

GEOTECHNICAL INTERNATIONAL  
LAN & ASSOCIATES

Topographic Survey & Civil . Structural . Geotechnical Engineering

13139 Harbor Boulevard, Garden Grove, CA 92843

Tel: (714) 414-9215, Fax: (714) 537 – 7974, Email: [Lanpham9@hotmail.com](mailto:Lanpham9@hotmail.com)

---

Project No. G1710418

December 23, 2017

Michael Barnett  
NRI PORTFOLIOS, LLC  
9587 Bolsa Avenue  
Westminster, CA 92683  
(949) 228 – 8644  
[9maxmike@gmail.com](mailto:9maxmike@gmail.com)

**Subject: Percolation Testing For Proposed New Residential Development  
"Mountain View Apartments", 320 & 330 S. Monte Vista Street, La  
Habra, California 90631.**

Dear Mr. Barnett:

In accordance with the requirements of the controlling governmental agency and per your request and authorization, we have performed a percolation testing for the subject property. This report presents the results of our percolation testing for this project.

**SITE DESCRIPTION**

The subject property is located at 320 & 330 S. Monte Vista Street, La Habra, California 90631. At the time of our field exploration, the existing improvement objects (which will be demolished and replaced with new buildings) were still occupying the property.

## **DRILLING TEST HOLES**

Two test holes used as percolation borings have been drilled using a hollow-stem auger drilling equipment. The approximate locations of the test holes are shown on Figure 1. Geotechnical logs of the borings are presented in Appendix A.

## **SUBSURFACE SOILS CONDITIONS**

The subsurface soil conditions encountered in our borings consisted predominately of silty clay to the depths explored. The encountered soils are relatively uniform from the ground surface to bottom of the test hole. Please see the geotechnical boring logs included in Appendix A for additional data, as needed.

## **PERCOLATION TESTING**

Percolation testing was performed in general accordance with the procedure of the Technical Guidance Document (TGD).

The continuous pre-soak (falling-head) test procedure was utilized for testing. Water was allowed to presoak in each test hole prior to obtaining test readings. Following the presoak period, the drop in water level in each hole was monitored every 10 minutes. Test holes were refilled following each reading or when the water depth was below 6 inches. The drop in water level was recorded to the nearest 1/10th inch.

## **TEST RESULTS**

Our test results are included in Appendix B.

The "Porchet Method" equation has been used to convert the recorded percolation rates to the infiltration rates. The results are included in Appendix B

The final calculated infiltration rates are summarized below:

<b>Test Hole No.</b>	<b>Rate (IN/HOUR)</b>
2	0.84
3	0.53

Based on the Worksheet H (Page VII-35) of the TGD, a factor of the safety of 2 can be used for this project.

Application of a factor of safety of 2 to the above lower measured infiltration rate of 0.53 in./hr., the design infiltration rate is 0.26 in/hr which is recommended to be used for the site.

## CLOSURE

The followings are attached and complete our report:

Appendix A – Geotechnical Logs Of Test Holes  
Appendix B – Percolation Test Data

Figure 1 – Boring Location Map

If you have any questions or require clarification, please contact this office. This opportunity to be of service is sincerely appreciated.

Very truly yours,



Lan N. Pham, P.E.  
Chief Geotechnical Engineer  
RGE686, Exp. 3/31/2019



## APPENDIX A

# **GEOTECHNICAL LOGS OF TEST HOLES**

# GEOTECHNICAL INTERNATIONAL

GEOTECHNICAL ENGINEERING

Site Name		320-330 S. Monte Vista St.		Date		11/6/2017			
Project Number		04-119.50		Site Address		320-330 S. Monte Vista St., La Habra			
Equipment		Hollow Stem Flight Auger		Drive Weight		140 lbs			
Average Drop		30 inches		Elevation (ft)		267 (Assumed)			
Hole Diameter		8 inches		Eng/Geologist		HW			
Depth, ft	Elev,ft	Graphic Log	Sample No.	Drive Sample	Blows/ft	Dry Den,pcf	Moisture,%	U.S.C.S.	GEOTECHNICAL DESCRIPTION
		[Hatched Area]							@ 0 - 12": top soil @ 1'-5': Brown silty clay, damp, very stiff to hard
5	262		S-1		18	-	11.5	CL	@ 5': Brown silty clay, damp, very stiff
10	257		S-2		22	-	15.9	CL	@ 10': same as before
15	252								Total Depth: 10 feet No Groundwater Encountered
20	247								
25	242								
30	237								

**BORING NO. B-2**

# GEOTECHNICAL INTERNATIONAL

GEOTECHNICAL ENGINEERING

Site Name		320-330 S. Monte Vista St.		Date		11/6/2017			
Project Number		04-119.50		Site Address		320-330 S. Monte Vista St., La Habra			
Equipment		Hollow Stem Flight Auger		Drive Weight		140 lbs			
Average Drop		30 inches		Elevation (ft)		267 (Assumed)			
Hole Diameter		8 inches		Eng/Geologist		HW			
Depth, ft	Elev. ft	Graphic Log	Sample No.	Drive Sample	Blows/ft	Dry Den. pcf	Moisture, %	U.S.C.S.	GEOTECHNICAL DESCRIPTION
									@ 0 - 12": top soil @ 1'-5": Brown silty clay, damp, very stiff to hard
5	262		S-1		22	-	15.9	CL	@ 5": Brown silty clay, damp, very stiff
									Total Depth: 5 feet No Groundwater Encountered
10	257								
15	252								
20	247								
25	242								
30	237								

**BORING NO. B-3**

## Percolation Test Data Sheet (Boring No. B-2)

<b>Project Name:</b>	320-330 S. Monte Vista St.	<b>Date:</b>	12/5/2017
<b>Project No.:</b>	04-119.50	<b>Tested By:</b>	HW
<b>Project Location:</b>	320-330 S. Monte Vista St., La Habra	<b>Depth of Test Hole (ft.):</b>	10
		<b>Diameter of Test Hole (in.):</b>	8
		<b>USCS Classification:</b>	CL

Trial No.	Start Time	Stop Time	Time Interval (min.)	Initial Depth to Water (in.)	Final Depth to Water (in.)	Change in Water Level (in.)	Ave. Depth to Bottom (in.)	Infiltration Rate (in./hr.)
1	11:15	11:40	25	18	40	22	91	1.14
2	11:40	12:05	25	18	37	19	92.5	0.97
3	12:05	12:35	30	18	36	18	93	0.76
4	12:35	13:05	30	18	35	17	93.5	0.71
5	13:05	13:35	30	18	35	17	93.5	0.71
6	13:35	14:05	30	18	34	16	94	0.67
7	14:05	14:35	30	18	34	16	94	0.67
8	14:35	15:05	30	18	31	13	95.5	0.53

**Designed Infiltration Rate =      0.53      inch/hour**

## Percolation Test Data Sheet (Boring No. B-3)

<b>Project Name:</b>	320-330 S. Monte Vista St.	<b>Date:</b>	12/5/2017
<b>Project No.:</b>	04-119.50	<b>Tested By:</b>	HW
<b>Project Location:</b>	320-330 S. Monte Vista St., La Habra	<b>Depth of Test Hole (ft.):</b>	5
		<b>Diameter of Test Hole (in.)</b>	8
		<b>USCS Classification:</b>	CL

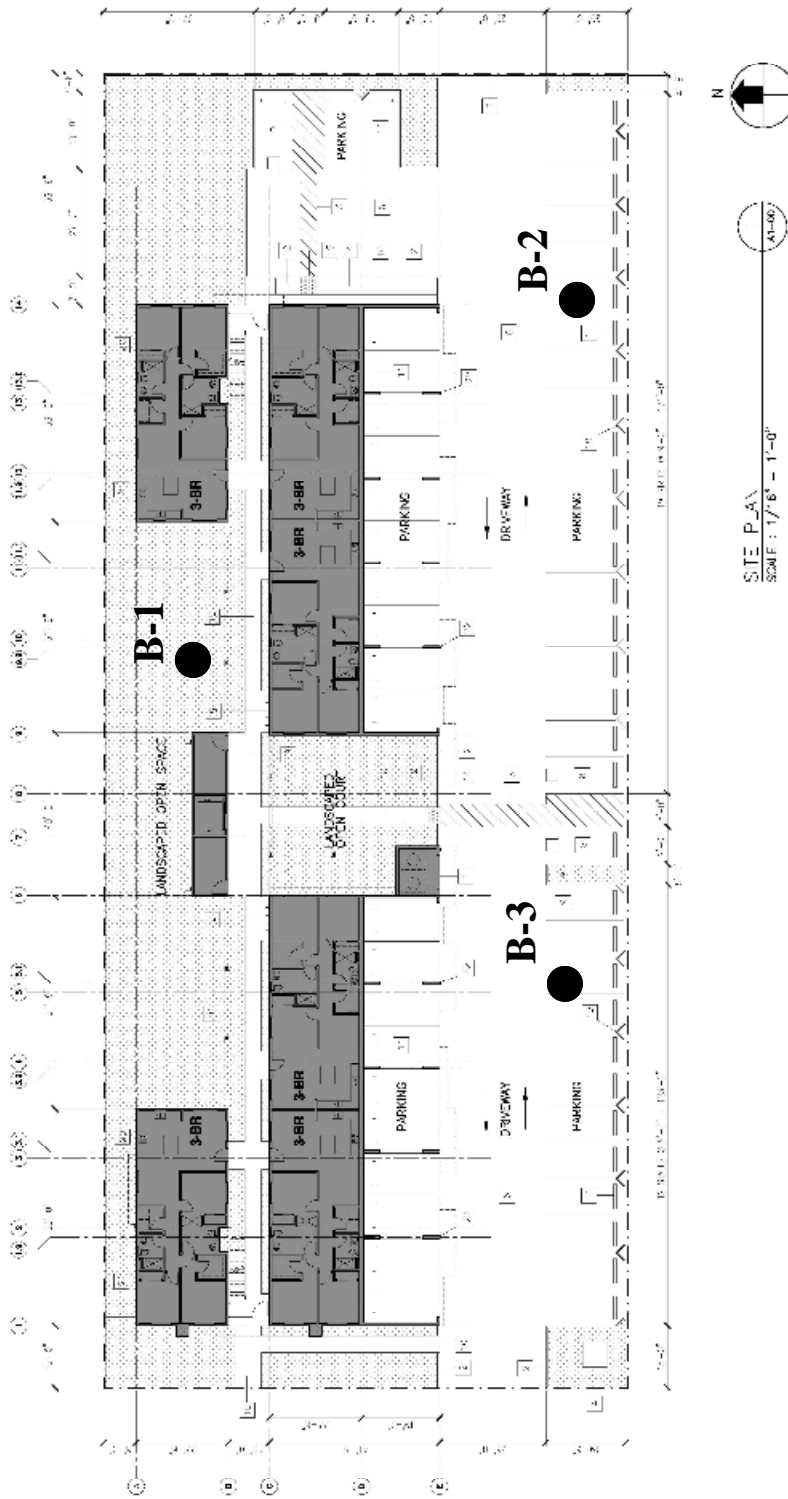
Trial No.	Start Time	Stop Time	Time Interval (min.)	Initial Depth to Water (in.)	Final Depth to Water (in.)	Change in Water Level (in.)	Ave. Depth to Bottom (in.)	Infiltration Rate (in./hr.)
1	11:00	11:10	10	10	18	8	46	2.00
2	11:25	11:35	10	10	16	6	47	1.47
3	11:35	11:45	10	10	15	5	47.5	1.21
4	11:45	11:55	10	10	15	5	47.5	1.21
5	11:55	12:05	10	10	14	4	48	0.96
6	12:05	12:15	10	10	13.5	3.5	48.25	0.84
7	12:15	12:25	10	10	13.5	3.5	48.25	0.84
8	12:25	12:35	10	10	13.5	3.5	48.25	0.84

**Designed Infiltration Rate = 0.84 inch/hour**



## APPENDIX B

### **PERCOLATION TEST DATA**



**LEGEND**

**B-3** ● Approximate Location of Boring B-3

**GEOTECHNICAL INTERNATIONAL**

*Geotechnical Engineering*

**BORING LOCATION MAP**

**320-330 S. Monte Vista St.**

**PROJECT NO. 04-119.50**

**FIGURE 1**