

FED. ROAD DIST. NO.	STATE	FEDERAL - AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-0311(5)	2003	88	189

BORING LOG						W.O. 99-3144
BORING NO. B8 (STA 67+50)		DRIVING WT. 140 lb.		DATE OF DRILLING 2/25/99		
SURFACE ELEV. 84±		DROP 30 in.		WATER LEVEL None		
DEPTH	GRAPE	SAMPLE	BLOWS PER FOOT	DRY DENSITY (PCF)	MOIST. CONT. (%)	DESCRIPTION
0						
			22	80	19	Clayey SILT (ML-CL) - Reddish brown, moist, medium stiff to stiff, with sand.
			12	88	21	
5			29	97	24	Silty CLAY (ML-CL) - Reddish brown, moist, stiff, with sand.
			76	97	27	
10						
			63	82	30	End boring at 15.5 feet.
15						
20						

BORING LOG						W.O. 99-3144
BORING NO. B9 (STA 76+00)		DRIVING WT. 140 lb.		DATE OF DRILLING 2/25/99		
SURFACE ELEV. 89±		DROP 30 in.		WATER LEVEL None		
DEPTH	GRAPE	SAMPLE	BLOWS PER FOOT	DRY DENSITY (PCF)	MOIST. CONT. (%)	DESCRIPTION
0						
			16	91	29	Clayey SILT (ML-CL) - Brown, moist, medium stiff, with sand.
			36	102	25	
5						Stiff from 4 feet.
			31	95	28	
10						
			88/9"	110	14	WEATHERED BASALT (WH) - Mottled grayish brown, dense. End boring at 13.5 feet.
15						
20						

BORING LOG						W.O. 99-3144
BORING NO. B10 (STA 83+50)		DRIVING WT. 140 lb.		DATE OF DRILLING 2/25/99		
SURFACE ELEV. 93.7±		DROP 30 in.		WATER LEVEL None		
DEPTH	GRAPE	SAMPLE	BLOWS PER FOOT	DRY DENSITY (PCF)	MOIST. CONT. (%)	DESCRIPTION
0						
			19	90	26	Clayey SILT (ML-CL) - Brown, moist, medium stiff to stiff, with sand.
			19	91	25	
5			31	92	26	Reddish brown color, stiff from 5 feet.
			44	97	27	
10						
			72/10"	98	30	End boring at 15 feet.
15						
20						

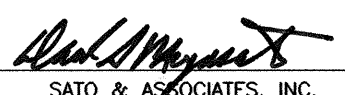
BORING LOG						W.O. 99-3144
BORING NO. B11 (STA 94+50)		DRIVING WT. 140 lb.		DATE OF DRILLING 2/24/99		
SURFACE ELEV. 100±		DROP 30 in.		WATER LEVEL None		
DEPTH	GRAPE	SAMPLE	BLOWS PER FOOT	DRY DENSITY (PCF)	MOIST. CONT. (%)	DESCRIPTION
0						
			28	93	29	Sandy SILT (ML-CL) - Mottled brown, moist, medium stiff to stiff.
			17	76	27	
5						Cobble at 8 feet.
			30/2"	Tip Recovery		
10						
			69	96	25	End boring at 14.5 feet.
15						
20						

BORING LOG						W.O. 99-3144
BORING NO. B12 (STA 103+00)		DRIVING WT. 140 lb.		DATE OF DRILLING 2/24/99		
SURFACE ELEV. 104±		DROP 30 in.		WATER LEVEL None		
DEPTH	GRAPE	SAMPLE	BLOWS PER FOOT	DRY DENSITY (PCF)	MOIST. CONT. (%)	DESCRIPTION
0						
			39	82	18	Clayey SILT (ML-CL) - Brown, moist, stiff, with sand.
			71	91	22	
5						
			52	95	24	
10						
			64	94	26	End boring at 14.5 feet.
15						
20						

BORING LOG						W.O. 99-3144
BORING NO. B13 (STA 115+00)		DRIVING WT. 140 lb.		DATE OF DRILLING 2/24/99		
SURFACE ELEV. 108±		DROP 30 in.		WATER LEVEL None		
DEPTH	GRAPE	SAMPLE	BLOWS PER FOOT	DRY DENSITY (PCF)	MOIST. CONT. (%)	DESCRIPTION
0						
			61	85	24	Sandy SILT (ML-CL) - Mottled brown, moist, stiff.
			39	85	29	
5			29	94	14	Increase in sand content at 5 feet.
			50/5"	104	20	
10						Cobble at 9.5 feet.
			61	85	31	
15						End boring at 15.5 feet.
20						

Note:

- Boring Logs and Locations Reproduced From the "Soils Investigation" Report for Puunene Avenue/Mokulele Highway Widening Project, Puunene, Maui, Hawaii for Sato & Associates, Inc., By Ernest K. Hirata & Associates, Inc., W.O. 99-3144, Dated October 1, 1999.
- The Boring Logs Indicate the Approximate Subsurface Soil Conditions Encountered Only At Those Times and Locations Where Borings Were Made, and May Not Represent Conditions At Other Times and Locations.
- The Boring Logs are for Design Purposes Only, and are Not Intended for Use in Developing Cost Estimates By The Contractor.

<div><div>DANIEL S. MIYASATO</div><div>LICENSED PROFESSIONAL ENGINEER</div><div>No. 3443-C</div><div>HAWAII U.S.A.</div></div> <div><div>THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION</div><div></div><div>SATO &amp; ASSOCIATES, INC.</div></div>	<div>STATE OF HAWAII</div> <div>DEPARTMENT OF TRANSPORTATION</div> <div>HIGHWAYS DIVISION</div> <div><b>BORING LOGS</b></div> <div><b>MOKULELE HIGHWAY WIDENING</b></div> <div>Vicinity of Cane Haul Road</div> <div>To</div> <div>Maui Humane Society</div> <div>Federal - Aid Project No. NH-0311(5)</div> <div>Scale: AS NOTED</div> <div>Date: JUNE 2002</div> <div>SHEET No. 1 OF 2 SHEETS</div>
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ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DRAWN BY	
RECEIVED BY	
QUANTITIES BY	
CHECKED BY	
No.	

FED. ROAD DIST. NO.	STATE	FEDERAL - AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-0311(5)	2003	89	189

BORING LOG						W.O. 99-3144
BORING NO. B14 (STA 126+00)		DRIVING WT.	140 lb.	DATE OF DRILLING	2/24/99	
SURFACE ELEV. 112±		DROP	30 in.	WATER LEVEL	None	
DEPTH	GRAPE	SAMPLE	BLOWS PER FOOT	DRY DENSITY (PCF)	MOIST. CONT. (%)	DESCRIPTION
0						
			22	84	19	Sandy SILT (ML-CL) - Reddish brown, moist, medium stiff to stiff, with gravel.
			23	86	17	
-5						
			50/6"	Tip Recovery		WEATHERED BASALT (WH-WM) - Mottled gray, dense to medium hard.
-10			72/9"	110	11	
-15						End boring at 14 feet.
-20						

Plate B14

BORING LOG						W.O. 99-3144
BORING NO. B15 (STA 136+50)		DRIVING WT.	140 lb.	DATE OF DRILLING	2/24/99	
SURFACE ELEV. 113±		DROP	30 in.	WATER LEVEL	None	
DEPTH	GRAPE	SAMPLE	BLOWS PER FOOT	DRY DENSITY (PCF)	MOIST. CONT. (%)	DESCRIPTION
0						
			36	96	17	Clayey SILT (ML-CL) - Reddish brown, moist, stiff, with sand and gravel.
			41	83	27	
-5			67	Tip Recovery		Brown color from 3 feet.
			73/9"	105	19	
-10						Cobble at 6.5 to 7 feet.
			50/6"	93	21	
-15						End boring at 14.5 feet.
-20						

Plate B15

BORING LOG						W.O. 99-3144
BORING NO. B16 (STA 152+00)		DRIVING WT.	140 lb.	DATE OF DRILLING	2/23/99	
SURFACE ELEV. 109±		DROP	30 in.	WATER LEVEL	None	
DEPTH	GRAPE	SAMPLE	BLOWS PER FOOT	DRY DENSITY (PCF)	MOIST. CONT. (%)	DESCRIPTION
0						
			28	68	17	Sandy SILT (ML-CL) - Brown, moist, stiff, with gravel.
			45	86	20	
-5						Cobble at 3 feet.
			52	93	24	
-10						Cobble at 5.5 to 6 feet.
			64	92	32	
-15						Clayey SILT (ML-CL) - Brown, moist, stiff, with sand.
-20						End boring at 14.5 feet.

Plate B16

BORING LOG						W.O. 99-3144
BORING NO. B17 (STA 162+00)		DRIVING WT.	140 lb.	DATE OF DRILLING	2/23/99	
SURFACE ELEV. 108±		DROP	30 in.	WATER LEVEL	None	
DEPTH	GRAPE	SAMPLE	BLOWS PER FOOT	DRY DENSITY (PCF)	MOIST. CONT. (%)	DESCRIPTION
0						
			41	85	23	Clayey SILT (ML-CL) - Reddish brown, moist, stiff, sand and gravel.
			45	81	27	
-5			38	99	28	
			33	82	40	
-10						Cobble at 12 to 12.5 feet.
			83/11"	85	38	
-15						Completely weathered rock at 14 feet.
-20						End boring at 15 feet.

Plate B17

BORING LOG						W.O. 99-3144
BORING NO. B18 (STA 171+00)		DRIVING WT.	140 lb.	DATE OF DRILLING	2/23/99	
SURFACE ELEV. 105.7±		DROP	30 in.	WATER LEVEL	None	
DEPTH	GRAPE	SAMPLE	BLOWS PER FOOT	DRY DENSITY (PCF)	MOIST. CONT. (%)	DESCRIPTION
0						
			9/6"	94	24	Clayey SILT (ML-CL) - Mottled reddish brown, moist, stiff, with sand.
			30/3"			
-5						WEATHERED BASALT (WM-WH) - Mottled gray, dense to medium hard.
			96/9"	121	9	
-10						Begin NX coring at 4 feet.
			10/No Penetration			
-15						91% Recovery from 4 to 8 feet.
-20						RQD = 53%
						Completely weathered basalt from 7 to 8 feet.
						End NX coring at 8 feet.
						End boring at 15 feet.

Plate B18

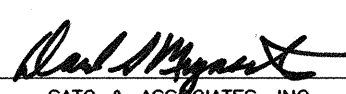
BORING LOG						W.O. 99-3144
BORING NO. B19 (STA 180+00)		DRIVING WT.	140 lb.	DATE OF DRILLING	2/23/99	
SURFACE ELEV. 96.8±		DROP	30 in.	WATER LEVEL	None	
DEPTH	GRAPE	SAMPLE	BLOWS PER FOOT	DRY DENSITY (PCF)	MOIST. CONT. (%)	DESCRIPTION
0						
			36	84	24	Clayey SILT (ML-CL) - Reddish brown, moist, stiff, with sand.
			70/10"	87	30	
-5						WEATHERED BASALT (WM-WH) - Gray, medium hard.
			100/8"	103	25	
-10						Begin NX coring at 9 feet.
-15						100% Recovery from 9 to 14 feet.
-20						RQD = 93%
						End boring at 14 feet.

Plate B19

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SATO & ASSOCIATES, INC.  
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**BORING LOGS**  
**MOKULELE HIGHWAY WIDENING**  
Vicinity of Cane Haul Road  
To  
Maui Humane Society  
Federal - Aid Project No. NH-0311(5)  
Scale: AS NOTED Date: JUNE 2002

SHEET No. 2 OF 2 SHEETS