

FED. ROAD DIST. NO.	STATE	STATE PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83A-01-90	1990	8	9

BORING LOG

W.O. 88-1693

BORING NO.		B7B		DRIVING WT.		140 lb.		DATE OF DRILLING		5-16-89	
SURFACE ELEV.		10+		DROP		30 in.		WATER LEVEL		@ 3 feet	
DEPTH (FEET)	GRAPH SYMBOL	UNIFIED SOIL CLASSIFICATION	BLOWS/FT.	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION (%)	DESCRIPTION				
0		MH-CH	21	73	46		Silty CLAY - Brown, moist, medium stiff.				
▽	■										
5		ML-OL	4	54	76		Clayey SILT - Gray, soft, with sand.				
	■										
10			4	45	98		End boring at 10.5 feet.				
15											
20											

BORING LOG

W.O. 88-1693

BORING NO. B7C		DRIVING WT. 140 lb.		DATE OF DRILLING 5-16-89			
SURFACE ELEV. 13+		DROP 30 in.		WATER LEVEL @ 5.5 feet			
DEPTH (FEET)	GRAPH SYMBOL	UNIFIED SOIL CLASSIFICATION	BLOWS/FT.	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION (%)	DESCRIPTION
0		MH-CH	17	80	38		Silty CLAY - Brown, moist, medium stiff.
5		ML-SM	3	66	61		Sandy SILT - Brown, moist, firm to soft.
10			9	70	55		Grading to mottled brown color and firm to medium stiff from 10 feet.
15		MH	24	92	33		Silty CLAY - Mottled brown, stiff to medium stiff.
20			45	94	31		
25			14	83	41		Grading with sand and highly weathered rock fragments from 25 feet.
30			29	77	49		
35							BASALT - Gray, hard, slightly vesicular. Begin NX coring from 31 feet. 98% Recovery from 31 feet. (RQD = 96%)
40							88% Recovery from 36 to 41 feet. (RQD = 12%)
45							End boring at 41 feet.
50							
55							
60							

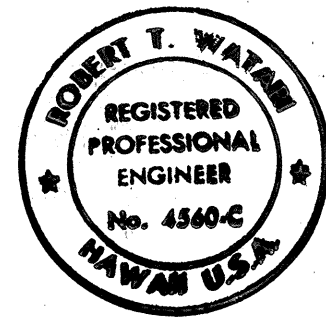
BORING LOG

W.O. 88-1693

BORING NO. B8		DRIVING WT. 140 lb.		DATE OF DRILLING 12-15-88			
SURFACE ELEV. 18±		DROP 30 in.		WATER LEVEL @ 12 ft.			
DEPTH (FEET)	SOIL SYMBOL	UNIFIED SOIL CLASSIFICATION	BLOWS/FT.	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION (%)	DESCRIPTION
0		MH-CH	108/11"	94	29		Silty CLAY - Brown, moist, stiff, with weathered rock fragments.
5			100/10"	93	30		Grading to mottled orange and gray color from 7.5 feet.
10		SM	17	80	31		Silty SAND - Mottled brown, moist, medium dense, with gravels.
15			10	No Recovery			Grading loose from 15 feet.
20			58	92	26		Slightly cemented from 19 to 22 feet.
25			13	No Recovery			
30			8	No Recovery			
35		CL	16	70	51		Silty CLAY - Mottled grayish brown, firm to medium stiff, with highly weathered rock fragments.
40			13	76	48		Grading stiff from 43 feet.
45			85/7"	No Recovery			
50							HIGHLY WEATHERED ROCK - Light gray, medium hard to hard.
55							Grading hard from 49 feet. Begin NX coring from 49 feet. 90% Recovery from 49 to 54 feet. (RQD 66%) 15% Recovery from 54 to 59 feet. (RQD 6%)
60							End NX coring at 59 feet.

BORING NO.		B8 (Cont.)		DRIVING WT.		140 lb.		DATE OF DRILLING		12-15-88	
SURFACE ELEV.		18±		DROP		30 in.		WATER LEVEL		@ 12 ft.	
DEPTH (FEET)	GRAPH SYMBOL	UNIFIED SOIL CLASSIFICATION	BLOWS/FT.	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION (%)	DESCRIPTION				
60			62	No Recovery							
65			50/3"	No Recovery							
70							BASALT - Gray, hard, slightly vesicular, fractured.				
75							Begin NX coring from 69.5 feet. 95% Recovery from 69.5 to 74.5 feet. (RQD 77%) 87% Recovery from 74.5 to 79.5 feet. (RQD 67%)				
80							End boring at 79.5 feet.				
85											
90											

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DESIGNED BY	
	TRACED BY	
	CHECKED BY	

THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

Robert T. Water

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BORING LOGS

KAMEHAMEHA HIGHWAY - HELEMANO/WAIALUA
JUNCTION TO HALEIWA BEACH PARK
SOIL STABILIZATION
PROJECT NO. 83A-01-90

SHEET NO. 8 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	STATE PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83A-01-90	1990	9	9

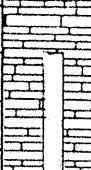
BORING LOG

W.O. 88-1693

BORING NO. B13		DRIVING WT. 140 lb.		DATE OF DRILLING 1-4-89			
SURFACE ELEV. 4 ±		DROP 30 in.		WATER LEVEL @ 4 ft.			
DEPTH (FEET)	GRAPH SYMBOL	UNIFIED SOIL CLASSIFICATION	BLOWS/FT.	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	RELATIVE COMPACTION (%)	DESCRIPTION
0		MH-CH					Silty CLAY - Brown, moist, firm, with sand and gravels.
▽			2	70	53		Grading soft from 3 feet.
5		ML-OL	13	53	89		Clayey SILT - Dark gray, soft, with sand and gravels, organic.
10			4	76	44		
15			3	71	56		
20			4	No Recovery			Grading with shell fragments from 20 feet.
25			3	No Recovery			
30			4	No Recovery			
33			3	57	71		
37			4	Tip Recovery			
40			4	58	70		
45			6	54	83		
50			10	54	78		
55			10	51	86		
60		10/No Penetration					Silty CLAY - Brown, stiff, with cobbles and boulders.

BORING LOG

W.O. 88-1693

BORING NO. B13 (Cont.)		DRIVING WT. 140 lb.		DATE OF DRILLING 1-10-89			
SURFACE ELEV. 4 ±		DROP 30 in.		WATER LEVEL @ 4 ft.			
DEPTH (FEET)	GRAPH SYMBOL	UNIFIED SOIL CLASSIFICATION	BLOWS/FT.	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION (%)	DESCRIPTION
60		CL					Begin NX coring at 64 feet. 72% Recovery from 64 to 69 feet. (RQD 24%)
65							End NX coring at 69 feet.
70		83	81	42	HIGHLY WEATHERED ROCK - Mottled gray brown, dense.		
75	80/3"	Tip Recovery					
80				BASALT - Gray, hard, slightly vesicular. Begin NX coring at 79 feet. 100% Recovery from 79 to 84 feet. (RQD 58%)			
85							100% Recovery from 84 to 89 feet. (RQD 100%)
90							End boring at 89 feet.

BORING LOG

W.O. 88-1693

BORING NO. B13A		DRIVING WT. 140 lb.		DATE OF DRILLING 5-17-89			
SURFACE ELEV. 6+		DROP 30 in.		WATER LEVEL @ 5.5 feet			
DEPTH (FEET)	GRAPH SYMBOL	UNIFIED SOIL CLASSIFICATION	BLOWS/FT.	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION (%)	DESCRIPTION
0		MH-CH					Silty CLAY - Brown, moist, medium stiff.
	■		8		35		
							Grading soft from 3 feet.
5	▽		4	64	61		
	■						
		ML-OL					Clayey SILT - Dark gray, soft, with sand.
	■		1	68	46		
10							
	■		9	83	38		Grading with gravel from 14 feet.
15							End boring at 15 feet.
20							
25							
30							

BORING LOG

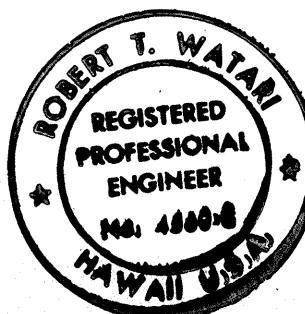
W.O. 88-1693

BORING NO. B13B		DRIVING WT. 140 lb.		DATE OF DRILLING 5-17-89			
SURFACE ELEV. 6+		DROP 30 in.		WATER LEVEL @ 5.5 feet			
DEPTH (FEET)	GRAPH SYMBOL	UNIFIED SOIL CLASSIFICATION	BLOWS/FT.	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION (%)	DESCRIPTION
0		MH-CH					Silty CLAY - Brown, moist, firm to medium stiff.
	■		11	71	47		
5	▽		3	64	59		Grading soft from 4 feet.
	■	ML-OL					Clayey SILT - Dark gray, soft, with sand.
10	■		3	59	70		
15	■		1	55	74		
20	■		15	76	44		Gravels at 18 feet.
25	■		6	62	50		
30	■		6	58	65		
							Grading with river washed gravel and shell fragments from 34 feet.
35	■		5	58	74		
40	■		7	58	74		
45	■		8	56	75		
50	■		7	68	53		
55	■		9	54	74		
60	■		10	50	88		

BORING LOG

W.O. 88-1693

BORING NO. B13B (cont.)		DRIVING WT. 140 lb.		DATE OF DRILLING 5-17-89			
SURFACE ELEV. 6+		DROP 30 in.		WATER LEVEL @ 5.5 feet			
DEPTH (FEET)	GRAPH SYMBOL	UNIFIED SOIL CLASSIFICATION	BLOWS/FT.	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION (%)	DESCRIPTION
60			11	62	65		
65							
70		108	Tip Recovery				BASALT - Gray, medium hard, slightly vesicular. Begin NX coring from 69.5 feet. 90% Recovery from 69.5 to 74.5 feet. (RQD=44%)
75							61% Recovery from 74.5 to 79.5 feet. (RQD=21%) Weathered seam at 75 feet.
80							
85							End boring at 79.5 feet.
90							



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ME OR UNDER MY SUPERVISION,
Robert T. Watson

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