

GLOBAL GEO-ENGINEERING, INC.

November 11, 2019
Project 7610-06

RH Anaheim Barn LLC
745 Merchant Street
Los Angeles, California 90021

Attention: Mr. Clay Cheek, Principal

Subject: Infiltration Rate
Proposed Hotel Development
1730 South Clementine Street
Anaheim, California

Dear Mr. Cheek:

1. INTRODUCTION

- a) As requested, we have conducted infiltration testing for the proposed on-site storm water disposal system to be constructed at the above referenced site located in Anaheim, California.
- b) An approximate location of the site is shown on the *Location Map, Figure 1*.
- c) The purpose of the study was to determine the infiltration rates for the proposed on-site storm water disposal system. The system may include a 10-foot deep infiltration basin or a 30-foot deep dry well if a favorable rate was not obtained by the testing the shallower boring.
- d) This report is subject to the Terms and Conditions enclosed to this report and incorporated herein by reference.

2. FIELD EXPLORATION

- a) Our firm conducted a geotechnical investigation of the site in 2018. The investigation included the drilling, logging and sampling of three borings to depths ranging from 30 to 50 feet below ground surface. No ground water was encountered in any of the borings.

- b) A total of two borings (Borings P-1 and P-2) were within the property for the purpose of conducting percolation testing. To prevent caving of the sidewalls during the percolation testing, 3-inch diameter perforated pipe with gravel rock encasement were installed in both of the borings.
- c) *Logs of Borings* are enclosed as *Figures 2 and 3*. The locations of the borings are shown on the *Boring Location Plan, Figure 4*. *Figure 4* also shows the locations of the borings drilled during the geotechnical field exploration.

3. **PERCOLATION TESTING**

- a) The borings were thoroughly pre-soaked for a period of 24 hours. The percolation testing was conducted on the next day following the pre-soak. Before the testing started, the borings were measured for any remaining water from the pre-soak. No water was found to remain in either of the percolation test borings. From a fixed reference point, the drop in the water level was measured in 2-minute intervals for all the borings. The borings were refilled after every reading.
- b) It was determined during the initial measurements that the water was percolating at a very high rate. As an acceptable rate could have been obtained from the shallow boring, after the discussions with the civil engineer, it was decided not to test the deeper boring.
- c) The drops in the water during the last reading period of 2 minutes. The field testing data is included in *Figure 5* and the corresponding percolation rate is shown below:

Boring No.	Date	Drop (Inches)	Percolation Rate (min/inch)
P-2 (10-foot deep)	November 8, 2019	48	0.04

- d) We used *Porchet* method to calculate the infiltration rate. The rates are shown below:

Boring No.	Infiltration Rate (inch/hour)
P-2	48

- e) These rates are calculated using a factor of safety of 1.0. Appropriate factor of safety should be utilized while designing the basin/dry well.

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Irvine, California
Geologists and Geotechnical Engineers







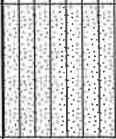

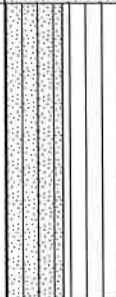

1730 Clementine Street
Anaheim, California

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LOG OF BORING P-1

Date : November 7, 2019
 Logged By : KBY
 Diameter of Boring : 8"
 Drilling Company : Cal Pac
 Drilling Rig : Mobile B-61

Drilling Method : Hollow Stem
 Sampling Method : SPT
 Hammer Weight (lbs) : 140
 Hammer Drop (in.) : 30

Depth in Feet	Sample	Field Moisture % Dry Weight	Dry Density lb./cubic ft.	Blow Count	Relative Compaction	Water Level	USCS	GRAPHIC	Sample Type	Water Levels	DESCRIPTION
									 Ring  Bulk  Standard Penetration Test	 Groundwater Encountered  Seepage Encountered	
0											AC Pavement 0-2.5"
0 - 5							ML				Sandy SILT: yellow to dark yellow brown, dry to damp @4' more Sandy
5 - 10				N=10			SM				Silty SAND: fine grained, dark yellow brown, dry to damp
10 - 20				N=11			SP				SAND: fine to medium grained, light gray, dry, loose
20 - 30				N=10			SM/ML				Silty SAND: fine grained, yellow brown, damp, loose with SILT interbeds
30 - 35							ML				Sandy SILT: olive brown, moist, medium stiff ALLUVIUM
Bottom of Boring at 30 feet: 1. No groundwater or seepage encountered 2. 3-inch diameter perforated pipe installed for percolation testing; Pipe encased in 3/4-inch diameter gravel rock											

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Figure 2

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LOG OF BORING P-2

Drilling Method : Hollow Stem
Sampling Method : SPT
Hammer Weight (lbs) : 140
Hammer Drop (in.) : 30

1730 Clementine Street
Anaheim, California

Date : November 7, 2019
Logged By : KBY
Diameter of Boring : 8"
Drilling Company : Cal Pac
Drilling Rig : Mobile B-61

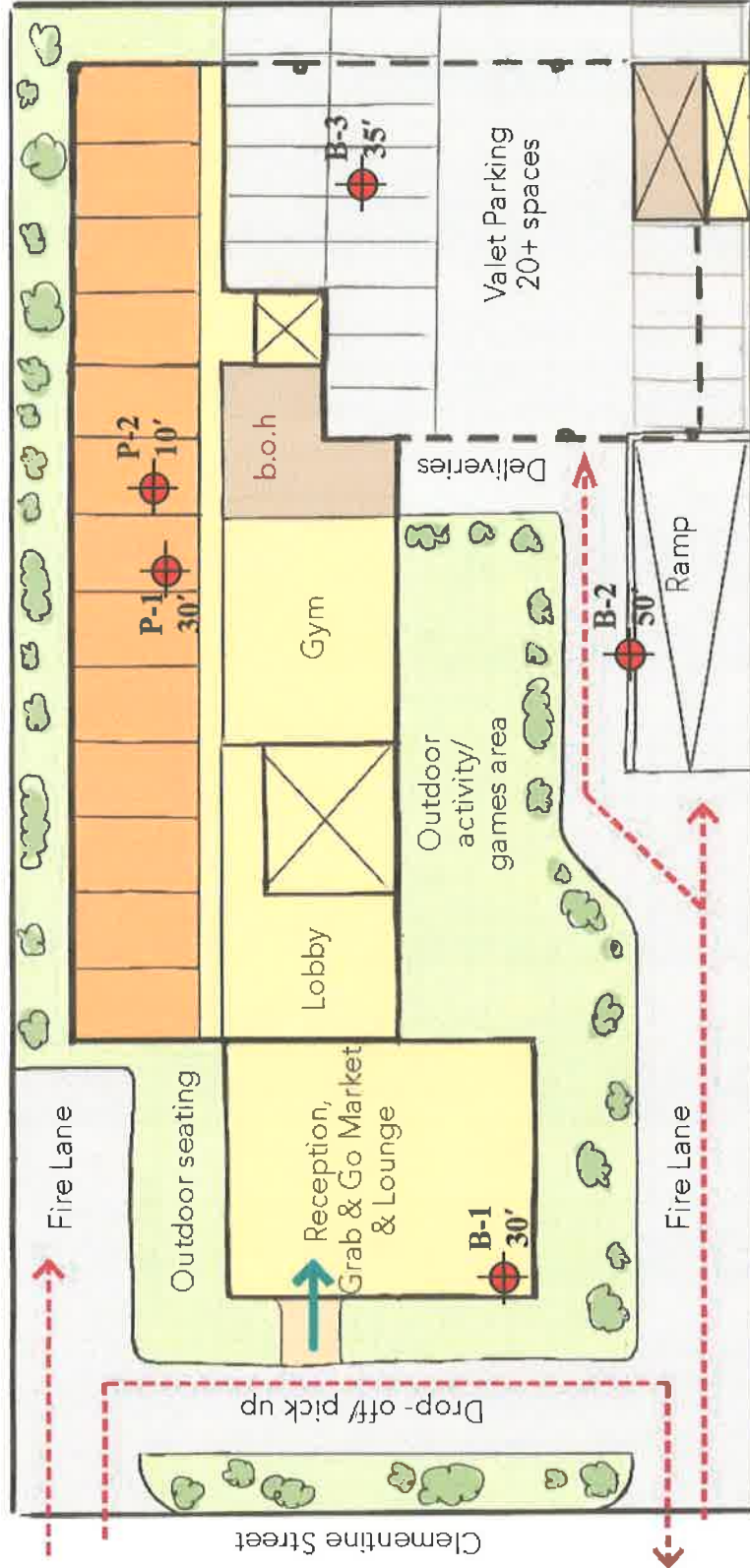
Project 7610-06

Depth in Feet	Sample	Field Moisture % Dry Weight	Dry Density lb./cubic ft.	Blow Count	Relative Compaction	Water Level	USCS	GRAPHIC	Sample Type	Water Levels	DESCRIPTION
									<input type="checkbox"/> Ring <input type="checkbox"/> Bulk <input type="checkbox"/> Standard Penetration Test	<input type="checkbox"/> Groundwater Encountered <input type="checkbox"/> Seepage Encountered	
0											AC Pavement 0-2.5"
0 - 5							ML				Sandy SILT: yellow brown to dark yellow brown, dry to damp, soft
5 - 10							SM				Silty SAND: fine grained, dark yellow brown, dry to damp, loose
10 - 10.5							SP				SAND: fine to medum grained, light gray, dry, loose
10.5 - 10.75											ALLUVIUM
10.75 - 10.8											Bottom of Boring at 10 feet:
10.8 - 10.9											1. No groundwater or seepage encountered
10.9 - 11.0											2. 3-inch diameter perforated pipe nstalled for percolation testing; Pipe encased in 3/4-inch diameter gravel rock

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Figure 3

BORING LOCATION PLAN

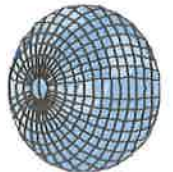


KEY



B-3 35' Approximate Location of Boring, Showing Total Depth
(Previous Report dated February 19, 2018)

P-2 10' Approximate Location of Boring, Showing Total Depth



GLOBAL GEO-ENGINEERING, INC.

GEOLOGIC AND SOILS ENGINEERING, IRVINE, CALIFORNIA

1730 South Clementine Street
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Figure No:

4

Field Percolation Test

Test Hole No:	P-2
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Initial Depth of Test Hole (D_i):	120 inches
Final Depth to Test Hole (D_T)	120 Inches
Diameter of Test Hole:	8 inches
Presoak Date:	11/7/2019
Water Level after Presoak:	0 inches
Test Date:	11/8/2019
Tested by:	ERV

Trial No.	ΔT	D_o	D_f	ΔD	Percolation Rate (min/in.)
	Time Interval (min.)	Initial Depth to Water	Final Depth to Water	Change in Water Level (in.)	
1	2	0	60	60	0.03
2	2	0	50	50	0.04
3	2	0	49	49	0.04
4	2	0	52	52	0.04
5	2	0	50	50	0.04
6	2	0	49	49	0.04
7	2	0	50	50	0.04
8	2	0	49	49	0.04
9	2	0	48	48	0.04
10	2	0	48	48	0.04
11	2	0	48	48	0.04
12	2	0	49	49	0.04
13	2	0	49	49	0.04
14	2	0	48	48	0.04
15	2	0	48	48	0.04

***Note** = D_o and D_f measured from the top of the ground surface

1730 South Clementine Street Anaheim, California		
Date: November 2019		Figure No:
Project No: 8330-06		5

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The opportunity to be of service is sincerely appreciated. If you have any questions or if we can be of further assistance, please call.

Very truly yours,

GLOBAL GEO-ENGINEERING, INC.



Mohan B. Upasani
Principal Geotechnical Engineer
RGE 2301
(Exp. March 31, 2021)



Enclosures:

Location Map
Logs of Borings
Boring Location Plan
Field Percolation Test Data
Terms and Conditions

- Figure 1
- Figures 2 and 3
- Figure 4
- Figure 5

TERMS AND CONDITIONS OF AUTHORIZATION

Consultant shall serve Client by providing professional counsel and technical advice regarding subsurface conditions consistent with the scope of services agreed-to between the parties. Consultant will use his professional judgment and will perform his services using that degree of care and skill ordinarily exercised under similar circumstances, by reputable foundation engineers and/or engineering geologists practicing in this or similar localities.

- In assisting Client, the Consultant may include or rely on information and drawings prepared by others for the purpose of clarification, reference or bidding; however, by including the same, the Consultant assumes no responsibility for the information shown thereon and Client agrees that Consultant is not responsible for any defects in its services that result from reliance on the information and drawings prepared by others. Consultant shall not be liable for any incorrect advice; judgment or decision based on any inaccurate information furnished by the Client or any third party, and Client will indemnify Consultant against claims, demands, or liability arising out of, or contribute to, by such information.
- Unless otherwise negotiated in writing, Client agrees to limit any and all liability, claim for damages, cost of defense, or expenses to be levied against Consultant on account of design defect, error, omission, or professional negligence to a sum **not to exceed ten thousand dollars or charged fees whichever is less**. Further, Client agrees to notify any construction contractor or subcontractor who may perform work in connection with any design, report, or study prepared by Consultant of such limitation of liability for design defects, errors, omissions, or professional negligence, and require as a condition precedent to their performing the work a like limitation of liability on their part as against the Consultant. In the event the Client fails to obtain a like limitation of liability provision as to design defects, errors, omissions or professional negligence, any liability of the Client and Consultant to such contractor or subcontractor arising out of a negligence shall be allocated between Client and Consultant in such a manner that the aggregate liability of Consultant for such design defects to all parties, including the Client shall **not exceed ten thousand dollars or charged fees whichever is less**. No warranty, expressed or implied of merchantability or fitness, is made or intended in connection with the work to be performed by Consultant or by the proposal for consulting or other services or by the furnishing of oral or written reports or findings made by Consultant.
- The Client agrees, to the fullest extent permitted by law, to indemnify, defend and hold harmless the Consultant, its officers, directors, employees, agents and subconsultants from and against all claims, damages, liabilities or costs, including reasonable attorney's fees and defense costs, of any nature whatsoever arising from or in connection with the Project to the extent that said claims, damages, liabilities or costs arise out of the work, services, or conduct of Client or Client's contractors, subconsultants, or other third party not under Consultant's control. Client further agrees that the duty to defend set forth herein arises immediately and is not contingent on a finding of fault against Client or Client's contractors, subconsultants, or other third parties. Client shall not be obligated under this provision to indemnify Consultant for Consultant's sole negligence or willful misconduct.
- Client shall grant free access to the site for all necessary equipment and personnel and Client shall notify any and all possessors of the project site that Client has granted Consultant free access to the project site at no charge to Consultant unless expressly agreed to otherwise in writing.
- If Client is not the property owner for the subject Project, Client agrees that it will notify the property owner of the terms of this agreement and obtain said property owner's approval to the terms and conditions herein. Should Client fail to obtain the property owner's agreement as required herein, Client agrees to be solely responsible to Consultant for all damages, liabilities, costs, including litigation fees and costs, arising from such failure that exceed that limitation of Consultant's liability herein.
- Client shall locate for Consultant and shall assume responsibility for the accuracy of his representations as to the locations of all underground utilities and installations. Consultant will not be responsible for damage to any such utilities or installation not so located.
- Client and Consultant agree to waive claims against each other for consequential damages arising out of or relating to this agreement. Neither party to this agreement shall assign the contract without the express, written consent of the other party.
- Consultant agrees to cover all open test holes and place a cover to carry a 200-pound load on each hole prior to leaving project site unattended. Consultant agrees that all test holes will be backfilled upon completion of the job. However, Client may request test holes to remain open after completion of Consultants work. In the event Client agrees to pay for all costs associated with covering and backfilling said test holes at a later date, and Client shall indemnify, defend and hold harmless Consultant for all claims, demands and liabilities arising from his request, except for the sole negligence of the Consultant, to the extent permitted by law.
- Consultant shall not be responsible for the general safety on the job or for the work of Client, other contractors and third parties.
- Consultant shall be excused for any delay in completion of the contract caused by acts of God, acts of the Client or Client's agent and/or contractors, inclement weather, labor trouble, acts of public utilities, public bodies, or inspectors, extra work, failure of Client to make payments promptly, or other contingencies unforeseen by Consultant and beyond reasonable control of the Consultant.
- In the event that either party desires to terminate this contract prior to completion of the project, written notification of such intention to terminate must be tendered to the other party. In the event Client notifies Consultant of such intention to terminate Consultant's services prior to completion of the contract, Consultant reserves the right to complete such analysis and records as are necessary to place files in order, to dispose of samples, put equipment in order, and (where considered necessary to protect his professional reputation) to complete a report on the work performed to date. In the event that Consultant incurs cost in Client's termination of this Agreement, a termination charge to cover such cost shall be paid by Client.
- If the Client is a corporation, the individual or individuals who sign or initial this Contract, on behalf of the Client, guarantee that Client will perform its duties under this Contract. The individual or individuals so signing or initialing this Contract warrant that they are duly authorized agents of the Client.
- Any notice required or permitted under this Contract may be given by ordinary mail at the address contained in this Contract, but such address may be changed by written notice given by one party to the other from time to time. Notice shall be deemed received in the ordinary course of the mail. This agreement shall be deemed to have been entered into the County of Orange, State of California.

LIMITATIONS

Our findings, interpretations, analyses, and recommendations are professional opinions, prepared and presented in accordance with generally accepted professional practices and are based on observation, laboratory data and our professional experience. Consultant does not assume responsibility for the proper execution of the work by others by undertaking the services being provided to Client under this agreement and shall in no way be responsible for the deficiencies or defects in the work performed by others not under Consultant's direct control. No other warranty herein is expressed or implied.