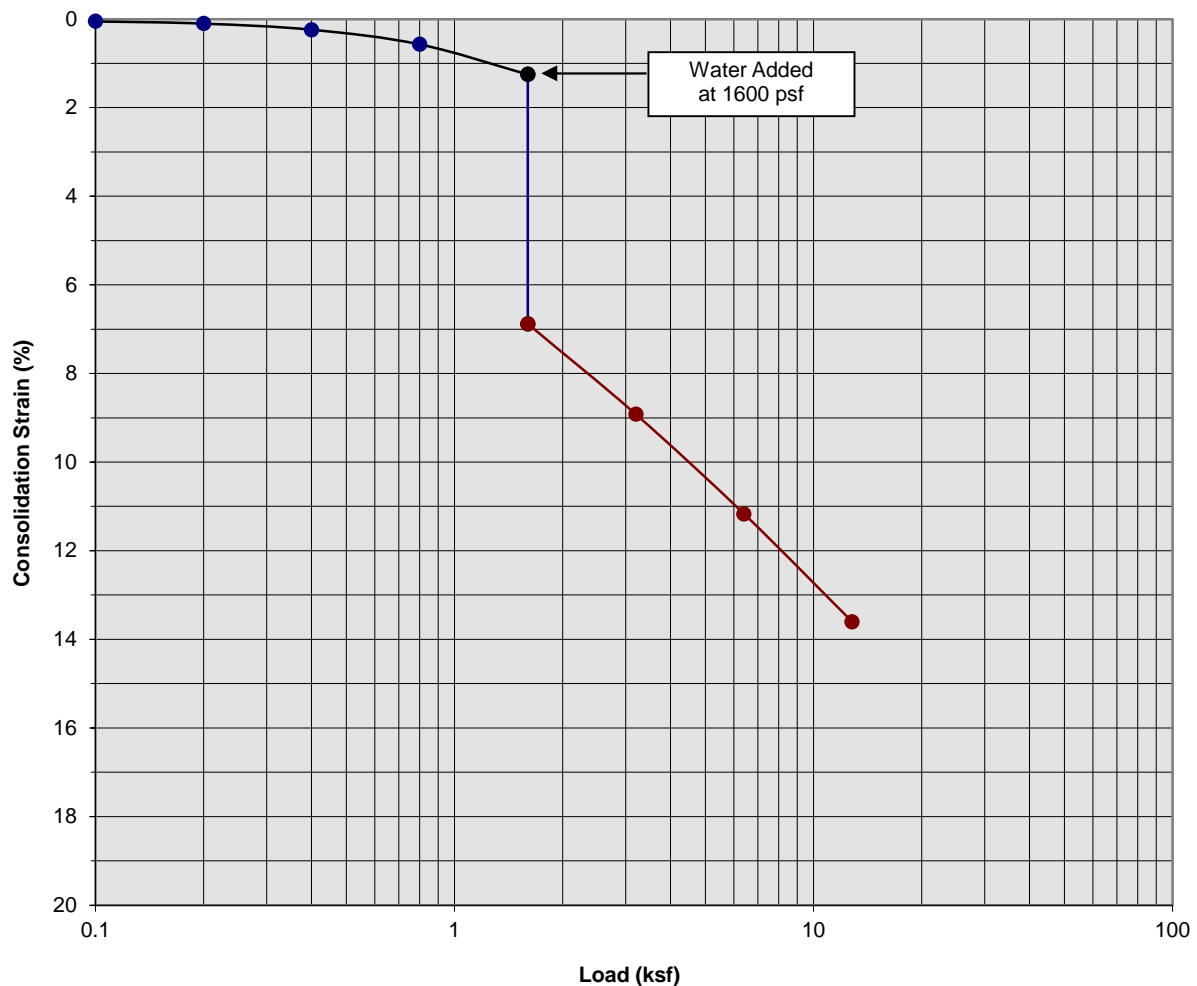
Boring Number:	B-7	Initial Moisture Content (%)	2
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	3 to 4	Initial Dry Density (pcf)	116.6
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	130.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	4.04

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-1  
**PLATE C- 9**



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### Consolidation/Collapse Test Results



Classification: Brown Silty fine to medium Sand, trace Clay, little coarse Sand

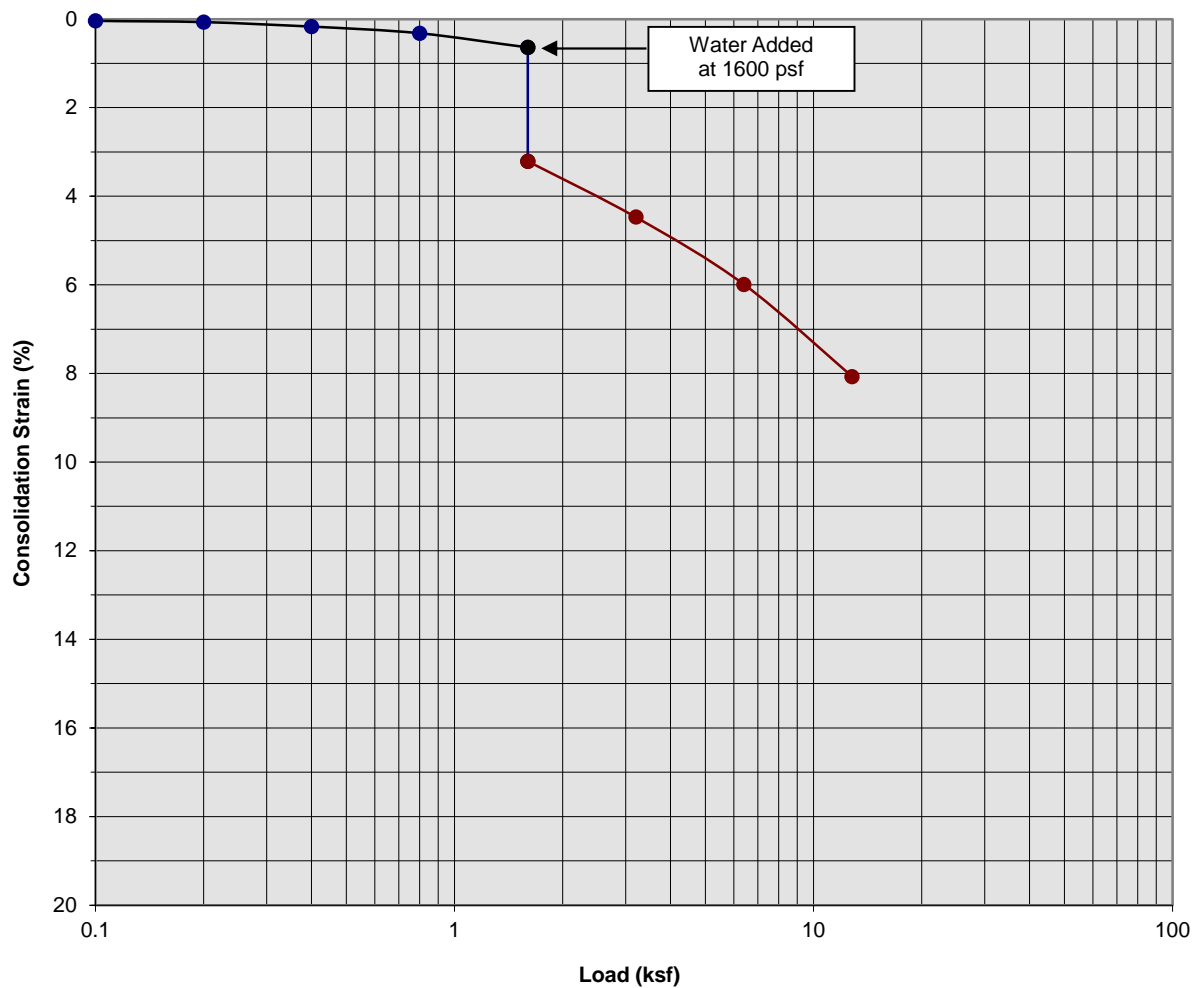
Boring Number:	B-7	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	5 to 6	Initial Dry Density (pcf)	111.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	124.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	5.63

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-1  
**PLATE C- 10**



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### Consolidation/Collapse Test Results



Classification: Brown Silty fine to medium Sand, trace Clay, little coarse Sand

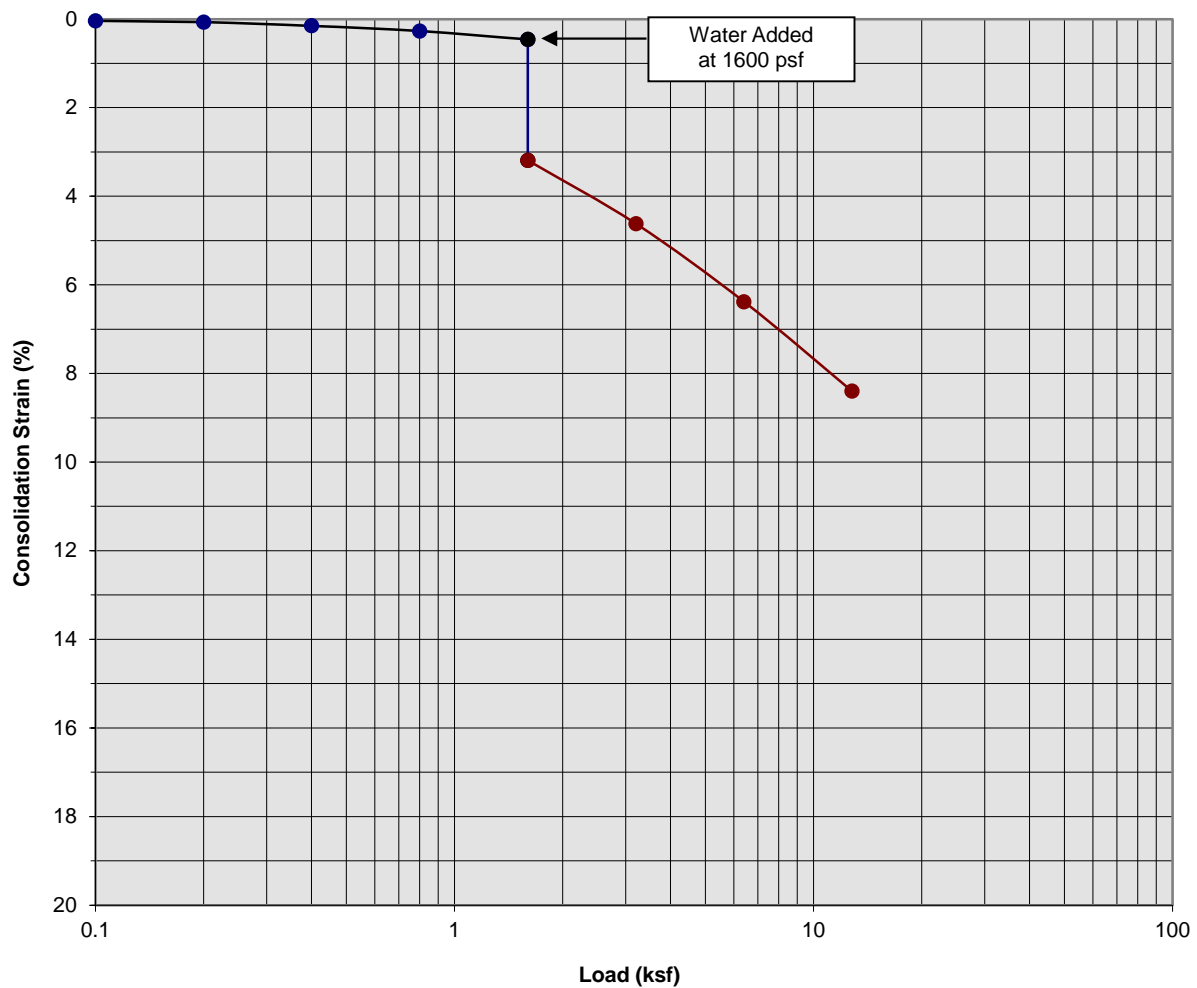
Boring Number:	B-7	Initial Moisture Content (%)	3
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	7 to 8	Initial Dry Density (pcf)	116.2
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	123.8
Specimen Thickness (in)	1.0	Percent Collapse (%)	2.57

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-1  
**PLATE C- 11**



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### Consolidation/Collapse Test Results



Classification: Brown Silty fine to medium Sand, trace Clay, little coarse Sand

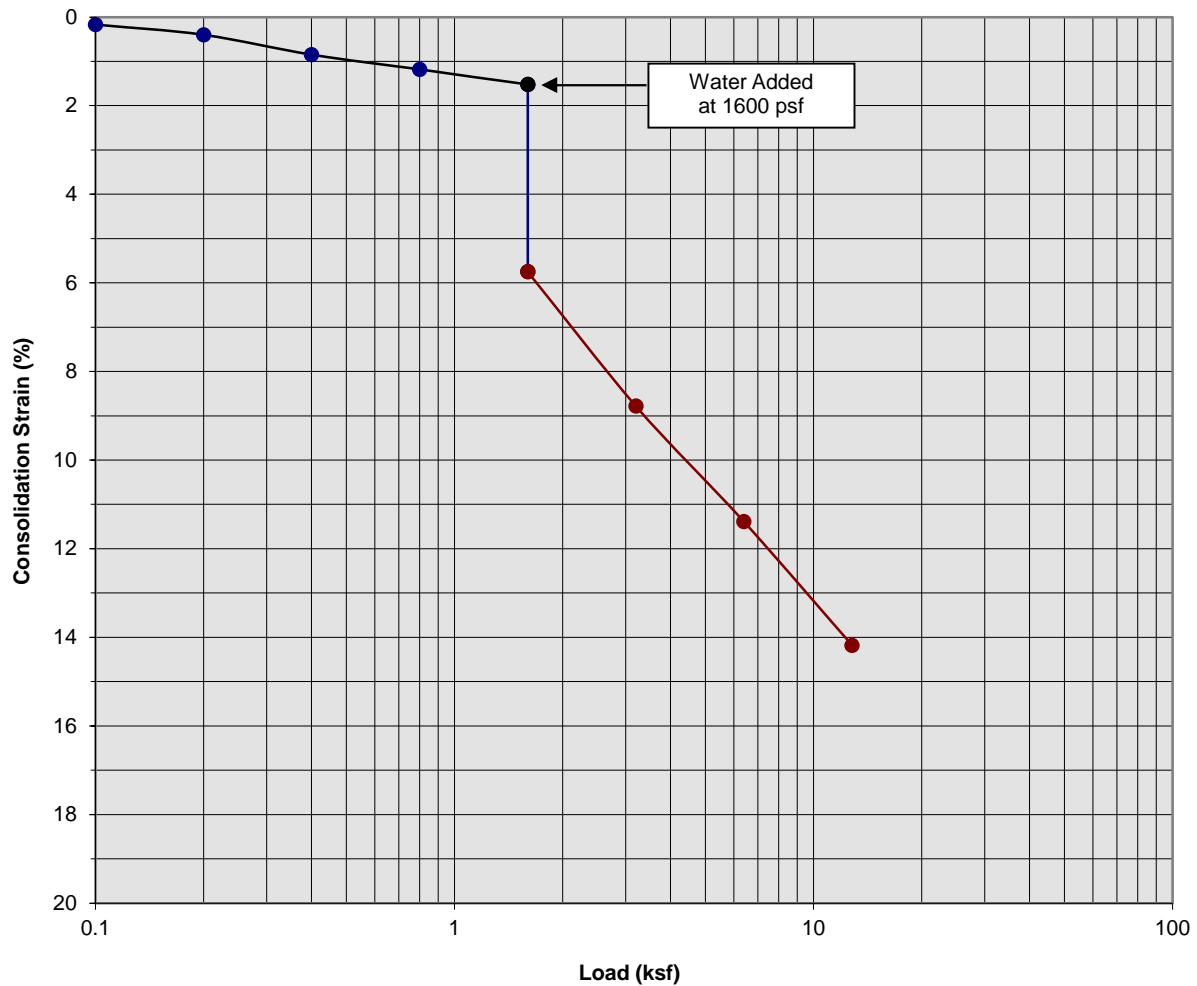
Boring Number:	B-7	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	9 to 10	Initial Dry Density (pcf)	113.3
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	123.8
Specimen Thickness (in)	1.0	Percent Collapse (%)	2.73

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-1  
**PLATE C- 12**



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### Consolidation/Collapse Test Results



Classification: Brown fine to medium Sandy Clay, some Silt

Boring Number:	B-9	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	3 to 4	Initial Dry Density (pcf)	117.7
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	137.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	4.23

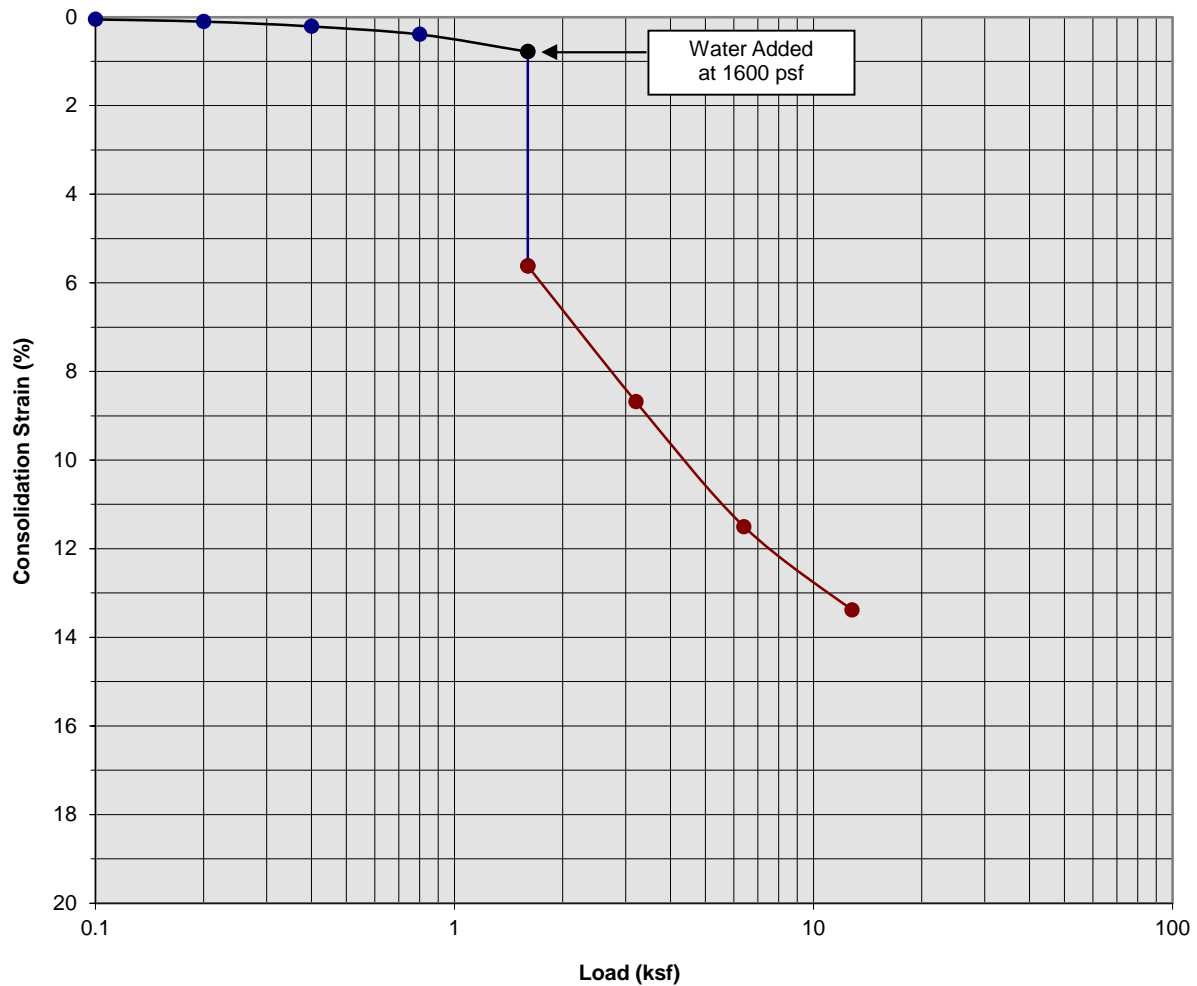
Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-1  
**PLATE C- 13**



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### Consolidation/Collapse Test Results



Classification: Dark Brown fine to medium Sandy Silt, trace Clay

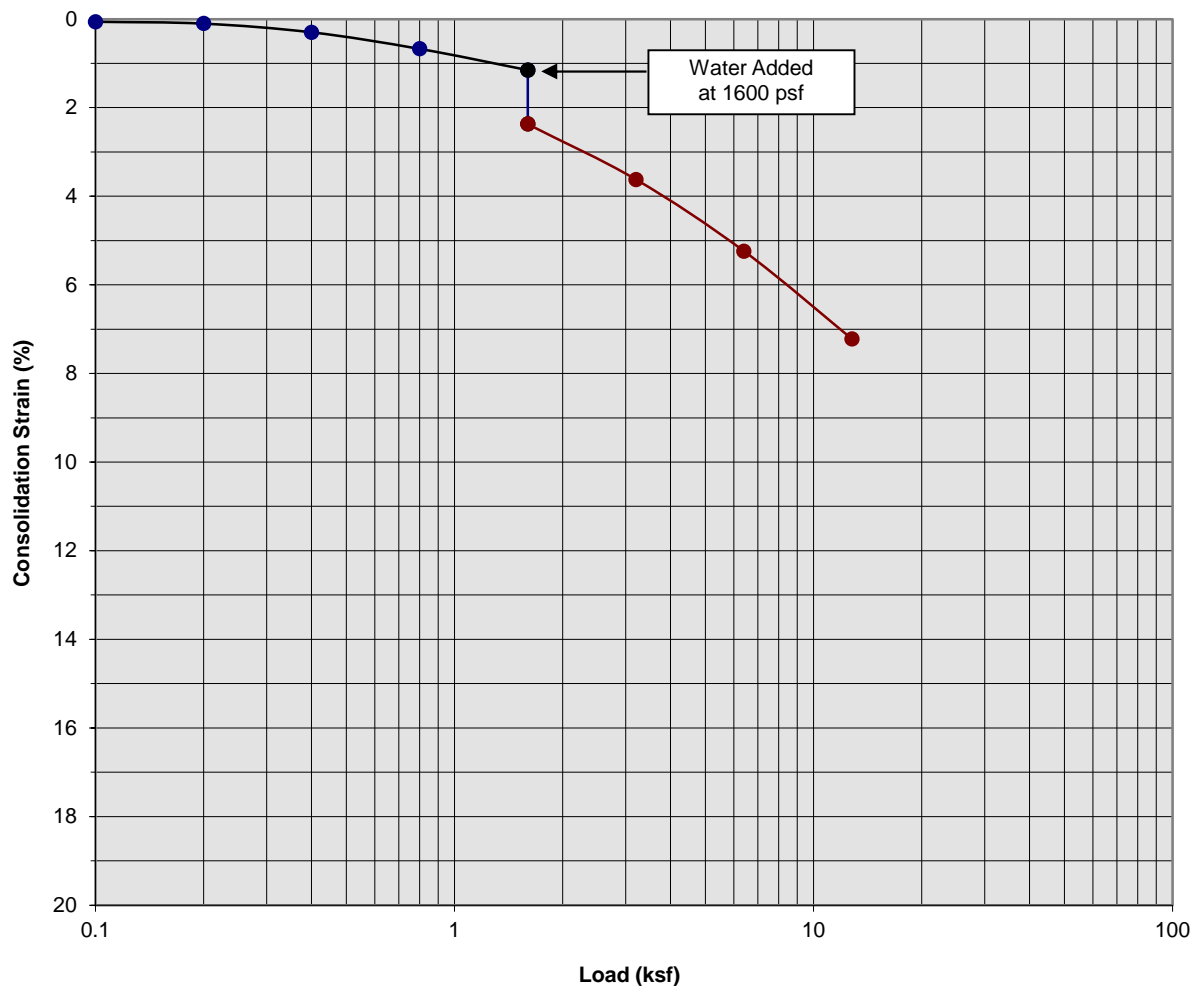
Boring Number:	B-9	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	5 to 6	Initial Dry Density (pcf)	116.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	126.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	4.84

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-1  
**PLATE C- 14**



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### Consolidation/Collapse Test Results



Classification: Dark Brown fine to medium Sandy Silt, trace Clay

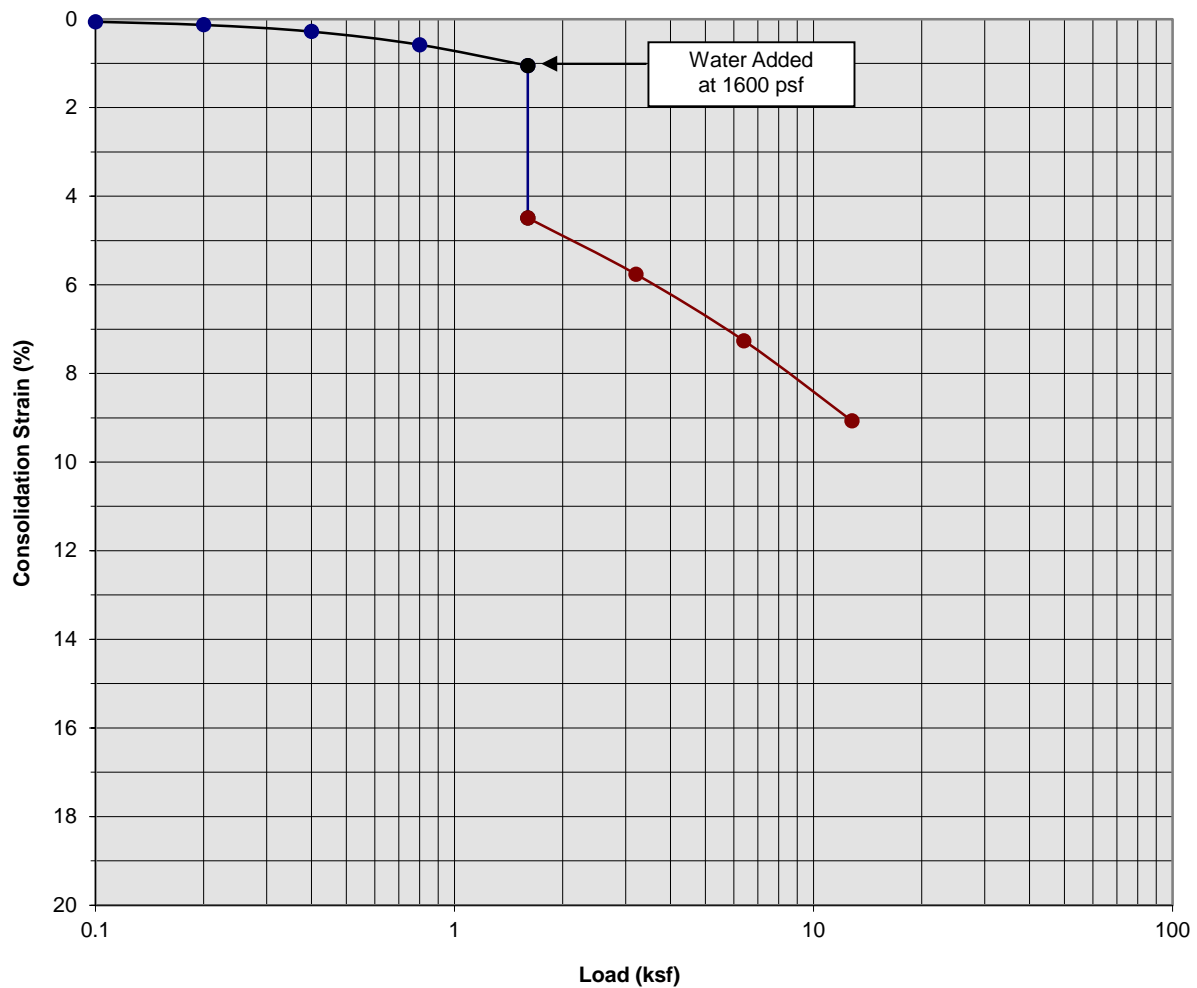
Boring Number:	B-9	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	7 to 8	Initial Dry Density (pcf)	122.6
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	136.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.22

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-1  
**PLATE C- 15**



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### Consolidation/Collapse Test Results



Classification: Dark Brown fine to medium Sandy Silt, little Clay

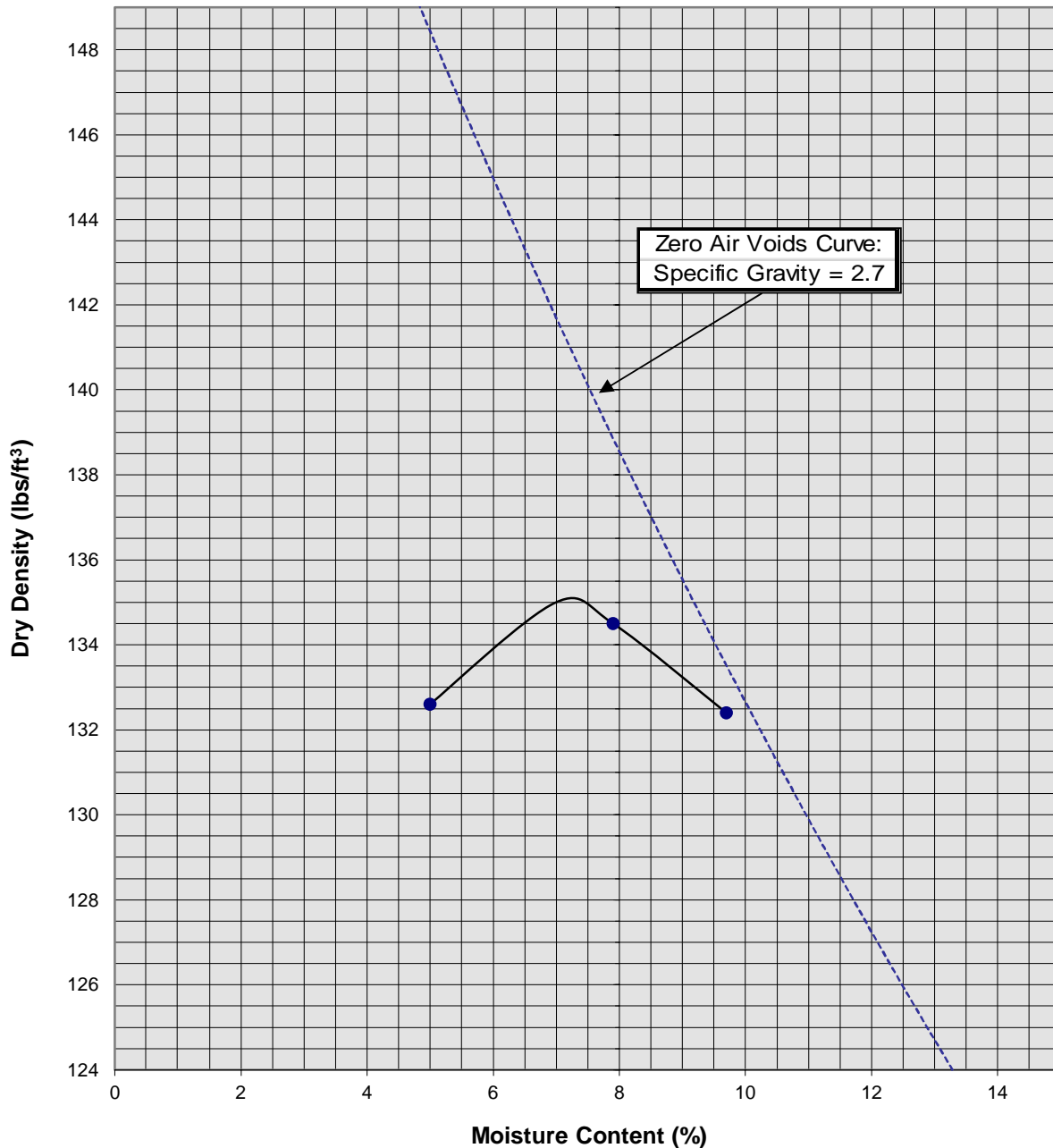
Boring Number:	B-9	Initial Moisture Content (%)	3
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	9 to 10	Initial Dry Density (pcf)	117.1
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	126.8
Specimen Thickness (in)	1.0	Percent Collapse (%)	3.44

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-1  
**PLATE C- 16**



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# Moisture/Density Relationship ASTM D-1557



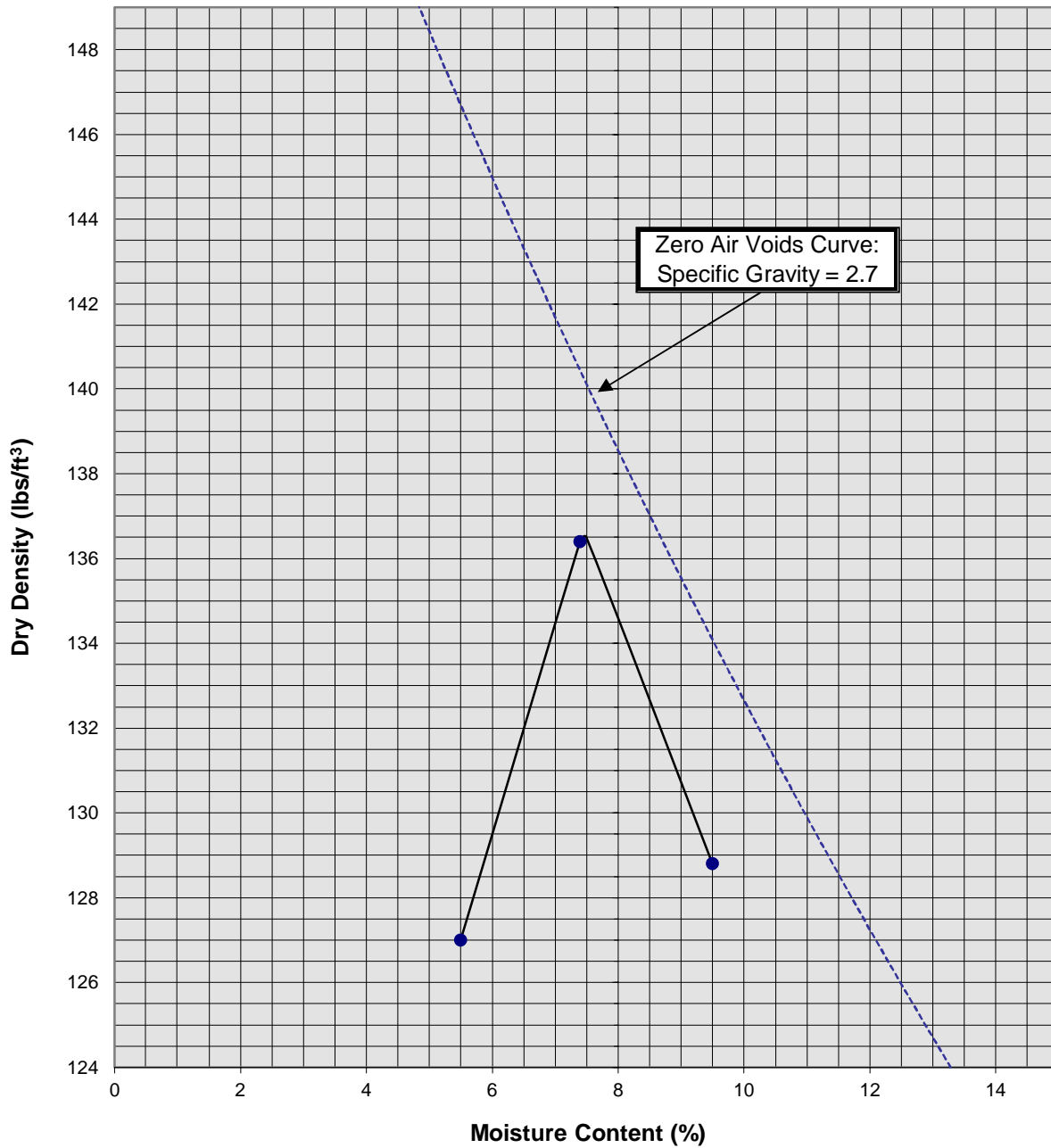
Soil ID Number	B-2 @ 0 to 5'
Optimum Moisture (%)	7
Maximum Dry Density (pcf)	135
Soil Classification	Brown Silty fine to medium Sand, trace Clay, trace coarse Sand

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-1  
**PLATE C-17**



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# Moisture/Density Relationship ASTM D-1557



Soil ID Number	B-9 @ 0 to 5'
Optimum Moisture (%)	7.5
Maximum Dry Density (pcf)	136.5
Soil Classification	Brown fine Sandy Silt and fine to medium Sandy Clay, some Silt

Harvest Landing Industrial Development  
Perris, California  
Project No. 22G183-1  
**PLATE C-18**



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JOB NO.: 22G183-2	EXCAVATION DATE: 5/4/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	EXCAVATION METHOD: Backhoe	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS					LABORATORY RESULTS							COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5					SURFACE ELEVATION: --- MSL							
					ALLUVIUM: Brown fine to medium Sandy Silt, trace Clay, trace coarse Sand, trace fine root fibers, dense-dry							
					Brown Silty fine to medium Sand, trace coarse Sand, trace Clay, trace Calcareous nodules, dense-dry		2					
					Trench Terminated at 7'							

TBL 22G183-2 (INFIL TRENCHES).GPJ SOCALGEO.GDT 6/24/22



JOB NO.: 22G183-2	EXCAVATION DATE: 5/5/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	EXCAVATION METHOD: Backhoe	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS					LABORATORY RESULTS							COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5					<p style="text-align: center;">SURFACE ELEVATION: --- MSL</p> <p><u>ALLUVIUM</u>: Brown fine Sandy Silt, trace medium to coarse Sand, trace Clay, trace fine root fibers, trace Calcareous nodules, dense-dry</p> <p>Brown Silty fine to medium Sand, trace Clay, trace coarse Sand, little Calcareous nodules, dense-dry</p>		1					
					Trench Terminated at 7'							

TBL 22G183-2 (INFIL TRENCHES).GPJ SOCALGEO.GDT 6/24/22



JOB NO.: 22G183-2 EXCAVATION DATE: 5/4/22 WATER DEPTH: Dry  
PROJECT: Harvest Landing Industrial Development EXCAVATION METHOD: Backhoe CAVE DEPTH: ---  
LOCATION: Perris, California LOGGED BY: Caleb Brackett READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5					<p>SURFACE ELEVATION: --- MSL</p> <p><u>FILL</u>: Brown fine to medium Sandy Silt, trace Clay, trace coarse Sand, trace fine Gravel, trace fine root fibers, medium dense-damp</p> <p><u>ALLUVIUM</u>: Brown Silty fine to medium Sand, little coarse Sand, trace Calcareous nodules, medium dense to dense-dry to damp</p>		3					
					Trench Terminated at 7'							

TBL 22G183-2 (INFIL TRENCHES).GPJ SOCALGEO.GDT 6/24/22





JOB NO.: 22G183-2	EXCAVATION DATE: 5/4/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	EXCAVATION METHOD: Backhoe	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS					LABORATORY RESULTS							COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5					<p style="text-align: center;">SURFACE ELEVATION: --- MSL</p> <p><u>ALLUVIUM</u>: Brown fine to medium Sandy Silt, trace Clay, trace coarse Sand, trace fine root fibers, medium dense-dry to damp</p> <p>Brown Silty fine to medium Sand, trace Clay, trace to little coarse Sand, trace Calcareous nodules, dense to very dense-dry</p>		2					
					Trench Terminated at 7'							

TBL 22G183-2 (INFIL TRENCHES).GPJ SOCALGEO.GDT 6/24/22





JOB NO.: 22G183-2	EXCAVATION DATE: 5/5/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	EXCAVATION METHOD: Backhoe	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS					LABORATORY RESULTS							COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5					<p style="text-align: center;">SURFACE ELEVATION: --- MSL</p> <p><u>ALLUVIUM</u>: Brown fine Sandy Silt, trace Clay, trace medium to coarse Sand, little fine root fibers, dense-dry</p> <p>Brown Silty fine to medium Sand, trace coarse Sand, trace Clay, little Calcareous nodules, very dense-damp</p>		4					
					Trench Terminated at 7'							

TBL 22G183-2 (INFIL TRENCHES).GPJ SOCALGEO.GDT 6/24/22



JOB NO.: 22G183-2	EXCAVATION DATE: 5/5/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	EXCAVATION METHOD: Backhoe	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Joey Hernandez	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5					<p><u>ALLUVIUM</u>: Brown fine to medium Sandy Silt, trace coarse Sand, trace Clay, trace Calcareous nodules, trace fine root fibers, porous, dense-damp</p> <p>Brown Silty fine to medium Sand, trace Clay, trace coarse Sand, little Calcareous nodules, dense to very dense-dry</p>		2					
					Trench Terminated at 7'							

TBL 22G183-2 (INFIL TRENCHES).GPJ SOCALGEO.GDT 6/24/22


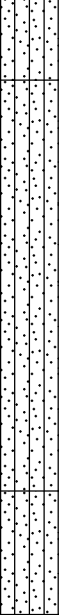




JOB NO.: 22G183-2	DRILLING DATE: 6/9/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Michelle Esparza	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: --- MSL												
					<u>ALLUVIUM</u> : Brown Silty fine to medium Sand, dense-damp		5					
5		46										
					Brown fine to medium Sandy Silt, trace Clay, dense to very dense-damp to moist		4					
10		30										
15		50/5"					9			57		
20		50/5"			@ 18½', little Clay		10			54		
25		50			@ 23½', little Calcareous veining, no Clay		4			62		
30		42			Brown Silty fine to medium Sand, trace to little coarse Sand, dense-moist		9			42		
		50/5"			Brown fine Sandy Silt, trace medium Sand, very dense-dry to damp		3			64		

TBL 22G183-2 (BORINGS).GPJ SOCALGEO.GDT 7/1/22



JOB NO.: 22G183-2				DRILLING DATE: 6/9/22				WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: ---				
LOCATION: Perris, California				LOGGED BY: Michelle Esparza				READING TAKEN: At Completion				
FIELD RESULTS				GRAPHIC LOG	DESCRIPTION  (Continued)	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
40		45			Brown fine to medium Sandy Silt, dense to very dense-moist		10			54	@ 43½', no sample recovery	
45		50/5"										
50		50/4"			Brown fine Sandy Silt, trace medium Sand, very dense-damp		5			67		
					Boring Terminated at 50'							

TBL 22G183-2 (BORINGS).GPJ SOCALGEO.GDT 7/1/22



JOB NO.: 22G183-2	DRILLING DATE: 6/9/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Michelle Esparza	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: --- MSL												
5  <												

TBL 22G183-2 (BORINGS).GPJ SOCALGEO.GDT 7/1/22



JOB NO.: 22G183-2	DRILLING DATE: 6/9/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Michelle Esparza	READING TAKEN: At Completion

FIELD RESULTS					LABORATORY RESULTS							COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					(Continued)							
40	X	34			@ 38 1/2', no coarse Sand		8			35		
45	X	54			Brown fine to medium Sandy Silt, very dense-very moist		17			53		
50	X	50/5"			Brown Silty fine to medium Sand, very dense-moist		12			43		
					Boring Terminated at 50'							

TBL 22G183-2 (BORINGS).GPJ SOCALGEO.GDT 7/1/22



JOB NO.: 22G183-2

DRILLING DATE: 6/9/22

WATER DEPTH: Dry

PROJECT: Harvest Landing Industrial Development

DRILLING METHOD: Hollow Stem Auger

CAVE DEPTH: ---

LOCATION: Perris, California

LOGGED BY: Michelle Esparza

READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: --- MSL												
5   												

TBL 22G183-2 (BORINGS).GPJ SOCALGEO.GDT 7/1/22





JOB NO.: 22G183-2	DRILLING DATE: 6/9/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Michelle Esparza	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
40		38			(Continued)		7			37		
45		43					7			31		
50		34					9			26		
					@ 48½', trace to little coarse Sand, no Clay							
					Boring Terminated at 50'							

TBL 22G183-2 (BORINGS).GPJ SOCALGEO.GDT 7/1/22



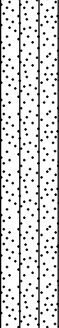


JOB NO.: 22G183-2	DRILLING DATE: 6/9/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Michelle Esparza	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
SURFACE ELEVATION: --- MSL												
					ALLUVIUM: Brown Silty fine to medium Sand, dense to very dense-damp to moist							
5		17			@ 3½ to 5', medium dense		3					
10		38			@ 8½', trace coarse Sand, trace Clay		5					
15		39			@ 13½ to 47', no Clay		9		43			
20		38					6		35			
25		59					5		42			
30		59					5		30			
		52					5		45			

TBL 22G183-2 (BORINGS).GPJ SOCALGEO.GDT 7/1/22



JOB NO.: 22G183-2	DRILLING DATE: 6/9/22	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Michelle Esparza	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
40	X	27					5			27		
45	X	41			@ 43½', trace to little coarse Sand		4			21		
50	X	42			@ 48½', trace Clay		7					
					Boring Terminated at 50'							

TBL 22G183-2 (BORINGS).GPJ SOCALGEO.GDT 7/1/22



JOB NO.: 22G183-4	DRILLING DATE: 8/15/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Michelle Krizek	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1465.0 feet MSL							
	X	21			YOUNGER ALLUVIUM: Brown Silty fine Sand, little medium Sand, trace coarse Sand, trace fine Gravel, trace fine root fibers, trace Clay, medium dense-dry to damp		3					
	X	18			Brown Silty fine to coarse Sand, trace Clay, trace Calcareous veining, medium dense-dry to damp		3			29		
					Boring Terminated @ 4½ feet							

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23




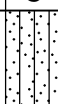


JOB NO.: 22G183-4	DRILLING DATE: 8/15/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Michelle Krizek	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1464.0 feet MSL							
		33			OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace Clay, trace coarse Sand, trace fine root fibers, dense-damp		4					
		32					3			41		
					Boring Terminated @ 4½ feet							

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23



JOB NO.: 22G183-4	DRILLING DATE: 8/15/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Michelle Krizek	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5		40			OLDER ALLUVIUM: Brown Silty fine to medium Sand to fine to medium Sandy Silt, little coarse Sand, little Clay, trace fine root fibers, dense-damp		4					
		56			Brown Silty fine to medium Sand, little Clay, trace coarse Sand, little Calcareous veining, weakly cemented, very dense-damp		5			39		
					Boring Terminated @ 5½ feet							

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23



JOB NO.: 22G183-4					DRILLING DATE: 8/14/23					WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development					DRILLING METHOD: Hollow Stem Auger					CAVE DEPTH: ---				
LOCATION: Perris, California					LOGGED BY: Michelle Krizek					READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS		
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)			
5					SURFACE ELEVATION: 1471.2 feet MSL									
		44			OLDER ALLUVIUM: Brown Silty fine to medium Sand to fine to medium Sandy Silt, little coarse Sand, little Clay, trace to little Calcareous veining, trace fine root fibers, dense-damp		5							
		51			Brown Silty fine to medium Sand, little Clay, trace coarse Sand, very dense-damp		5			36				
					Boring Terminated @ 7½ feet									

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23


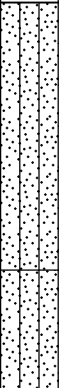



JOB NO.: 22G183-4				DRILLING DATE: 8/14/23				WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: ---				
LOCATION: Perris, California				LOGGED BY: Michelle Krizek				READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1455.6 feet MSL							
					OLDER ALLUVIUM: Brown Silty fine to medium Sand, little Clay, trace coarse Sand, little Calcareous veining, very dense-damp to moist							
5		65/11"					4					
		90/10"					6					
10		83/11"					8			45		
					Boring Terminated @ 10½ feet							
</												

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23



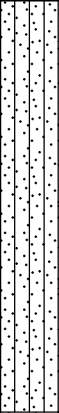


JOB NO.: 22G183-4				DRILLING DATE: 8/14/23				WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: ---				
LOCATION: Perris, California				LOGGED BY: Michelle Krizek				READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5		35	2.5		<u>OLDER ALLUVIUM</u> : Brown Silty fine to medium Sand, trace to little coarse Sand, little Clay, little Calcareous veining, dense-damp		4					
		56	4.0		Dark Brown Silty fine to medium Sand, trace Clay, trace coarse Sand, trace to little Calcareous veining, very dense-moist		14			44		
Boring Terminated @ 9½ feet												

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23



JOB NO.: 22G183-4	DRILLING DATE: 8/14/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Michelle Krizek	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS	
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)		
					SURFACE ELEVATION: 1455.0 feet MSL								
5		32			<u>OLDER ALLUVIUM:</u> Brown Silty fine to medium Sand to fine to medium Sandy Silt, trace to little Clay, trace coarse Sand, trace to little Calcareous veining, medium dense to dense-damp to moist		6						
		26						8					
		45						10			53		
10					Boring Terminated @ 10 feet								

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23



JOB NO.: 22G183-4					DRILLING DATE: 8/14/23					WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development					DRILLING METHOD: Hollow Stem Auger					CAVE DEPTH: ---				
LOCATION: Perris, California					LOGGED BY: Michelle Krizek					READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS		
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)			
5	X	26			SURFACE ELEVATION: 1455.5 feet MSL		5							
	X	38			OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace to little Clay, trace coarse Sand, trace Calcareous veining, medium dense-damp									
					@ 5½ feet, dense-moist		9			46				
					Boring Terminated @ 7½ feet									

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23



JOB NO.: 22G183-4	DRILLING DATE: 8/14/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Michelle Krizek	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
		43			<p>SURFACE ELEVATION: 1450.5 feet MSL</p> <p><u>OLDER ALLUVIUM</u>: Brown Silty fine to medium Sand, trace Clay, trace coarse Sand, trace fine root fibers, trace Calcareous veining, dense-damp</p>		4			37		
					Boring Terminated @ 3 feet							

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23




JOB NO.: 22G183-4	DRILLING DATE: 8/14/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Michelle Krizek	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
		55			<p>SURFACE ELEVATION: 1450.5 feet MSL</p> <p><u>OLDER ALLUVIUM</u>: Brown Silty fine to medium Sand, little Clay, trace coarse Sand, trace Calcareous nodules, very dense-damp</p>		4			45		
					Boring Terminated @ 3 feet							

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23



JOB NO.: 22G183-4	DRILLING DATE: 8/14/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Michelle Krizek	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
	X	45			SURFACE ELEVATION: 1451.0 feet MSL  OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace Clay, little coarse Sand, trace Calcareous veining, trace fine root fibers, dense-damp		4			36		
					Boring Terminated @ 3½ feet							

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23




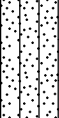


JOB NO.: 22G183-4				DRILLING DATE: 8/14/23				WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: ---				
LOCATION: Perris, California				LOGGED BY: Michelle Krizek				READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1452.0 feet MSL							
	X	44			OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace Clay, little coarse Sand, trace Calcareous veining, trace fine root fibers, dense-damp		3					
	X	37					4			35		
Boring Terminated @ 4½ feet												

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23



JOB NO.: 22G183-4	DRILLING DATE: 8/14/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Michelle Krizek	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5		14			<u>ALLUVIUM</u> : Brown Silty fine to medium Sand, trace coarse Sand, trace Calcareous veining, trace fine root fibers, medium dense-damp		3					
		47			<u>OLDER ALLUVIUM</u> : Brown Silty fine to medium Sand, little Clay, trace coarse Sand, trace Calcareous veining, medium dense-damp to moist		6		40			
					Boring Terminated @ 9 feet							

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23







JOB NO.: 22G183-4					DRILLING DATE: 8/14/23					WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development					DRILLING METHOD: Hollow Stem Auger					CAVE DEPTH: ---				
LOCATION: Perris, California					LOGGED BY: Michelle Krizek					READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS		
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)			
5		43			OLDER ALLUVIUM: Brown Silty fine to medium Sand, little coarse Sand, little Clay, little Calcareous veining and nodules, dense-damp		3							
		20			Brown Silty fine to coarse Sand, medium dense-damp		3			19				
					Boring Terminated @ 9 feet									

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23






JOB NO.: 22G183-4	DRILLING DATE: 8/16/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Ryan Bremer	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1445.2 feet MSL							
5		46			<u>OLDER ALLUVIUM</u> : Brown fine to medium Sandy Silt, trace Clay, dense-moist		8					
		67			Brown Silty fine to medium Sand, trace Clay, trace coarse Sand, little Calcareous veining, very dense-moist		8			46		
					Boring Terminated at 9'							

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23



JOB NO.: 22G183-4	DRILLING DATE: 8/16/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Ryan Bremer	READING TAKEN: At Completion

FIELD RESULTS				GRAPHIC LOG	DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)			DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1446.0 feet MSL							
5		31			<u>OLDER ALLUVIUM</u> : Brown Silty fine to medium Sand, dense-damp		4					
		85/11"			Brown Silty fine to medium Sand, little Clay, trace coarse Sand, weakly cemented, very dense-damp to moist		6			46		
					Boring Terminated @ 7½ feet							

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23



JOB NO.: 22G183-4				DRILLING DATE: 8/16/23				WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: ---				
LOCATION: Perris, California				LOGGED BY: Ryan Bremer				READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1445.3 feet MSL							
					OLDER ALLUVIUM: Brown fine Sandy Silt, trace medium Sand, very dense-damp		4					
5					Brown Silty fine to medium Sand, trace coarse Sand, very dense-damp		5			44		
		50/5"										
Boring Terminated @ 7 feet												

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23



JOB NO.: 22G183-4				DRILLING DATE: 8/16/23				WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: ---				
LOCATION: Perris, California				LOGGED BY: Ryan Bremer				READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5		77/11"			SURFACE ELEVATION: 1443.9 feet MSL  OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace Clay, trace coarse Sand, very dense-damp to moist		6			44		
					Boring Terminated @ 5½ feet							

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23



JOB NO.: 22G183-4					DRILLING DATE: 8/16/23					WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development					DRILLING METHOD: Hollow Stem Auger					CAVE DEPTH: ---				
LOCATION: Perris, California					LOGGED BY: Ryan Bremer					READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS		
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)			
5	X	32			<p>SURFACE ELEVATION: 1444.5 feet MSL</p> <p>OLDER ALLUVIUM: Brown Silty fine to medium Sand, little Clay, trace coarse Sand, weakly cemented, dense-damp</p>		5			38				
					Boring Terminated @ 6 feet									

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23



JOB NO.: 22G183-4	DRILLING DATE: 8/16/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Ryan Bremer	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5		68			SURFACE ELEVATION: 1444.2 feet MSL  OLDER ALLUVIUM: Brown Silty fine to medium Sand to fine to medium Sandy Silt, trace Clay, weakly cemented, very dense-damp		6			47		
					Boring Terminated at 6 feet							

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23



JOB NO.: 22G183-4	DRILLING DATE: 8/16/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Ryan Bremer	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5		62			<p>SURFACE ELEVATION: 1442.8 feet MSL</p> <p>OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace Clay, trace coarse Sand, very dense-damp</p>		6			50		
					Boring Terminated @ 6 feet							

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23





JOB NO.: 22G183-4	DRILLING DATE: 8/16/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Ryan Bremer	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5		42			<p>SURFACE ELEVATION: 1442.5 feet MSL</p> <p>OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace Clay, trace coarse Sand, dense-damp</p>		6					
					<p>Boring Terminated @ 6½ feet</p>							

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23



JOB NO.: 22G183-4				DRILLING DATE: 8/16/23				WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: ---				
LOCATION: Perris, California				LOGGED BY: Ryan Bremer				READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5		50/5"			SURFACE ELEVATION: 1443.0 feet MSL <u>OLDER ALLUVIUM</u> : Brown fine to medium Sandy Silt to Silty fine to medium Sand, trace Clay, very dense-damp		6			50		
					Boring Terminated @ 6½ feet							

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23



JOB NO.: 22G183-4	DRILLING DATE: 8/16/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Ryan Bremer	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5		61			SURFACE ELEVATION: 1440.2 feet MSL  <u>OLDER ALLUVIUM</u> : Brown Silty fine to medium Sand, trace Clay, trace coarse Sand, weakly cemented, very dense-damp to moist		6			44		
					Boring Terminated @ 5 feet							

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23



JOB NO.: 22G183-4	DRILLING DATE: 8/16/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Ryan Bremer	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
	<div></div>	57		<div></div>	<div>SURFACE ELEVATION: 1439.7 feet MSL</div> <div>OLDER ALLUVIUM: Light Brown Silty fine to medium Sand, trace Clay, trace coarse Sand, weakly cemented, very dense-damp</div>		4			38		
					<div>Boring Terminated @ 4½ feet</div>							

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23




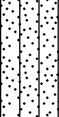


JOB NO.: 22G183-4				DRILLING DATE: 8/15/23				WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: ---				
LOCATION: Perris, California				LOGGED BY: Michelle Krizek				READING TAKEN: At Completion				
FIELD RESULTS				DESCRIPTION	LABORATORY RESULTS						COMMENTS	
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)		GRAPHIC LOG	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)		ORGANIC CONTENT (%)
					SURFACE ELEVATION: 1438.8 feet MSL							
					OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace Clay, trace coarse Sand, trace Calcareous veining, weakly cemented, medium dense to dense-moist		10					
5							11			37		
					Boring Terminated @ 5½ feet							

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23



JOB NO.: 22G183-4	DRILLING DATE: 8/15/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Michelle Krizek	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1438.0 feet MSL							
5		44			OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace Clay, trace to little coarse Sand, trace Calcareous veining, weakly cemented, dense-damp		4					
		50			Brown Silty fine to medium Sand, little Clay, trace coarse Sand, trace to little Calcareous veining, weakly cemented, very dense-moist		10			43		
					Boring Terminated @ 6½ feet							

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23







JOB NO.: 22G183-4	DRILLING DATE: 8/15/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Michelle Krizek	READING TAKEN: At Completion

FIELD RESULTS					LABORATORY RESULTS							COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1438.6 feet MSL							
		42			OLDER ALLUVIUM: Brown Silty fine to medium Sand, little Clay, trace coarse Sand, trace Calcareous veining, dense-damp		5					
5		50			@ 4½ feet, weakly cemented, very dense		5			41		
					Boring Terminated @ 6 feet							

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23







JOB NO.: 22G183-4					DRILLING DATE: 8/15/23					WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development					DRILLING METHOD: Hollow Stem Auger					CAVE DEPTH: ---				
LOCATION: Perris, California					LOGGED BY: Michelle Krizek					READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS		
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)			
SURFACE ELEVATION: 1438.6 feet MSL														
5		16			<u>ALLUVIUM</u> : Dark Brown fine to medium Sandy Silt, little coarse Sand, medium dense-moist		10							
		37			<u>OLDER ALLUVIUM</u> : Dark Brown Silty fine to medium Sand, little Clay, trace coarse Sand, trace Calcareous veining, weakly cemented, dense-moist		9			39				
Boring Terminated @ 7½ feet														

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23





JOB NO.: 22G183-4					DRILLING DATE: 8/16/23					WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development					DRILLING METHOD: Hollow Stem Auger					CAVE DEPTH: ---				
LOCATION: Perris, California					LOGGED BY: Ryan Bremer					READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS		
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)			
5	 	42			<u>OLDER ALLUVIUM</u> : Brown Silty fine to medium Sand to fine to medium Sandy Silt, trace coarse Sand, dense-damp		5							
		50/5"			Brown Silty fine to medium Sand, trace Clay, trace coarse Sand, very dense-damp to moist		6			41				
					Boring Terminated @ 7½ feet									

TBL 22G183-4.GPJ SoCalGeo.GDT 9/22/23



JOB NO.: 22G183-4	DRILLING DATE: 8/16/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Ryan Bremer	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
5	X	73/11"			<p>SURFACE ELEVATION: 1442.2 feet MSL</p> <p>OLDER ALLUVIUM: Brown Silty fine to medium Sand to fine to medium Sandy Silt, trace Clay, trace coarse Sand, weakly cemented, very dense-damp</p>		7			49		
					Boring Terminated at 6 feet							


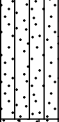


TBL 22G183-4.GPJ SoCALGEO.GDT 9/22/23



JOB NO.: 22G183-4					DRILLING DATE: 8/15/23					WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development					DRILLING METHOD: Hollow Stem Auger					CAVE DEPTH: ---				
LOCATION: Perris, California					LOGGED BY: Michelle Krizek					READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS		
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)			
					SURFACE ELEVATION: 1434.5 feet MSL									
		31			OLDER ALLUVIUM: Brown Silty fine to medium Sand, little coarse Sand, trace Clay, trace fine root fibers, dense-damp to moist		7							
5		40			Brown Silty fine to medium Sand to fine to medium Sandy Silt, trace Clay, trace coarse Sand, trace Calcareous veining, dense-moist		9			52				
Boring Terminated @ 6 feet														

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23



JOB NO.: 22G183-4					DRILLING DATE: 8/15/23					WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development					DRILLING METHOD: Hollow Stem Auger					CAVE DEPTH: ---				
LOCATION: Perris, California					LOGGED BY: Michelle Krizek					READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS		
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)			
5		46			OLDER ALLUVIUM: Brown Silty fine to medium Sand to fine to medium Sandy Silt, little Clay, trace to little coarse Sand, trace to little Calcareous veining, dense-damp		7							
		45			Brown Silty fine to medium Sand, little Clay, trace coarse Sand, dense-damp		8			46				
Boring Terminated @ 6 feet														

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23




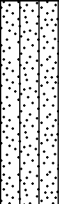

JOB NO.: 22G183-4	DRILLING DATE: 8/15/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Michelle Krizek	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1438.6 feet MSL							
					OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace coarse Sand, trace fine root fibers, dense-damp		3					
					@ 3 feet, trace Calcareous veining, little Clay		6			37		
					Boring Terminated @ 4½ feet							

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23



JOB NO.: 22G183-4	DRILLING DATE: 8/15/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Michelle Krizek	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1439.8 feet MSL							
5		29			OLDER ALLUVIUM: Brown Silty fine to medium Sand, little Clay, trace coarse Sand, trace Calcareous veining, trace fine root fibers, medium dense-damp		4					
		53			@ 3½ feet, very dense		5			46		
					Boring Terminated @ 5 feet							

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23



JOB NO.: 22G183-4	DRILLING DATE: 8/15/23	WATER DEPTH: Dry
PROJECT: Harvest Landing Industrial Development	DRILLING METHOD: Hollow Stem Auger	CAVE DEPTH: ---
LOCATION: Perris, California	LOGGED BY: Michelle Krizek	READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1439.5 feet MSL							
5		34			OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace Clay, trace coarse Sand, trace fine root fibers, trace Calcareous veining, dense-damp to moist		7					
		43			@ 4 feet, trace to little Calcareous veining, little Clay, moist		9			34		
					Boring Terminated @ 5½ feet							

TBL 22G183-4.GPJ SoCALGEO.GDT 9/22/23



JOB NO.: 22G183-4				DRILLING DATE: 8/15/23				WATER DEPTH: Dry				
PROJECT: Harvest Landing Industrial Development				DRILLING METHOD: Hollow Stem Auger				CAVE DEPTH: ---				
LOCATION: Perris, California				LOGGED BY: Michelle Krizek				READING TAKEN: At Completion				
FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG		DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	
					SURFACE ELEVATION: 1440.0 feet MSL							
					OLDER ALLUVIUM: Brown Silty fine to medium Sand to fine to medium Sandy Silt, trace Clay, trace to little Calcareous veining, trace to little coarse Sand, trace fine root fibers, dense-moist		9					
5					Brown fine to medium Sandy Silt, little Clay, little Calcareous veining, medium dense-moist		12			59		
					Boring Terminated @ 7 feet							

TBL 22G183-4.GPJ SOCALGEO.GDT 9/22/23