Attachment 6

Phone (831) 427-1770 Fax (831) 427-1794

February 12, 2015

Project No. SCR-0818.1

NPI FUND II, LLC % Hamilton Swift Land Use Consultants 500 Chestnut Street, Suite 100 Santa Cruz, California 95060

Subject:

Revised Percolation Test Results

Reference:

Proposed Mixed-Use Retail and Condominium Project

3800 Portola Drive APN 032-092-01, 05

Santa Cruz County, California

Dear Mr. Swift:

The percolation rate presented in our letter dated October 2, 2014 represented the raw field data from our test. The percolation rate to be used in design of the retention system should represent the actual infiltration rate of the soil. We have revised our calculations and the actual infiltration rates to be used design are presented below.

PERCOLATION T	EST DATA			
TEST BORING NUMBER	BORING DEPTH (ft)	PERCOLA' (INCHES/HR)	TION RATE (MIN/IN)	TEST DATE
1	10.5	.0002	300,000	7/8/14
2	15.0	3.56	16.9	7/8/14
3	15.0	6.19	9.7	7/8/14
4	10.3	.0003	200,000	7/8/14

DEES & ASSOCIATES, INC.

Rebecca L. (Dees) Boyd Geotechnical Engineer

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G.E. 2623

Attachments

Copies:

3 to Addressee

1 to Ifland Engineers



Project No.	SCR-0818.1		Percolation Test	Method
Project Name:	Portola Drive		Falling Head	12
Date:	2/12/15		Constant Head	
Performed By:	88			
Test No:	1			
Boring Diameter (inches)			
Diameter of Insert Pipe (inches)		Design Perc	3.50 F 1000 A 200 B 200 B 4	
Void Ratio of Annu	ılus Fill	0.4	Rate (Q//	ι Δτη
			0.0002 i	n/hr
Measured Flow in	Field (in/hr)	0.0339	*	
Depth of Infiltration Zone (ft) 9.9				
				Measured Flow in Fighas been adjusted for
	Constant Head	d Test Me	thod	and volume.
Volume of water	infiltrated in 1 ho	our (cf/hr)	0.00	
Surface area of infiltration zone (sf)			0.00	nermannelungum karangapamagamaga, ku dan
Volume of water	Falling Head			Ter frankrijski klasika et serken v. a.
Volume of water infiltrated in 1 hour (cf/hr) Depth of infiltration Zone = Average Perc Depth			9.9	
Area of boring (st	F) 0.1	96		
Area of insert pip	oe (sf) 0.0	49		engelsen (disk Pringle en prinsenhagt de solg meder disk en de solg de
Area of Annulus ((sf) 0.1	47		to the contraction of the contra
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	SCR-0818.1		Percolation Test Method		
Project Name:	Portola Drive		Falling Head	' \	
Date:	2/12/15		Constant Head		
Performed By:	ВВ				
Test No:	2				
Boring Diameter	(inches)	6	Design		
Diameter of Insert Pipe (inches) 3		Percolation Ra	ite		
retire at the company of the company		0.4	(Q/A*Δt)		
			3.56 in/h	ir	
Measured Flow in Field (in/hr) 263.9					
Depth of Infiltration Zone (ft) 44					
	Constant Head	Test Met	hod		
olume of wate	r infiltrated in 1 ho	ur (cf/hr)	0.00	10.00 FP-0 -0 Vis. southers (19.4 Fishers for	
Surface area of	infiltration zone (s	if)	0.00		
	Falling Head T	est Meth	od		
Volume of water infiltrated in 1 hour (cf/hr)			1.31		
Jepth of Infiltra	tion Zone = Average	e Perc Depth	4.4		
rea of boring (s rea of insert pi	A COLUMN TO THE COLUMN TO A COLUMN TO THE CO	1111	Top 10.5 fe	et of soil has a	
entre en	And the second of the second o	And the second and th	infiltration rate of .000 and was neglected in the of infiltration.		
rea of Annulus	to Other transfer of the Control of	· · · · · · · · · · · · · · · · · · ·			
olume of voids		ATS:	ii i ot intiltratio	าก	

	1				111
Project No.	SCR-0818.1			Percolation Test M	ethod
Project Name:	Portola Drive			Falling Head	図
Date:	2/12/15			Constant Head	
Performed By:	BB				
Test No:	3				
		(3-30)36 (15)	21 1 TOUR		9000000
Boring Diameter (i	nches)		6	Design	
Diameter of Insert	Pipe (inches)		3	Percolation Ra	ate
Void Ratio of Annu	lus Fill		0.4	(Q/A*∆t)	
				6.19 in/l	hr
Measured Flow in I	Field (in/hr)		458.6		, Section 1
Depth of Infiltratio			4.4		
c	onstant He	ad Tes	t Met	hod	
Volume of water	infiltrated in 1	hour (cf,	/hrj	0.00	
Surface area of in	filtration zone	(sf)		0.00	
	The state of the s				
	Falling Head				
Volume of water infiltrated in 1 hour (cf/hr) Depth of infiltration Zone = Average Perc Depth			2.27		
Departor illinitian	IOIT ZONE = AVE	age Per	Depth	4.4	er county of
					1
Area of boring (sf		0.196			AND From the St.
Area of insert pip	Provide the same of the same o).049		P P P P P P P P P P P P P P P P P P P	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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Area of Annulus (:).147			
Volume of voids (Volume per foot (THE R. P. LEWIS CO., LANSING MICH. LANSING MICH.).059			an damentan sayan minimizari da alam sayan da alam da a
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	4.7				

Project No.	SCR-0818.1		Percolation Test Method			
Project Name:	Portola Drive	Portola Drive		②.		
Date:	2/12/15	2/12/15				
Performed By:	BB 4					
Test No:						
Boring Diameter	(inches)	6				
Diameter of Inse	rt Pipe (inches)	3	Design Pero			
Void Ratio of Anı	ABM - 03/2 1520-425	0.4	Rate (Q/)	, au		
			0.0003	in/hr		
Measured Flow in Field (in/hr) 0.0432				54-111-247		
Depth of Infiltrat		9.4		77777000 S.J. 1820		
		A)	725			
	Constant Hea	d Test Me	thod			
Volume of wate	er infiltrated in 1 h	our (cf/hr)	0.00			
Surface area of	infiltration zone ((sf)	0.00			
A STATE OF THE PARTY OF THE PAR			V/G 42=4.004/01/02/02/02/03/03/03			
Volume of visto	Falling Head er infiltrated in 1 h					
	ation Zone = Avera	9.4				
Area of boring (sf) 0. :	196	VARIOUS INTERNATIONAL INTERNAT			
Area of insert p	ipe (sf) 0.0	149		er minimiter might be dest when consideration is the realized to an incidence of the court of separate pulpage		
Area of Annulus	(sf) 0.3	147		VALUE OF A PRINCE		
aca of Airingsas			parties and another services are an extensive many or the service of the service	Children Chiller A Andrews States Aura Chile - I an a common constant processing		



Phone: 831 427-1770 Fax: 831 427-1794

June 29, 2015

Project No. SCR-0818.1

NPI FUND II, LLC % Hamilton Swift Land Use Consultants 500 Chestnut Street, Suite 100 Santa Cruz, California 95060

Subject:

Proposed Retention System

Reference:

3800 Portola Drive APN 032-092-01, 05

Santa Cruz County, California

Dear Mr. Swift:

The soil at the site transition from thinly bedded silty sand, clayey, sand, silt, clay and gravel to well graded sand with varying amounts of gravel around 10 feet below grade. The transition to the sand with gravel was observed in a sample retrieved 10 to 11.5 feet below grade in Boring 1. The contact to the sand with gravel was estimated to be 11 to 12 feet below grade in Borings 2 and 3 based on the effect on the auger during drilling. The augers chatter and bounce when drilling gravelly soils.

The 10 feet deep test holes did not penetrate into the sandy gravelly soils and therefore had a slow infiltration rate. The 15 feet deep test holes did penetrate into the sandy gravelly soils and had a suitable infiltration rate. Although our test hole was performed at a depth of 15 feet, the same soil exists at shallower depths and the infiltration rate at 15 feet is suitable to use at shallower depths.

Because the top of the sandy gravelly layer varies across the site from 10 to 12 feet in depth, our firm will be on-site to observe the base of the retention system and verify the bottom of the trench exposes the sandy gravelly soil. The trench will be deepened as necessary to penetrate the sandy gravelly soils.

DEES & ASSOCIATES, INC.

Rebecca L. (Dees) Boyd Geotechnical Engineer G.E. 2623

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