

Geotechnical Engineering

PALI HIGHWAY RESURFACING VINEYARD BOULEVARD TO WAOKANAKA STREET HONOLULU, OAHU, HAWAII

Log of Boring

Approximate Ground Surface Elevation (feet): 34 * Approximate Ground Surface Elevation (feet): 34 * Description 12 101 52 7 Dark gray SAND (BASALTIC) with a little silt, medium dense, moist (cinder) Boring terminated at 6.5 feet * Elevations estimated from Topographic Survey Map provided by Wesley R. Segawa & Associates, Inc. on September 11, 2018	Labo	oratory	ield									
12 101 52 6 PBrown and gray SANDY GRAVEL (BASALTIC), dense, moist (base course) 8 Brown SANDY SILT, medium stiff, moist (volcanic ash) 7 5 Dark gray SAND (BASALTIC) with a little silt, medium dense, moist (cinder) 8 Brown SANDY SILT, medium stiff, moist (volcanic ash) * Elevations estimated from Topographic Survey Map provided by Wesley R. Segawa & Associates, Inc. on September 11, 2018	10			(%		20 23	25)				Approximate Ground Surface Elevation (feet): 34 *
12 101 52 6 P Brown and gray SANDY GRAVEL (BASALTIC), dense, moist (base course) 8 Brown SANDY SILT, medium stiff, moist (volcanic ash) 7 5 Dark gray SAND (BASALTIC) with a little silt, medium dense, moist (cinder) 8 Brown SANDY SILT, medium stiff, moist (volcanic ash) * Elevations estimated from Topographic Survey Map provided by Wesley R. Segawa & Associates, Inc. on September 11, 2018	Tests	re nt (%	ensity	ery ((%	atior ance foot	Per	(feet	a)	ပ		* *
12 101 52 6 P Brown and gray SANDY GRAVEL (BASALTIC), dense, moist (base course) 8 Brown SANDY SILT, medium stiff, moist (volcanic ash) 7 5 Dark gray SAND (BASALTIC) with a little silt, medium dense, moist (cinder) 8 Brown SANDY SILT, medium stiff, moist (volcanic ash) * Elevations estimated from Topographic Survey Map provided by Wesley R. Segawa & Associates, Inc. on September 11, 2018	ther '	loistu onter	ocf)	ore	ου (enetr esist	ockel sf)	epth	ampl	raphi	SCS	Description
dense, moist (base course) ML Brown SANDY SILT, medium stiff, moist (volcanic ash) 7 Dark gray SAND (BASALTIC) with a little silt, medium dense, moist (cinder) Boring terminated at 6.5 feet * Elevations estImated from Topographic Survey Map provided by Wesley R. Segawa & Associates, Inc. on September 11, 2018	0	ZO.	ΩĐ	NC NC	~	TX5	(t D	Q	S	Ö	Ω	
dense, moist (base course) Brown SANDY SILT, medium stiff, moist (volcanic ash) 7 Dark gray SAND (BASALTIC) with a little silt, medium dense, moist (cinder) Boring terminated at 6.5 feet * Elevations estImated from Topographic Survey Map provided by Wesley R. Segawa & Associates, Inc. on September 11, 2018		12	101			52		5 0	V	000	GP	Brown and gray SANDY GRAVEL (BASALTIC),
30 76 7 Dark gray SAND (BASALTIC) with a little silt, medium dense, moist (cinder) Boring terminated at 6.5 feet * Elevations estImated from Topographic Survey Map provided by Wesley R. Segawa & Associates, Inc. on September 11, 2018								() <u>-</u>	H	00		
30 76 7 Dark gray SAND (BASALTIC) with a little silt, medium dense, moist (cinder) Boring terminated at 6.5 feet * Elevations estImated from Topographic Survey Map provided by Wesley R. Segawa & Associates, Inc. on September 11, 2018		16				7		255	7			
30 76 7 Dark gray SAND (BASALTIC) with a little silt, medium dense, moist (cinder) Boring terminated at 6.5 feet * Elevations estImated from Topographic Survey Map provided by Wesley R. Segawa & Associates, Inc. on September 11, 2018								10 .	ŝ			
30 76 7 Dark gray SAND (BASALTIC) with a little silt, medium dense, moist (cinder) Boring terminated at 6.5 feet * Elevations estImated from Topographic Survey Map provided by Wesley R. Segawa & Associates, Inc. on September 11, 2018								5_				
* Elevations estimated from Topographic Survey Map provided by Wesley R. Segawa & Associates, Inc. on September 11, 2018		30	76			7		J	M			
Boring terminated at 6.5 feet * Elevations estImated from Topographic Survey Map provided by Wesley R. Segawa & Associates, Inc. on September 11, 2018									A		SP- SM	Dark gray SAND (BASALTIC) with a little silt,
Map provided by Wesley R. Segawa & Associates, Inc. on September 11, 2018								(S .			2500-500	medium dense, moist (cinder)
Map provided by Wesley R. Segawa & Associates, Inc. on September 11, 2018								58				* Flevations estimated from Topographic Survey
Associates, inc. on September 11, 2018								884				Map provided by Wesley R. Segawa &
								10-				Associates, inc. on September 11, 2018
								88 7.				
					19 <u>2</u>							
					77 <u>2</u>							
								20 -				
								15				
								13				
								255	5			
								55 				
								192				
								20-	2			
								(S .				
	4/8/18							36 -				
	d de la companya de l							18 <u>4</u>				
	OLAB											
	5							25-				
Date Started: January 14, 2019 Water Level: Very Not Encountered	Date Star	Date Started: January 14, 2019							1: 🐧		Not E	ncountered
Date Completed: January 14, 2019 Plate	Date Com	Date Completed: January 14, 2019							aest 16	250 200		
Date Started: January 14, 2019 Date Completed: January 14, 2019 Logged By: B. Aiu Drill Rig: CME-45C TRUCK (Energy Transfer Ratio = 78%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring Work Order: 6782-00(B) Driving Energy: 140 lb. wt., 30 in. drop	Logged B	-				- 9			h.c.			94 02 02 02 02 02 02 02 02 02 02 02 02 02
Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring A = 1 Work Order: 6782-00(B) Driving Energy: 140 lb. wt., 30 in. drop	Work Ord		(



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Log of Boring

Lab	oratory	ield							1			
ø		5	(%)			-					Approximate Ground Surface Elevation (feet): 75.5 *	
Test	ure nt (%	ensite	егу ((%)	ation ance	t Per	(feet	e e	<u>.</u> 2		3 8	
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	nscs	Description	
											6-inch ASPHALTIC CONCRETE	
	11	101			44		-	V	0000000	GP	Brown and gray SANDY GRAVEL (BASALTIC) , medium dense, moist (base course)	0 0
	31				9				ΤŤ	ML	Light brown SANDY SILT with a little	-
							3				decomposed gravel, stiff, moist (alluvium)	
	21	75			26		5 -	M				9 <u>.4</u>
							0.7		1.1.		Boring terminated at 6.5 feet	(47)
							S=					s e
							<u> </u>					82
							10-					1
							10-					10-
							102					194
							7/2					77 <u>4</u>
					_					()		
							15 -					1
							(8 <u>5</u>					882
												: No.
							14-					
												104
							20-					4/253
							-					
1/8/19							3-					500
GDT							194_					882
OLABS												
EDI GE				25-					222			
Date Sta	Date Started: January 15, 2019							1: 🐧		Not E	ncountered	\exists
Date Cor	Date Completed: January 16, 2019							and all	7/2	202020202 202020202	Plate	
Date Star Date Cor Logged I Total De Work Ore		B. Ai 6.5 fe				Orill Rig Orilling		hor			45C TRUCK (Energy Transfer Ratio = 78%) lid Stem Auger & AC Coring A _ 2	
Work Or		6782			Oriving					lid Stem Auger & AC Coring A - 2 o. wt., 30 in. drop	11	



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Log of Boring

Date Started: January 16, 2019 Date Completed: January 16, 2019 Date Started: January 16, 2019 Date Sta	Labo	Laboratory Fig.											
10 114 27/6* +60/3* 25/1* 27/6* +60/3* 25/1* 5-inch ASPHALTIC COXCRETE Brown and gray SILTY GRAVEL (BASALTIC), dense, moist (base course) Tan SILTY SAND (CORACLINE) with a little gravel (coralline), medium dense, moist (subbase course) Gray BASALT, medium hard to hard (basalt formation) Boring terminated at 5.25 feet)ther Tests	foisture content (%)	hy Density pcf)	ore tecovery (%)	(QD (%)	enetration lesistance clows/foot)	ocket Pen.	hepth (feet)	ample	raphic	SCS	Approximate Ground Surface Elevation (feet): 191 * Description	
Date Started: January 16, 2019 Water Level: ▼ Not Encountered Date Completed: January 16, 2019 Logged By: B. Aiu Drill Rig: CME-45C TRUCK (Energy Transfer Ratio = 78%) Total Depth: 5.25 feet Drilling Method: 4" Solid Stem Auger & AC Coring A - 3		10	114			27/6" +60/3" 25/1" 50/3"		5			GM SM	5-inch ASPHALTIC CONCRETE Brown and gray SILTY GRAVEL (BASALTIC), dense, moist (base course) Tan SILTY SAND (CORALLINE) with a little gravel (coralline), medium dense, moist (subbase course) Gray BASALT, medium hard to hard (basalt formation) Boring terminated at 5.25 feet	
Logged By: B. Aiu Drill Rig: CME-45C TRUCK (Energy Transfer Ratio = 78%) Total Depth: 5.25 feet Drilling Method: 4" Solid Stem Auger & AC Coring A - 3	Date Star	SANS ARRA	Shelph Colores		Water I	Leve	; A	_ N	Not E	partition of the control of the cont			
Total Depth: 5.25 feet Drilling Method: 4" Solid Stem Auger & AC Coring A - 3	Logged R	-	2000 money	1000	, ZUI9	1	Orill Ric	5 '		ſ	MF-	The state of the s	e
Treat Department of Delivery of the Country of the	Total Der			41.47		- 62865			100				2
Work Order: 6782-00(B) Driving Energy: 140 lb. wt., 30 in. drop	Work Ord			4-11-4-2-11-2-1-2-1									S



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Log of Boring

Labo	oratory			F	ield					
Tests	re nt (%)	ensity	Core Recovery (%)	(%)	ation ance /foot)	Pocket Pen. (tsf)	(feet)	e c		Approximate Ground Surface Elevation (feet): 254.5 *
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recov	RQD (%)	Penetration Resistance (blows/foot)	Pocke (tsf)	Depth (feet)	Sample Graphic	USCS	Description
, , , , , , , , , , , , , , , , , , , ,									GM	5-inch ASPHALTIC CONCRETE
	16	110			32			0000	GM S	Brown and gray SILTY GRAVEL (BASALTIC), medium dense, moist (base course)
	34				13		-		СН	Brown with gray mottling SILTY CLAY, stiff to very stiff, moist (saprolite)
TXUU S _u =1.8 ksf	32	88			19	2.8	5 — - -	X		
	32				23		10			grades to very stiff
	44	74			41	>4.5	15	X		50 50 51 51
	62				5		20		ML	Orangish brown with multi-color mottling CLAYEY SILT, medium stiff, moist (saprolite)
							:			Boring terminated at 21.5 feet
							_ مر			*
	tode	Ione	ory 17	2010	·	Motor	25	•	Net D	Inequatored
Date Com	pleted	l: Janu	1.00	SUBJECT OF STREET		Water 1		*		Encountered Plate
Logged B Total Dep	-	B. Ai 21.5				Drill Rig Drilling	C	od:		-45C TRUCK (Energy Transfer Ratio = 78%) blid Stem Auger & AC Coring A - 4
Work Ord			-00(B)			Driving				b. wt., 30 in. drop



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Log of Boring

ſ	Labo	ratory			F	ield						
I	ro.)	1	(%								Approximate Ground Surface Elevation (feet): 347 *
١	[ests	.e ıt (%)	nsity	ery (9	ation tnce foot)	Pen	(feet)	a.	ŭ		
	Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	nscs	Description
İ												7-inch ASPHALTIC CONCRETE
١		37	86			26		::	V	90	GM	Brown and gray SILTY GRAVEL (BASALTIC), medium dense, moist (base course)
١		*200	00000000					28 <u>4</u>	М		СН	Brown SILTY CLAY, stiff, moist (alluvium)
١		42				10		1857	T			64 Made NA 00007
١												
١								,,,			MH	Brown with multi-color mottling CLAYEY SILT,
١	LL=60	48	61			9	1.0	5 –	M			medium stiff, moist (saprolite)
١	PI=23 TXUU							70 <u>2</u>	П	\mathcal{W}		3
١	$S_u=0.9 \text{ ksf}$							-		\mathcal{M}	2	€
١												
١								- 18 <u>- 1</u>		\mathcal{U}		
١		53				8		10 –		111		grades with sand
١		A.O.8980.				50.00		18 7.	N			3
١								192		\mathcal{U}		
١									2	\mathcal{W}		
١											2	,
١								1.0				₹
١		51	73			20	4.5	15 –		\mathcal{M}		grades to stiff
١		01	10				1.0	(18 <u>4</u>	H	111	5	grades to suit
١											2	
١								257		\mathcal{U}		2
١								107		\mathcal{W}		3
١								19 <u>-2</u>				;
		20				42		20-			2	grades to hard
		39				43		2. 	1			grades to hard
8/19										M		Boring terminated at 21.5 feet
DT 4/												
ABS.G								08 <u>-</u>				
SEOL!								187				3
BORING LOG 6782-00(B).GPJ GEOLABS.GDT 4/8/19								25-				
00(B)	Date Start	ted:	Janu	ary 17	, 2019	V	Vater I	_eve	: 4	N	lot E	ncountered
6782-	Date Com	pleted	l: Janu	ary 17	, 2019						The state of the s	Plate
LOG	Logged B		B. Ai	100			Orill Rig					45C TRUCK (Energy Transfer Ratio = 78%)
RING	Total Dep		21.5				Orilling					lid Stem Auger & AC Coring A - 5
<u>0</u>	Work Ord	er:	6782	-00(B)		I	Oriving	Ene	rgy	: 1	.40 lb	o. wt., 30 in. drop



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Log of Boring

ı	Labo	oratory			F	ield		-				
	1000000			·	1450							Approximate Ground Surface Elevation (feet): 425.5 *
	ssts	(%)	sity	y (%	_	ion ice	en.	eet)				Elevation (feet): 425.5 *
	ar Te	ture	Den	y	%	etrat stan vs/fc	cet F	th (f	ple	ohic	Ś	
	Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	nscs	Description
					, re-12		Washington St.	, 100				19-inch ASPHALTIC CONCRETE
			22.15.4			10.00		9 8				
		52	71			32		18 <u>4</u>	V	000	GM	Brown and gray SILTY GRAVEL (BASALTIC), medium dense, moist (base course)
						1.0		285	Δ		СН	Brown SILTY CLAY, stiff, moist (alluvium)
		53				13			1			a 160 16 160
								2				
		58	65			19	2.8	5 –	M			
								7/2				
								-				Boring terminated at 6.5 feet
								: -				
								0 <u>4</u>				
								10				
								10-				
								52 7.	1			
								29 <u>4</u>	1			
								77 <u>2</u>	$ \ $			
								-				
								15 –				
								10				
								_	1			
								285				
								10-0	$ \cdot $			
								79 <u>4</u>	$ \ $			
								20-				
3/19												
DT 4/8					78 4	1						
ABS.G								88 <u>-</u>				
GEOL								187				
GPJ (,					25-	Ц					
-00(B).	Date Star	ted:	Janu	ary 22	, 2019	1	Water I	Leve	l: J	l N	lot E	ncountered
6782	Date Con		7-12/15 DESIGN	1000	, 2019					522		Plate
TOG	Logged B		B. Ai 6.5 fe			- 99	Drill Rig					45C TRUCK (Energy Transfer Ratio = 78%)
BORING_LOG 6782-00(B).GPJ GEOLABS.GDT 4/8/19	Total Dep Work Ord				Drilling Driving					lid Stem Auger & AC Coring A - 6 o. wt., 30 in. drop		
M	JIN OIU	7.5	5.02	2-00(B)					OJ			



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Log of Boring

Laboratory				F	ield						
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	SS	Approximate Ground Surface Elevation (feet): 382 *
Oth	Moi	Dry (pcf	Cor Rec	RQI	Pen Res (blo	Poc (tst)	Dep	San	Gra	nscs	Description
×											11-inch ASPHALTIC CONCRETE
	38	79			15		_	V		GM	Brown and gray SILTY GRAVEL (BASALTIC), medium dense, moist (base course)
	39				5					СН	Brown SILTY CLAY with a little gravel, medium stiff, moist (alluvium)
	45	71			10	2.0	5 —	M		CL	Brown with gray mottling SILTY CLAY, medium stiff, moist (saprolite)
							·				
							-				
	51				5		10-				
	J 1						10-0-	V			
							10-0				
							7/2				
							(S -0				
LL=38	57	71			14	>4.5	15 —	V			
PI=16 TXUU							88 <u>-</u>	Δ			
$S_u=1.5 \text{ ksf}$							250				
							88 .0				
	7 9				5		20-	Ţ			grades with gravel
							-				Boring terminated at 21.5 feet
							_				
							17				
Date Start	ate Started: January 17, 2019				T	Nater 1	Level	: 3		lot E	Incountered
Date Com	pleted	l: Janu	ary 18	120121111111111111111111111111111111111	3		724590478		83 776	200000000	Plate
Logged By Total Dep		B. Ai 21.5				Orill Rig Orilling		nod			-45C TRUCK (Energy Transfer Ratio = 78%) A - 7
Work Ord			-00(B)			Oriving					b. wt., 30 in. drop



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Log of Boring

Labo	Laboratory F									
Tests	re at (%)	ensity	Core Recovery (%)	(%	ation ance foot)	t Pen.	(feet)	a		Approximate Ground Surface Elevation (feet): 283.5 *
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recov	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample Graphic	NSCS	Description
		- M - M.								6-inch ASPHALTIC CONCRETE
							(-	90	GC	Brown and gray CLAYEY GRAVEL (BASALTIC), medium dense, moist (base course)
	40	78			26		1		МН	Brown with gray mottling CLAYEY SILT, stiff, moist (saprolite)
	41				9		18			-
	29	83			27		5 -			
LL=56 PI=15	49				7		10			grades to medium stiff
TXUU S _u =2.0 ksf	54	67			13	3.8	15 -			
	34				26		20		СН	Brown with multi-color mottling SILTY CLAY with a little sand, very stiff, moist (saprolite)
GEOLABO.GDI 470018							- 25			Boring terminated at 21.5 feet
	ate Started: January 18, 2019				717.		2000		NT .	
Date Star	pleted	l: Janu	ary 18		3	Water I		2004 7		Encountered Plate
Logged B Total Dep	th:	B. Ai 21.5	feet			Drill Rig Drilling	Metho	od:	4" So	-45C TRUCK (Energy Transfer Ratio = 78%) olid Stem Auger & AC Coring A - 8
Work Ord	er:	6782	-00(B)		8 8	Driving	Energ	gy:	1401	b. wt., 30 in. drop



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Log of Boring

Labo	oratory	ield	-			1		•				
Labe	natory		_		ieiu						Approximate Ground Surface	
sts	8	ity	%)		of)	en.	et)				Elevation (feet): 218 *	
T.	ure ent (ens	very	8	trati stan s/fo	et P	ı (fe	əle	pic	ιΛ		75
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	nscs	Description	
	20	0	R	PZ.	T K C	T =		S	U	י	6-inch ASPHALTIC CONCRETE	
	14	115			38		::E	V	05	GC	Brown and gray CLAYEY GRAVEL (BAS medium dense, moist (base course)	SALTIC), -
								Λ	00		medium dense, moist (base course)	42
	23				24				0/3/	СН	Brown SILTY CLAY with some gravel (b.	asaltic)
							355	Y		EGD	√ stiff, moist (fill)	/
					10/0"		10 .	1	7~		Gray BASALT, medium hard to hard (ba	salt
					Ref.		5 -				formation) Boring terminated at 4 feet	
							7/2					9/4
							85					0.5
							S=	-				9
							18 <u>-</u>					
							10					
							10-					N/C
						18 1	1				107	
					192					7 <u>7-4</u>		
				77 <u>2</u>					72			
							84 .					-
							15 -					X -1
							(8 <u>4</u>					14
							2/2					, , , , , , , , , , , , , , , , , , ,
												~~
							10 7					157
							702					77-2
							20-					7 <u>5-0</u>
81/0												1903
01.4/							36 -	1				2 -
5							88 <u>-</u>					82
FOLA							35					257
Date Star Date Com Logged B Total Dep Work Ord							25-					
Date Star	Date Started: January 24, 2019							l: 🕎		lot F	ncountered	
Date Con	AND	ALCONOLINA CONTRACTOR		1201 120 200 300		. ator 1		56 SA		.5(1)		Plate
Logged B		B. Ai			I	Orill Rig	g:		C	ME-	45C TRUCK (Energy Transfer Ratio = 78%)	
Total Dep		4 fee	t			Orilling		nod			AZONDO ANA ZONO ZONO ZONO ZONO ZONO ZONO ZONO	A - 9
Work Ord	er:		I	Oriving	Ene	rgy	1	40 11	o. wt., 30 in. drop	mau (K. 16778)		



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Log of Boring

Approximate Ground Surface Elevation (feet): 133.5 * Approximate Ground Surface Elevation (feet): 133.5 * Description 20 99 50 LL-57 16 24 17 84 333 Date Started: January 24, 2019 Date Started: January 24, 2019 Date Completed: January 24, 2019 Date Grant Ground Surface Elevation (feet): 133.5 * Description 9-inch ASPHALIC CONCENTE: 6P	Labo	Laboratory Field										
Date Started: January 24, 2019 Date Completed: January 24, 2019 Date Compl	100			99			25	_				Approximate Ground Surface Elevation (feet): 133.5 *
Date Started: January 24, 2019 Date Completed:	ests	t (%)	nsity	ery (9	(%)	ation tnce foot)	Pen	[eet]		r)		2.0.0.001 (0000). 100.0
Date Started: January 24, 2019 Date Completed:	ther	oistu	ry De	ore ecove	6) GÒ	enetra esista lows/	ocket sf)	epth (ample	raphi	SCS	Description
Date Started: January 24, 2019 Date Started: January 24, 2019 Date Started: January 24, 2019 Date Completed: January 24, 2019 Date Comple		ΣÚ	<u>D</u>	O'A	R	7 X &	P.	Ω	Ś	Ü	n	-
LL=57 16 24 24 Dark gray and conglish tan SLTY CLAY with some gravel and cobbles (basalitc), very stiff, moist (iii) 17 84 33 5 MIII Dark brown with some orangish tan CLAYEY SLT with some sand (basalitc), very stiff, moist (alluvium) Boring terminated at 6.5 feet Date Started: January 24, 2019 Date Completed: January 24, 2019 A - 10		20	99			50		::e		7////	GP	
Date Started: January 24, 2019 Date Completed: January 24, 2019 D		30.09488				0.0280000		586	H		СН	dense, moist (base course)
Date Started: January 24, 2019 Date Completed: January 24, 2019 D		16				24			4			Dark gray and orangish tan SILTY CLAY with some gravel and cobbles (basaltic) very stiff
Date Started: January 24, 2019 Date Completed: January 24, 2019 Date Started: Dirill Rig: CME-75DG2 (Energy Transfer Ratio = 81%) Total Depth: 6.5 feet Dirill Rig: CME-75DG2 (Energy Transfer Ratio = 81%) A - 10	PI=35							255	1			moist (fill)
Date Started: January 24, 2019 Date Completed: January 24, 2019 Date Started: Dirill Rig: CME-75DG2 (Energy Transfer Ratio = 81%) Total Depth: 6.5 feet Dirill Rig: CME-75DG2 (Energy Transfer Ratio = 81%) A - 10								10 .	П		MII	D. I.I. GIANTIN
Date Started: January 24, 2019 Date Completed: January 24, 2019		17	84			33		5 –			MIII	SILT with some sand (basaltic), very stiff, moist
Date Started: January 24, 2019 Date Completed: January 24, 2019 Logged By: K. Gerstnecker Drill Rig: CME-75DG2 (€nergy Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring A - 10								72	H	W		(alluvium)
Date Started: January 24, 2019 Date Completed: January 24, 2019 Logged By: K. Gerstnecker Drill Rig: CME-75DG2 € nearly Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring A - 10								: : : : : : : : : : : : : : : : : : :		<i>444</i>		Boring terminated at 6.5 feet
Date Started: January 24, 2019 Date Completed: January 24, 2019 Logged By: K. Gerstnecker Drill Rig: CME-75DG2 € nearly Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring A - 10												
Date Started: January 24, 2019 Date Completed: January 24, 2019 Logged By: K. Gerstnecker Drill Rig: CME-75DG2 € nearly Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring A - 10												
Date Started: January 24, 2019 Date Completed: January 24, 2019 Logged By: K. Gerstnecker Drill Rig: CME-75DG2 € nearly Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring A - 10								() <u>-</u>	1			
Date Started: January 24, 2019 Date Completed: January 24, 2019 Logged By: K. Gerstnecker Drill Rig: CME-75DG2 (Energy Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring A - 10								10-	$\ \ $			
Date Started: January 24, 2019 Date Completed: January 24, 2019 Logged By: K. Gerstnecker Drill Rig: CME-75DG2 (Energy Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring A - 10								10.	$\ \ $			
Date Started: January 24, 2019 Date Completed: January 24, 2019 Logged By: K. Gerstnecker Drill Rig: CME-75DG2 (Energy Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring A - 10								192	-			
Date Started: January 24, 2019 Date Completed: January 24, 2019 Logged By: K. Gerstnecker Drill Rig: CME-75DG2 (Energy Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring A - 10								7/2				
Date Started: January 24, 2019 Date Completed: January 24, 2019 Logged By: K. Gerstnecker Drill Rig: CME-75DG2 (Energy Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring A - 10												
Date Started: January 24, 2019 Date Completed: January 24, 2019 Logged By: K. Gerstnecker Drill Rig: CME-75DG2 (Energy Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring A - 10								32				
Date Started: January 24, 2019 Date Completed: January 24, 2019 Logged By: K. Gerstnecker Drill Rig: CME-75DG2 (Energy Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring A - 10								15 -				
Date Started: January 24, 2019 Date Completed: January 24, 2019 Logged By: K. Gerstnecker Drill Rig: CME-75DG2 (Energy Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring A - 10								(%	1			
Date Started: January 24, 2019 Date Completed: January 24, 2019 Logged By: K. Gerstnecker Drill Rig: CME-75DG2 (Energy Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring A - 10								255	$\ \ $			
Date Started: January 24, 2019 Date Completed: January 24, 2019 Logged By: K. Gerstnecker Drill Rig: CME-75DG2 (Energy Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring A - 10								10 .				
Date Started: January 24, 2019 Date Completed: January 24, 2019 Logged By: K. Gerstnecker Drill Rig: CME-75DG2 (Energy Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring A - 10								192				
Date Started: January 24, 2019 Date Completed: January 24, 2019 Logged By: K. Gerstnecker Drill Rig: CME-75DG2 (Energy Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring A - 10								20-				
Date Started: January 24, 2019 Date Completed: January 24, 2019 Logged By: K. Gerstnecker Total Depth: 6.5 feet Work Order: 6782-00(B) Date Started: January 24, 2019 Water Level: Not Encountered Plate CME-75DG2 (Energy Transfer Ratio = 31%) A - 10 Priving Energy: 140 lb. wt 30 in. drop								20				
Date Started: January 24, 2019 Date Completed: January 24, 2019 Logged By: K. Gerstnecker Total Depth: 6.5 feet Work Order: 6782-00(B) Date Started: January 24, 2019 Water Level: Not Encountered Plate CME-75DG2 (Energy Transfer Ratio = 81%) A - 10 Priving Energy: 140 lb. wt 30 in. drop	8							14-7				
Date Started: January 24, 2019 Date Completed: January 24, 2019 Logged By: K. Gerstnecker Drill Rig: CME-75DG2 (Energy Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring Work Order: 6782-00(B) Driving Energy: 140 lb. wt 30 in. drop) F							56				
Date Started: January 24, 2019 Date Completed: January 24, 2019 Logged By: K. Gerstnecker Drill Rig: CME-75DG2 (Energy Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring Work Order: 6782-00(B) Driving Energy: 140 lb. wt 30 in. drop	5							88 <u>-</u>				
Date Started: January 24, 2019 Water Level: Date Completed: January 24, 2019 Logged By: K. Gerstnecker Drill Rig: CME-75DG2 (Energy Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring A - 10 Work Order: 6782-00(B) Driving Energy: 140 lb. wt 30 in. drop	70							255				
Date Started: January 24, 2019 Water Level: ▼ Not Encountered Date Completed: January 24, 2019 Plate Logged By: K. Gerstnecker Drill Rig: CME-75DG2 (Energy Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring A - 10 Work Order: 6782-00(B) Driving Energy: 140 lb. wt 30 in. drop	5				25-			ş.				
Date Completed: January 24, 2019 Logged By: K. Gerstnecker Drill Rig: CME-75DG2 (Energy Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring Work Order: 6782-00(B) Driving Energy: 140 lb. wt 30 in. drop	Date Star	AND WASH	ALCONOLINA MANAGEMENT		12011012 101017	V	Vater I	Leve	l: Z	Z 1	Not E	partition and the contract of
Logged By: K. Gerstnecker Drill Rig: CME-75DG2 (Energy Transfer Ratio = 81%) Total Depth: 6.5 feet Drilling Method: 4" Solid Stem Auger & AC Coring A = 10 Work Order: 6782-00(B) Driving Energy: 140 lb. wt 30 in. drop	Date Con			- 11-21			> 111 == :			77.		The state of the s
Work Order: 6782-00(B) Driving Energy: 140 lb. wt 30 in. drop	Logged B	-			cker				100			
	Work Ord		7.1 (F. 10.000, J. 11.0 C.									



Geotechnical Engineering

WINE TARD BOOLEVARD TO W
HONOLULU, OAHU

PALI HIGHWAY RESURFACING VINEYARD BOULEVARD TO WAOKANAKA STREET HONOLULU, OAHU, HAWAII Log of Boring

Ì	Labo	ratory			F	ield							
	Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	(%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	le le	ic	200	Approximate Ground Surface Elevation (feet): 60 *	
	ther	foist.	ory D.	ore	RQD (%)	enet esist	ocke sf)	epth	Sample	Graphic	nscs	Description	
	0	≥0	<u>D</u>	CR	R	- A	(t)		S	Ö	η	10-inch ASPHALTIC CONCRETE	
		13	102			64		9 13	V		MH	Dark brownish red CLAYEY SILT with so	me -
		30				20		18 <u>-</u> 18 -			МН	cobbles (basaltic), hard, moist (fill) Dark brown and orangish tan CLAYEY States some weathered gravel (basaltic), stiff stiff, moist (alluvium)	LT with to very
		31	76			21		5 -	X				2 <u></u> 24
								(A -1				Boring terminated at 6.5 feet	(8 .
								: -					:E
								<u>-</u>					(82
								10-					9362
								187					13 -
						79 2					19 4		
						· ·					<i>₹<u>~</u></i>		
								15 –					(Ac)
								13 –					85
								25/2					2. 50
								18 					:: -
								19 <u>4</u>					12-
								20-					8 <u>8.6</u>
9								(4 7)					(A c
T 4/8/19					36 4					-			
ABS.GD				<u>-</u>					(8 <u>**</u>				
SORING_LOG 6782-00(B).GPJ GEOLABS.GDT 4/8/19					22.7					227			
(B).GP.	Date Start	todi	Long	OFT. OF	2010	l he	Motor	25-	, T	7 1	Jot T	naguntarad	
1782-00	Date Start	DAY SALESSA	300000000000000000000000000000000000000	ary 25 ary 25	ALCOHOL: NO STATE OF THE		Water I	Leve.	ι, -⊻	- I	NOLE	ncountered	Plate
TOG E	Logged B	y:	K. G	erstne		- 32863	Drill Rig					75DG2 (Energy Transfer Ratio = 81%)	
RING		Total Depth: 6.5 feet Work Order: 6782-00(B)							od			lid Stem Auger & AC Coring D. wt., 30 in. drop	1 - 11
BC	WOLK OLD	er.	0/02			Driving	епе	ıgy		. 4U II	i, wt., som, urop	į.	



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PALI HIGHWAY RESURFACING VINEYARD BOULEVARD TO WAOKANAKA STREET HONOLULU, OAHU, HAWAII

Log of Boring

Labo	Laboratory Field				ield							D. School Service
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	(%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	e	ic		Approximate Ground Sur Elevation (feet): 47.5	face *
)ther	foist.	hy De pcf)	ore	RQD (%)	enet Sesist blows	ocke)epth	Sample	Graphic	nscs	Description	
	20	0	O. B.	<u> </u>	TRD	H ()		9.0			3-inch ASPHALTIC CONCRETE	
									NONEX		Gray CONCRETE Boring terminated at 0.33 feet	
											Doing terminated at 0.00 feet	
							19 -2					na
							()* <u>~</u>					(€
							25					10.00
							5 –					-
												100

							22 <u>4</u>					104
							77 <u>-2</u>					10 <u>4</u>
												10

Date Star Date Corr Logged B Total Dep Work Ord							10-	Ц				
Date Star Date Com	100000		ary 14			Nater I	Leve	: 1	N	Not E	ncountered	Plate
Logged B		B. Ai		, 4019		Drill Rig	g:		(CME-	45C TRUCK (Energy Transfer Ratio = 78%)	Tiale
Total Dep	th:	0.33			I	Orilling	Metl		l: A	C C	oring	A - 12
Work Ord	ler:	I	Oriving	Ene	rgy	: 1	40 11	o. wt., 30 in. drop	<i>b</i>			



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PALI HIGHWAY RESURFACING VINEYARD BOULEVARD TO WAOKANAKA STREET HONOLULU, OAHU, HAWAII

Log of Boring

Labe	oratory			Г	ield	-						
Labi	latory			E	leiu		i i				Approximate Ground Surf	face
sts	9	Ţ.	8		E 9 €	en.	et)				Elevation (feet): 66.5	*
Tes	ure	ens	very	(%)	ratic tanc s/foo	et Pe	ej) ı	ele	oji.	CO.		
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	nscs	Description	
-	ΣU	פֿם	RC	R	모요.	P ÷	Ω	S	G		10-inch ASPHALTIC CONCRETE	
	36				24		98		00000	GP	Brownish gray SANDY GRAVEL (BA	SALTIC),
					: - : : : : : : : : : : : : : : : : : :				000		dense, moist (base course)	
									000			
							702	1	00	CL	Decree with multi-ples mettles CANI	DV OT AV
								1		CL	Brown with multi-color mottling SAN stiff, moist (saprolite)	DI CLAI,
											Boring terminated at 2.5 feet	*
							() <u>*</u>				739)	<u> </u>
							3255					25/2
							ے ا					
							5 –	1				t ur
							36	1				×-
							702	1				19 <u>-</u>
							772					77 <u>.5</u>
1/8/19]
TO S							110	$ \ $				9 5
ABS.(
GEOL												
Date Star Date Con Logged B Total Dep			, ,				10-	Ц				
Date Star	ted:	Janu	ary 14	, 2019		Nater I	Leve	l: 🛂	N	lot E	ncountered	
B Date Con				, 2019						20040000		Plate
Logged B		B. Ai				Orill Rig	-				45C TRUCK (Energy Transfer Ratio = 78%)	estage vector
Total Dep		2.5 fe	A11 10 10 10 10 10 10 10 10 10 10 10 10 1			Orilling					lid Stem Auger & AC Coring	A - 13
∰ Work Ord	ter:	6782	-00(B)		I	Oriving	Ene	rgy	: 1	40 ll	o. wt., 30 in. drop	ý.



Geotechnical Engineering

PALI HIGHWAY RESURFACING VINEYARD BOULEVARD TO WAOKANAKA STREET HONOLULU, OAHU, HAWAII

Log of Boring

Approximate Ground Surface Elevation (feet): 119 * Other Lests: Other						П		_	ield	F			oratory	Labo
2-inch ASPHALTIC CONCRETE Gray CONCRETE	-	ace ·	* *	scs	aphic	umple	epth (feet)	ocket Pen.	enetration esistance lows/foot)	SD (%)	ore ecovery (%)	y Density	oisture ontent (%)	her Tests
Gray CONCRETE				î	G	Š	ļŏ	<u>ੂ ਪੂੜ</u>	~~~	- K	<u>ರಜ</u>	ĞĞ	žٽ	ŏ
			2-inch ASPHALTIC CONCRETE Gray CONCRETE				64 64	P P P	P R R	W. W.	N N N N N N N N N N N N N N N N N N N	D)		0
Date Started: January 14, 2019 Date Completed: January 14, 2019 Logged By: B. Aiu Drill Rig: CME-45C TRUCK (Energy Transfer Ratio = 78%) Total Depth: 0.25 feet Drilling Method: AC Coring Work Order: 6782-00(B) Driving Energy: 140 lb. wt., 30 in. drop	7 <u>2</u>						10-							OFT GEOLERES.GD1 4/6/19
Date Started: January 14, 2019 Water Level: ▼ Not Encountered		×	countered	Not E	<u> </u>	al: 🛂	Leve	Water					THE PERSON NAMED IN	Date Star
Date Completed: January 14, 2019 Plate Part Association (CME 450 TRUCK (Saver Lands Part 1995)		Plate	IFO TRICK (F	- N 6 F-	7/2			D.III DI		, 2019				Date Con
Logged By: B. Aiu Drill Rig: CME-45C TRUCK (Energy Transfer Ratio = 78%) Total Depth: 0.25 feet Drilling Method: AC Coring A _ 1 / 2	,	A 14				ho:	-							Logged B
Total Depth: 0.25 feet Drilling Method: AC Coring A - 1 a Work Order: 6782-00(B) Driving Energy: 140 lb. wt., 30 in. drop	4	A - 14								í				Work Ord



Geotechnical Engineering

PALI HIGHWAY RESURFACING VINEYARD BOULEVARD TO WAOKANAKA STREET HONOLULU, OAHU, HAWAII

Log of Boring

C - 104

Ī	Labo	ratory			F	ield							
	σ o	~		(%)								Approximate Ground Surface Elevation (feet): 152.5 *	
١	Fests	re nt (%	nsity	ery ((%	atior ance foot	Per	(feet	a	C			
	Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	nscs	Description	
					V. 100 1							7-inch ASPHALTIC CONCRETE	
١										Ō.	GP	Drawn and grave CANDW ODAVIET (DACAL TIO)	3
١		\$20000				12 73				000	GI	Brown and gray SANDY GRAVEL (BASALTIC) dense, moist (base course)	
١		12				64				00	Š		
١											SM	Tan SILTY SAND (CORALLINE) with a little	
١								192				gravel (coralline), very dense, moist (subbas course)	e -
١													
١		15				51					2		
١								(8 <u>4</u>		000	GM	Gray SILTY GRAVEL (BASALTIC) with some	53
١											Š	sand (basaltic), very dense, moist (saprolite)	
١													
١								257		90			25.0
١									.5	ā,		Boring terminated at 4.5 feet	
١								5 –				<u> </u>	£
١													
١													
١								- 13 <u>-</u>					3 4
١													
١													
١								1922					19 <u>44</u>
١													
١													
١								702					77 <u>43</u>
0													
T 4/8/1													
SS.GD.								**					0.7
EOLAI													
GPJ G								10-	Ц		,		
BORING LOG 6782-00(B).GPJ GEOLABS.GDT 4/8/19	Date Star	DAY SAME	200000000000000000000000000000000000000	ary 14,	SUBJECT CONTRACTOR	V	Vater I	_eve	l: 👃	N	lot E	ncountered	
6782	Date Com		AND THE PERSON	1747	, 2019) III 701				18.65°	Plate	9
5 100	Logged B Total Dep	-	B. Ai 4.5 fe				Orill Rig Orilling		100			45C TRUCK (Energy Transfer Ratio = 78%) lid Stem Auger & AC Coring A _ 1	5
SORIN	Work Ord			:-00(B)			Oriving					lid Stem Auger & AC Coring A = 1 b. wt., 30 in. drop	O .



Geotechnical Engineering

PALI HIGHWAY RESURFACING VINEYARD BOULEVARD TO WAOKANAKA STREET HONOLULU, OAHU, HAWAII

Log of Boring

Labo	oratory			F	ield							
[ests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	(%	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	(feet)	d)	၁		Approximate Ground Sur Elevation (feet): 206	face *
Other Tests	loistu onter	ry De oct)	ore ecove	RQD (%)	enetra esista olows/	ocket sf)	Depth (feet)	Sample	Graphic	nscs	Description	
0	ZO	D G	CR	R	A R O	P.		1 7			2-inch ASPHALTIC CONCRETE	
										Š.	Gray CONCRETE	
											Boring terminated at 0.25 feet	
							:: :	1				98
							-					
							(8 <u>4</u>					29)
							187					257
							5 –					£
												54
							79 <u>-0</u>					77.4
							72	1				76 <u>-</u>
2												
003												
9							- 10 -	1				(45
5							10-					
Date Star Date Con Logged B Total Dep Work Ord	ted:	Janu	ary 16	, 2019		Vater I	7995	l: J	N	Not E	ncountered	
Date Con			- 10-0	, 2019					1000			Plate
Logged B Total Dep		B. Ai 0.25				Orill Rig Orilling		100			45C TRUCK (Energy Transfer Ratio = 78%) oring	A 10
Work Ord			-00(B)			Oriving					o. wt., 30 in. drop	A - 16



Geotechnical Engineering

PALI HIGHWAY RESURFACING VINEYARD BOULEVARD TO WAOKANAKA STREET HONOLULU, OAHU, HAWAII

Log of Boring

	Labo	ratory			С	ield						-	
	Labe	лаюту		27 <u>2-</u> 25	E	leiu		<i>*</i>				Approximate Ground Surfac	ce
9	3	%	ity	(%)		of)	en.	(fet)				Elevation (feet): 232 *	· ·
į į		ture ent ()ens	very	(%)	trati stan 's/fo	et D	h (fe	əle	hic	ιΛ		7
Other Tests		Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	nscs	Description	
		20	1)	04	I	шщо	н)	_	O)		_	7-inch ASPHALTIC CONCRETE	5
		11				49				000	GM	Brown and gray SILTY GRAVEL (BASA dense, moist (base course)	ALTIC),
								: -			1000	dense, moist (base course)	5 6
											0.00		
											٨		
								192		0			72
										9	MH	Light brown CLAYEY SILT with a little s	and very
		30				19/6"	3					stiff, moist (alluvium)	Saliu, very
						+50/4"		_	ı				88-
									ı	<i>X</i> X	6	Gray BASALT, medium hard (basalt for	rmation)
									1		S.	Gray BASAL1, medium naru (basarro	i iliauolij
								225				Boring terminated at 4 feet	Į.
								5 –					
								J =					62.0
								-					34
								19 <u>44</u>					194
								79 <u>2</u>					V <u>.</u>
/8/19													
3DT 4								(A-					(A .
ABS.(
GEOI													
BOKING TOG 6782-00(B):Cb1 GEOTABS:CD1 4/8/18 Date Logs Tota World World	,			, .				10-	Ц	-	,	<u> </u>	
Date	Start	ANG AGGY	ALCONOLINA MANAGEMENT	ary 16			Water 1	Leve	l: J	Z N	Not E	ncountered	DI-4
Date	e Com ged B		l: Janu B. Ai	ary 16	, 2019		Drill Rig	7'		(ME	45C TRUCK (Energy Transfer Ratio = 78%)	Plate
g Tota	l Dep		4 fee				Drilling	-	100			lid Stem Auger & AC Coring	A - 17
g Wor	k Ord		1-2 CXC01-17	2-00(B)			Driving					o. wt., 30 in. drop	71 1



Geotechnical Engineering

PALI HIGHWAY RESURFACING VINEYARD BOULEVARD TO WAOKANAKA STREET HONOLULU, OAHU, HAWAII

Log of Boring

C - 107

	Labo	oratory			F	ield							
)	200	(%			62.50					Approximate Ground Surface Elevation (feet): 272 *	
	[ests	.e rt (%)	nsity	ыу (9	(%	ation tnce foot)	Pen	(feet)	a	ŭ		210.44011 (6000). 212	
	Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	nscs	Description	
			10)		шщо	ш		0,	Ĭ	_	6-inch ASPHALTIC CONCRETE	į.
									43	٥,	GP	Brown and gray SANDY GRAVEL (BASALTIC	<u>, , , , , , , , , , , , , , , , , , , </u>
ı										00	O.	medium dense, moist (base course)	r)s
		19				22		÷		00	3		S C
										000	6		
								192		000	Š.		77,0
										000	2		
		42				31				<u> </u>	МН	Light brown CLAYEY SILT with a little sand,	
ı								184				hard, moist (alluvium)	(8 <u>0</u>)
ı										11			
									200	\mathcal{U}	2		
								257		111		Boring terminated at 4 feet	<i>I</i> 1
												20119 1011111111111111111111111111111111	
								5 –					£ 2.1
l								- S S					::=
								2022					22.0
								72					7 <u>4</u>
8/19													
DT 4/								(A -1					0.0
ABS. G													
GEOL													
S).GPJ								10-	Щ	,		<u> </u>	
7	Date Star	DAY MANA	ALCONOLINA CONTRACTOR	ary 16		V	Water I	Leve	l: A	_ N	lot E	ncountered	
5 I	Date Com Logged B		: Janu B. Ai	- 174.0	, ZUI9	T	Orill Rig	7.		(ME-	Plat 45C TRUCK (Energy Transfer Ratio = 78%)	е
ı S	Total Dep		4 fee				Orilling		100			lid Stem Auger & AC Coring A = 1	18
N K	Vork Ord		6782	-00(B)			Oriving					o. wt., 30 in. drop	र २४ %



Geotechnical Engineering

PALI HIGHWAY RESURFACING VINEYARD BOULEVARD TO WAOKANAKA STREET HONOLULU, OAHU, HAWAII

Log of Boring

C - 108

I	Labora	tory			F	ield							Ĩ
10			1	%)			1					Approximate Ground Surface Elevation (feet): 295.5 *	
Test	4	at (%	ensity	егу ((%	atior ance foot	t Per	(feet	a)	j.		2. 2	
Other Tests	Noist.	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	nscs	Description	
		-		0 1						Ĭ	_	9-inch ASPHALTIC CONCRETE	
		14				34				000	GP	Brown and gray SANDY GRAVEL (BASALTIC),	
										000		dense, moist (base course)	25
										000			
								19 <u>-0</u>		00	MII	ALLE OLIVERY CALL IN THE TOTAL CALL	
		44				8					MH	Light brown CLAYEY SILT with a little sand, medium stiff, moist (alluvium)	
		57676							I	\mathscr{U}	2		
								(18 <u>4</u>					(82)
										W	95.		
										W		Daving terminated at 2.75 fact	
								257				Boring terminated at 3.75 feet	227
								_					
								5 –					£
								564					:: -
								1940	$\left\{ \ \right $				19 <u>49</u>
								79 <u>2</u>					19 <u>40</u>
_													
4/8/16													
ig Big								17 .					87
OLAR													
Date S Date S Total I Work O								10-					
Date S	Started	d:	Janu	ary 22	2019	Tv	Water I	9906	l: J	N	lot E	ncountered	\exists
Date C	Compl	eted	: Janu	ary 22	Security Services				aet Si	89 336	201010111111111111111111111111111111111	Plate	
Logge			B. Ai				Orill Rig		E . 39			45C TRUCK (Energy Transfer Ratio = 78%)	
Total I			3.75 6782	teet -00(B)			Orilling Oriving					lid Stem Auger & AC Coring D. wt., 30 in. drop	9
A O.I.K		•	5.05	~ (D)		8 5	8		ΟJ			,	



Geotechnical Engineering

PALI HIGHWAY RESURFACING VINEYARD BOULEVARD TO WAOKANAKA STREET HONOLULU, OAHU, HAWAII

Log of Boring

Lab	oratory			F	ield			Î				
20720		100.00	(9)								Approximate Ground Sur Elevation (feet): 365	face *
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	(9	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	(5)	994		Elevation (teet). 303	
ler T	Istur	Del	e. Sove	RQD (%)	netra sista ws/f	cket	oth (Sample	Graphic	nscs	D	<u> </u>
Q 4	N N	(P.C.)	Cor	RQ	Per Res	Poc (tsf,	Del	Sar	Gra	NS	Description	
											2-inch ASPHALTIC CONCRETE 7-inch CONCRETE	
											7-IIICH CONCRETE	
	14				32			T	00	GP	Brown and gray SANDY GRAVEL (B	ASALTIC),
									000		dense, moist (base course)	500
									00			
							2010		00			
	40				1 =				\mathcal{U}	MH	Light brown CLAYEY SILT with a littl moist (alluvium)	e sand, stiff,
	48				15			۱			moist (audvidin)	
								1				180
								1	\mathcal{U}			
									\mathcal{M}			
									VV		Boring terminated at 3.75 feet	
							25/25					22.7
							5 —					
							o —					-
												~~.
							-					
												120
							- 17 <u>-2</u>					~_
න												
4/8/1												
SGDT							(4 1)					64 <u>0</u>
OLAB												
oj GE							274					I
Date Star Date Cor Logged E Total Dep Work Ord	tode	Ione	oru oo	2010	1.3	Nater I	10 -		7 N	lot F	ncountered	
Date Star	California (Artista)	300000000000000000000000000000000000000	ary 22 arv 22	STATE OF THE STATE		water I	.evel		1	NUL E	ncountered	Plate
8 Logged F		B. Ai		, 2010	I	Orill Rig	ξ:		(CME-	45C TRUCK (Energy Transfer Ratio = 78%)	1100
g Total Dep	(-	3.75	41147		(2) (3)	Orilling		100			lid Stem Auger & AC Coring	A - 20
Work Ord			-00(B)			Oriving					o. wt., 30 in. drop	20



Geotechnical Engineering

PALI HIGHWAY RESURFACING VINEYARD BOULEVARD TO WAOKANAKA STREET HONOLULU, OAHU, HAWAII

Log of Boring

C - 110

I	Labo	oratory			F	ield							Ĩ
ı	ø	9	y	(%)		u n æ		t)				Approximate Ground Surface Elevation (feet): 391 *	
ı	Test	ure int (%	ensit	very ((%)	ration tance s/foot	at Pel	ee]	le	ilc			v
ı	Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	OSCS	Description	
t			10	J		ппо			0,	Ĭ		7-inch ASPHALTIC CONCRETE	
ı		14				39				^о д с	GP	Brown and gray SANDY GRAVEL (BASALTIC)	
ı		7.17						:: -		0000		dense, moist (base course)	≀ :=
ı										000			
ı										00	ė.		
ı								77.4		W	МН	Light brown CLAYEY SILT with a little sand, ve stiff, moist (alluvium)	ery
ı		56				22					6 2 9	oun, moior (anaviani)	
ı						WEST		(8 <u>4</u>		\mathcal{W}			(8 <u>**</u>
ı									I				
ı									١		2		
ı								357					257
ı									-	<i>XX</i> 2		Boring terminated at 4.58 feet	e e
ı								5 –					£
١													
١													50
ı													
ı													
ı								1922					99 <u>-0</u>
ı													
ı								7 <u>2</u>					77 <u>4</u>
ı													
1/8/19													
GDT ((4 -1					(35)
OLABS													
BORING LOG 6782-00(B).GPJ GEOLABS.GDT 4/8/19				,				10-	Ц				
-00(B)	Date Star	DATE STREET	7 C Y T 1 C T T T T T T T T T T T T T T T T T	ary 22	1901 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Vater I	9906	l: 📐	Z N	lot E	ncountered	
G 6782	Date Com Logged B		: Janu B. Ai		, 2019		Orill Rig	r'		r	MF	Plate 45C TRUCK (Energy Transfer Ratio = 78%))
NG LO	Total Dep		4.58			7.5	Orilling		100			lid Stem Auger & AC Coring A - 2	1
BORI	Work Ord	er:	6782	-00(B)		Ι	Oriving	Ene	rgy	: 1	40 lb	o. wt., 30 in. drop	0 55 2



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PALI HIGHWAY RESURFACING VINEYARD BOULEVARD TO WAOKANAKA STREET HONOLULU, OAHU, HAWAII

Log of Boring

Lah	oratory			F	ield							╕
Lab				14043	leid						Approximate Ground Surface Elevation (feet): 444.5 *	- 1
sts	8	ity	, (%)		of)	en.	et)				Elevation (feet): 444.5 *	
T Te	hure ent (ens)	very	(%)	trati stan s/fo	et P	ս (fe	ole	þic	ſΛ		
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	OSCS	Description	-
	20)]	O. I.	М	пио	Д.)	ш.	(V)	0		13-inch ASPHALTIC CONCRETE	-
												- 1
												1
	23				32		9 0		000	GP	Dark gray SANDY GRAVEL (BASALTIC), dense,	: E
					01				00		moist (base course)	
								1	000			1
							192-2		00	É		99 <u>44</u>
								ľ	17	МН	Doub becauside and with some doub grow OI AVIV	
	58				15					WIII	Dark brownish red with some dark gray CLAYEY SILT with some gravel (basaltic), stiff, moist	
							-		\mathcal{U}		(alluvium)	(8 <u>1</u>
												ı
										8		ı
							257	t	\mathcal{M}			325
									M			13
							بر	36	N.e.Ks		Boring terminated at 4.6 feet	ı
							5 –					£arri
												ı
												- C
							222					20 <u>4</u> 0
							7/2					77 <u>4</u> 3
19												
T 4/8/												
gg. GD												190
EOLA												1
9b) 6							10-					
Date Star Date Con Logged E Total Dep Work Ord	ted:	Janu	ary 22	, 2019	1	Nater I	7000	l: ⊻	Z N	lot E	ncountered	┨
Date Con		A CANAL CONTRACTOR		100000000000000000000000000000000000000				963 Vie	e# 868		Plate	
ු Logged F			erstned	cker		Orill Rig					75DG2 (Energy Transfer Ratio = 81%)	
Total Dep		4.6 fe	10.00000			Orilling					lid Stem Auger & AC Coring A - 22	
្ឌ័ Work Ord	ter:	6782	-00(B)		I	Oriving	Ene	rgy	: 1	.40 lb	o. wt., 30 in. drop	6



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PALI HIGHWAY RESURFACING VINEYARD BOULEVARD TO WAOKANAKA STREET HONOLULU, OAHU, HAWAII

Log of Boring

l	Labo	oratory			F	ield							
١	ø	0	5 6	(%)			1.	0				Approximate Ground Surface Elevation (feet): 413 *	
ı	Test	re nt (%	ensity	егу (8	ation ance /foot	t Per	(feet	e	<u></u>		, ,	
l	Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	nscs	Description	
ı	(90%)										1	16.5-inch ASPHALTIC CONCRETE	-
		1000				Taral		0=					::-
		7				20		134			GP	Dark gray SANDY GRAVEL (BASALTIC), medium dense, moist (base course)	12
		46				19		<u> </u>		000	СН	Dark reddish brown SILTY CLAY , very stiff, moist (alluvium)	
								25					32 7
١												Boring terminated at 4.37 feet	
١								5 –					£
١													
١													
١								7 4					0 0
١													
١								224					024
١								-					
١													
١								72 <u>2</u>					77 <u>-0</u>
ı													
1/8/19													
GDT								(s .					85
BORING LOG 6782-00(B).GPJ GEOLABS.GDT 4/8/19													
PJ GE(10					
0(B).G1	Date Star	ted:	Ianıı	ary 22	2019		Water I	eve.	; Z	Z 1N	Jot E	ncountered	\dashv
6782-0	Date Com	TO A STATE OF THE		Contract Con			. ator I			8 4		Plate	
10G	Logged B			erstned	cker		Drill Rig	A	1 50			75DG2 (Energy Transfer Ratio = 81%)	I
RING	Total Dep Work Ord		6782	feet 2-00(B)			Orilling Oriving					id Stem Auger & AC Coring A = 23 b. wt., 30 in. drop	3
М	WOLK OIG	CI.	0/02	(a)vv-،		8 8	липи	вие.	gy		40 IL	n wu, so iii, urop	Û



Geotechnical Engineering

PALI HIGHWAY RESURFACING VINEYARD BOULEVARD TO WAOKANAKA STREET HONOLULU, OAHU, HAWAII

Log of Boring

F	Labo	oratory			F	ield	*					-
İ	(90000000			6	1950							Approximate Ground Surface Elevation (feet): 355 *
١	ests	(%)	sity	y (%		tion nce oot)	en.	eet)				Elevation (leet): 355 **
١	Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	S	D
	Oth	Moi Con	Dry (pcf	Cor Rec	RQ	Pen Res (blo	Poc (tsf)	Dep	San	Gra	nscs	Description
										i e		6-inch ASPHALTIC CONCRETE
										000	GP	Dark gray SANDY GRAVEL (BASALTIC), moist (base course)
		9				21			I		МН	Dark brownish red CLAYEY SILT with some gravel, medium stiff, moist (alluvium)
						7						
						5		25.77	Ī			
	11 52	43				e		5 –				L a
	LL=53 PI=23	43				5		S-				, <u>-</u>
١								2 <u>244</u>	1	\mathcal{U}		Boring terminated at 7.16 feet
												During terminated at 7.10 feet
								7/2				12 <u>2</u>
719												
BORING LOG 6782-00(B).GPJ GEOLABS.GDT 4/8/19								-				,-
LABS.C												
GEO												
B).GPJ			~ 0.00000000000000000000000000000000000		a e e e e	710.		10-				
82-00	Date Star Date Com	The second		ary 22			Water I	_eve	l: ∑	4 N	lot E	ncountered Plate
06 67	Logged B			erstne	fic		Drill Rig	g:			ME-	75DG2 (Energy Transfer Ratio = 81%)
ING L	Total Dep		7.16				Drilling		100			lid Stem Auger & AC Coring A - 24
BORI	Work Ord	er:	6782	2-00(B)			Driving	Ene	rgy			o. wt., 30 in. drop



Geotechnical Engineering

PALI HIGHWAY RESURFACING VINEYARD BOULEVARD TO WAOKANAKA STREET HONOLULU, OAHU, HAWAII

Log of Boring

C - 114

Date Started: January 23, 2019 Date Completed: January 23, 2019 Date Started: B. Aiu Date Completed: January 23, 2019	Labo	oratory			F	ield			П				
Date Started: January 23, 2019 Date Completed: January 23, 2019	ther Tests	oisture ontent (%)	ry Density cf)	ore ecovery (%)	ÓD (%)	enetration esistance lows/foot)	ocket Pen. sf)	epth (feet)	ample	raphic	scs	Approximate Ground Surface Elevation (feet): 325 * Description	
Date Started: January 23, 2019 Date Completed: January 23, 2019 Date Completed: January 23, 2019 Date Completed: January 23, 2019 Date Date Started: Date Completed: January 23, 2019 Date Date Completed: January 23, 2019 Date Double Completed: January 23, 2019 Date Double Completed: January 23, 2019 Date Completed: January 24, 2019 Date Completed: January 24, 2019 Date Completed: January 25, 2	ō	Σŏ	Q d	C. Re	R(9.8.E	P(s)	Ď	Š	Ū	'n		
Date Started: January 23, 2019 Date Completed: January 23, 2019 D									9		8		
Date Started: January 23, 2019 Date Completed: January 23, 2019 Date Completed: January 23, 2019 Date Completed: January 23, 2019 Total Depth: 0.5 feet Drill Rig: CME-45C TRUCK (Energy Transfer Ratio = 78%) A - 25												Boring terminated at 0.5 feet	
Date Started: January 23, 2019 Date Completed: January 23, 2019 Logged By: B. Aiu Drill Rig: CME-45C TRUCK (€nergyTransfer Ratio = 78%) Total Depth: 0.5 feet Drilling Method: AC Coring A - 25								2 <u>-</u>				(Note: Coring stopped at bottom of AC lay to suspicion of underground utility)	er due
Date Started: January 23, 2019 Date Completed: January 23, 2019 Logged By: B. Aiu Drill Rig: CME-45C TRUCK (€nergyTransfer Ratio = 78%) Total Depth: 0.5 feet Drilling Method: AC Coring A - 25								257					185
Date Started:January 23, 2019Water Level:Not EncounteredDate Completed:January 23, 2019PlateLogged By:B. AiuDrill Rig:CME-45C TRUCK (Energy Transfer Ratio = 78%)Total Depth:0.5 feetDrilling Method:AC CoringA - 25								5 –					Pater
Date Started:January 23, 2019Water Level:Not EncounteredDate Completed:January 23, 2019PlateLogged By:B. AiuDrill Rig:CME-45C TRUCK (Energy Transfer Ratio = 78%)Total Depth:0.5 feetDrilling Method:AC CoringA - 25								2 .4					:e
Date Started:January 23, 2019Water Level:Not EncounteredDate Completed:January 23, 2019PlateLogged By:B. AiuDrill Rig:CME-45C TRUCK (Energy Transfer Ratio = 78%)Total Depth:0.5 feetDrilling Method:AC CoringA - 25								2 <u>7% c</u>	-				22
Date Started:January 23, 2019Water Level:Not EncounteredDate Completed:January 23, 2019PlateLogged By:B. AiuDrill Rig:CME-45C TRUCK (Energy Transfer Ratio = 78%)Total Depth:0.5 feetDrilling Method:AC CoringA - 25								7 <u></u>					% <u>2</u>
Date Started:January 23, 2019Water Level:Not EncounteredDate Completed:January 23, 2019PlateLogged By:B. AiuDrill Rig:CME-45C TRUCK (Energy Transfer Ratio = 78%)Total Depth:0.5 feetDrilling Method:AC CoringA - 25	Date Star Date Com Logged B Total Dep Work Ord							100					95
Date Started:January 23, 2019Water Level:Not EncounteredDate Completed:January 23, 2019PlateLogged By:B. AiuDrill Rig:CME-45C TRUCK (Energy Transfer Ratio = 78%)Total Depth:0.5 feetDrilling Method:AC CoringA - 25								9/2					
Logged By: B. Aiu Drill Rig: CME-45C TRUCK (Energy Transfer Ratio = 78%) Total Depth: 0.5 feet Drilling Method: AC Coring A - 25	Date Star Date Com	The street	A CONTRACTOR OF THE			V	Water I	7996	l: J	· N	Not E	CASTAMA CASTA Plate	
	Logged By: B. Aiu								5 50				0920047
WIGHT HTDOP: 67X7-HH(R) Driving Hipprov. TAUTh wt 2016 drop	Total Dep Work Ord											oring A o. wt., 30 in. drop	- 25



Geotechnical Engineering

PALI HIGHWAY RESURFACING VINEYARD BOULEVARD TO WAOKANAKA STREET HONOLULU, OAHU, HAWAII

Log of Boring

Lah	oratory		*	F	ield	-	-					目
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)		Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	le	iic	600	Approximate Ground Surface Elevation (feet): 269 *	v
Other	Moist	Dry D (pcf)	Core Reco	RQD (%)	Penel Resis (blow	Pocke (tsf)	Dept	Sample	Graphic	nscs	Description	
									Ĭ		6.75-inch ASPHALTIC CONCRETE	
	11				39		0 -		000000000000000000000000000000000000000	GP	Brown and gray SANDY GRAVEL (BASALTIC), dense, moist (base course)	95
	39				21		(<u>*</u>			МН	Light brown CLAYEY SILT with a little sand, stiff, moist (alluvium)	1 12
							25				Boring terminated at 3.58 feet	257
							5 —					2
							27 <u>.0</u>					73 <u>-0</u>
							77 <u>-</u>					77,2
Date Star Date Con Logged E Total Dep Work Ord							(s e					88
Date Star	Date Started: January 23, 2019					Nater I	10 – Level	: 1	- N	lot E	ncountered	7
Date Con Logged E	Date Completed: January 23, 2019 Logged By: B. Aiu						g:		(CME-	Plate 45C TRUCK (Energy Transfer Ratio = 78%)	
Total Dep	oth:	3.58	feet		I	Orilling	Meth		: 4	" So	lid Stem Auger & AC Coring A - 26	
Work Ord	ler:	6782	2-00(B)		I	Oriving	Ene	rgy	: 1	40 lt	o. wt., 30 in. drop	ű



Geotechnical Engineering

PALI HIGHWAY RESURFACING VINEYARD BOULEVARD TO WAOKANAKA STREET HONOLULU, OAHU, HAWAII

Log of Boring

Laboratory Field					ield							
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	(%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	le	ilc		Approximate Ground Surface Elevation (feet): 238.5 *	
Other	Moist	Dry D (pcf)	Core	RQD (%)	Penet Resist (blows	Pocke (tsf)	Depth	Sample	Graphic	nscs	Description	ï
) I					•,	Ŭ		6.75-inch ASPHALTIC CONCRETE	į.
	9 36				11 5		9 5		000000000000000000000000000000000000000	GP	Tan SANDY GRAVEL (CORALLINE), medium dense, moist (base course) Brown SILTY CLAY with a little gravel, medium	(E
							(*				stiff, moist (alluvium) Boring terminated at 3.5 feet	02
							25				3	N.T
							5 –					5
							5 4					8
							90 <u>00</u>					272
							79 <u>-</u>					782
Date Star Date Con Logged B Total Dep Work Ord							0.					85
1000							10-					
Date Star	Date Started: January 23, 2019 Date Completed: January 23, 2019					Water I	7996	: 1	Z N	lot E	ncountered Plate	
Logged B	Logged By: B. Aiu					Drill Rig: CME-45C TRUCK (Energy Transfer Ratio = 78%)						
Total Dep Work Ord		3.5 fe	eet -00(B)			Orilling Oriving					lid Stem Auger & AC Coring A = 27 o. wt., 30 in. drop	7



Geotechnical Engineering

PALI HIGHWAY RESURFACING VINEYARD BOULEVARD TO WAOKANAKA STREET HONOLULU, OAHU, HAWAII

Log of Boring

١	Labo	ield											
	ι ν	0		(%)			_					Approximate Ground Surface Elevation (feet): 195 *	
	Test	re at (%	ensity	егу ((%	atior ance foot	t Per	(feet	e	<u>_</u>			
	Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	nscs	Description	
									,	Ĭ	, , , , , , , ,	6-INCH ASPHALTIC CONCRETE	
		11				26		::	1	00	GP GM	Dark gray GRAVEL (BASALTIC) with a little sand (basaltic), medium dense, moist (base course)	7
										00000	GWI	Light tan SILTY GRAVEL (CORALLINE) with some sand (coralline), medium dense, moist (subbase course)	
		20				55		** <u>-</u>			SM	Black and orangish tan SILTY SAND (BASALTIC) with some weathered basalt gravel, very dense, moist (saprolite)	250
										11.4	ţ.	Boring terminated at 3.5 feet	22
								357					2870
								5 –					
								0					
								:: :					5 2
								1922					7 <u>3-0</u>
								77 <u>2</u>					72 <u>0</u>
/19													
DT 4/8													0.0
LABS.G													
BORING_LOG 6782-00(B).GPJ GEOLABS.GDT 4/8/19													
0(B).GP	Date Started: January 24, 2019						Nater I	10-	· 7	7 N	Jot F	ncountered	
6782-01	Date Completed: January 24, 2019						ruce I			8 dd	.0(1)	Plate	
LOG	Logged By: K. Gerstnecker						Drill Rig: CME-75DG2 (Energy Transfer Ratio = 81%)						
ORING	Total Depth: 3.5 feet Work Order: 6782-00(B)						Orilling Oriving					lid Stem Auger & AC Coring A - 23 o. wt., 30 in. drop	8
M	TOTA OIG	~11	5,02	. 55(D)		- I -		-11C	ΟJ	• •	10 II	, oo m. a.op	Ü



Geotechnical Engineering

PALI HIGHWAY RESURFACING VINEYARD BOULEVARD TO WAOKANAKA STREET HONOLULU, OAHU, HAWAII

Log of Boring

C - 118

Laboratory Field										15			
si Si	9	y	(%)		u m (i)	i	t)				Approximate Ground Surface Elevation (feet): 177.5 *		
. Test	ure ent (%	ensit	very	(%)	tratio trance s/foo	et Pe	ı (fee	ole	pic	CO.		-	
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	nscs	Description		
		34-36.376.22								, January 1	10-inch ASPHALTIC CONCRETE		
	7				39		5 8		000	GP	Brown and gray SANDY GRAVEL (BASALTIC), dense, moist (base course)	5 83	
										SM	Tan SILTY SAND (CORALLINE) with a little		
							1022				gravel (coralline), dense, moist (subbase course	e) _	
	16				35					SM	Brownish gray SILTY SAND (BASALTIC) with some gravel (basaltic), dense, moist (saprolite)		
							(1 <u>44</u>				some graver (basauc), dense, moist (saproine)	(8 <u>0)</u>	
										SC 100			
							28/5				Boring terminated at 3.87 feet	125	
											-		
							5 –					Eart.	
							3 /-					3 9	
							192					19 <u>4</u> 0	
							77 <u>2</u>					79 <u>4</u>	
												680	
Date Start Date Com Logged B Total Dep Work Ord							10-						
Date Start	Date Started: January 24, 2019				1	Nater I	- 10 - Leve]: A	N	lot E	ncountered	_	
Date Com	Date Completed: January 24, 2019 Logged By: B. Aiu						-10			יוארי	Plate		
Total Dep	Logged By: B. Aiu Total Depth: 3.87 feet						Drill Rig: CME-45C TRUCK (Energy Transfer Ratio = 78%) Drilling Method: 4" Solid Stem Auger & AC Coring A						
Work Ord			-00(B)			Oriving					b. wt., 30 in. drop	1	



Geotechnical Engineering

PALI HIGHWAY RESURFACING VINEYARD BOULEVARD TO WAOKANAKA STREET HONOLULU, OAHU, HAWAII

Log of Boring

Lab	oratory			E	ield	-	-	П			•	=
Lab	brattory				leiu						Approximate Ground Surface	
sts	(%)	sity	y (%		ion ce you	en.	et)				Elevation (feet): 99.5 *	
ar Te	ture	Den	over	(%)	etrat stan vs/fc	cet F	ıh (fe	ple	ohic	Ś		- 1
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	nscs	Description	
						400000000000000000000000000000000000000	510,0	9		0	7-inch ASPHALTIC CONCRETE	
					1.0					CD	D. I. CDANEY CLASSICO	ű
	19				16		,		00	GP	Dark gray GRAVEL (BASALTIC), medium dense, moist (base course)	
	230.0									MH	Dark brown CLAYEY SILT with some gravel and	
								I		To Alberta	sand (basaltic), very stiff, moist (alluvium)	
							704		W			174
	19				17					5 5		
									\mathcal{U}	2		
							(1 <u>4-1</u>		1	17 C C C C C C C C C C C C C C C C C C C		(8 <u>44</u>
										N 000 300		
								ł	W	6 2		
							187		M	T		252
											Boring terminated at 4.08 feet	
							5 –					£
							9 -					2
							200	1				2 <u>94</u>
							7 <u>-</u>	1				
on and												
4/8/1												
SGDI							(A)	1				(A)
OLAB												
Date Star Date Con Logged E Total Dep							10-					
Date Star	ted:	Janu	arv 24	. 2019		Nater I	7998	l: ∇		Not F	ncountered	\exists
B Date Con	Date Started: January 24, 2019 Date Completed: January 24, 2019								o 65		Plate	
Logged E			erstne	cker		Drill Rig: CME-75DG2 (Energy Transfer Ratio = 81%)						
Total Dep		4.08	No Control of			Orilling					lid Stem Auger & AC Coring A - 30	
∰ Work Ord	ier:	6782	-00(B)	Į.	, 1	Oriving	Ene	rgy	:]	. 40 11	o. wt., 30 in. drop	15



Geotechnical Engineering

PALI HIGHWAY RESURFACING VINEYARD BOULEVARD TO WAOKANAKA STREET HONOLULU, OAHU, HAWAII

Log of Boring

F	Labo	oratory			F	ield		-						
	Labe	ласогу			1.	leiu						Approximate Ground Surface Elevation (feet): 70 *		
	sts	98	ity	8		of)	en.	et)				Elevation (feet): 70 *		
ı	Te	ure ent (ens	very	(%)	ratio tano s/foo	et P	ı (fe	e	ıic				
	Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	nscs	Description		
-	0	20	0	024	R	T.K.C.	E E		S	0	ר	14-inch ASPHALTIC CONCRETE		
								9					3 8	
		12				41				000	GM	Brownish gray SILTY GRAVEL (BASALTIC),		
									H	000	0.00	dense, moist (base course)		
								17 <u>14</u>	1		Y S		17±	
										00				
		33				41				177	MH	Brown CLAYEY SILT with some sand and a litt	le	
		33				41		0.4		\mathcal{U}	ATT COLUMN	gravel (basaltic), hard, moist (alluvium)	(8 <u>44</u>	
									1	111				
										\mathcal{W}	3			
								10.75	1	11			18 .0	
										XX.	Š.	Boring terminated at 4.17 feet		
								5 –					£	
ı								- "						
ı														
ı								54					2=	
								2000					50 <u>94</u>	
													554	
													7	
<u>თ</u>														
4/8/1														
S.GDI								800					86	
OLAB														
BORING_LOG 6782-00(B).GPJ GEOLABS.GDT 4/8/19														
(B)	Data Startady January 24, 2010					T r	Meter	10-		- X	To 4 To	na quatora d		
82-00	Date Started: January 24, 2019 Date Completed: January 24, 2019						Nater I	Level		1	NOT E	ncountered Plate	ě	
00 P	Logged By: B. Aiu						Drill Rig: CME-45C TRUCK (Energy Transfer Ratio = 78%)							
Š Ž	Гotal Dep		4.17			(200)	Drilling Method: 4" Solid Stem Auger & AC Coring A - 31							
BOR A	Work Ord		6782	:-00(B)			Oriving					o. wt., 30 in. drop	i d is	