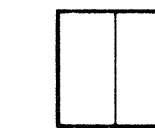
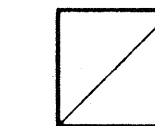
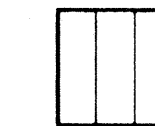
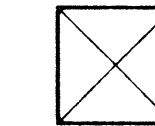
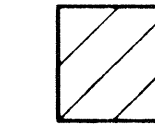


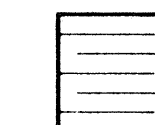
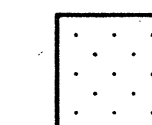
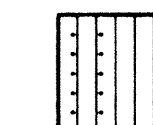
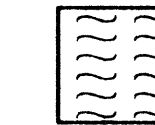
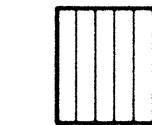
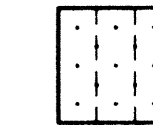
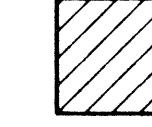
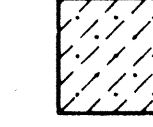
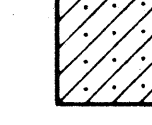
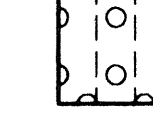
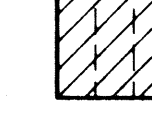
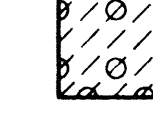
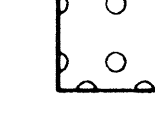
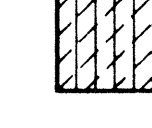
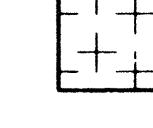
FED. ROAD DIST NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(65)	1992	306	309

LEGEND

Sampler

	3" Shelby Tube
	2" Split Spoon
	3" Piston Tube
	3" S & H Sampler
	HQ Core Barrel

Graphic Symbol Legend

	Basalt		Sand		Sandy Silt
	Clinker		Silt		Silty Sand
	Weathered Rock		Clay		Clayey Sand
	Cinders		Sandy Clay		Silty Gravel
	Cobbles or Boulders		Silty Clay		Clayey Gravel
	Gravel		Clayey Silt		Tuff

DEFINITION OF TERMS

SOIL DESCRIPTION

Density or Consistency			
Granular Soil		Cohesive Soil	
Relative Density	Blow Count, N	Consistency	Blow Count, N
Loose	0 - 10	Soft	0 - 4
Medium Density	10 - 30	Medium Stiff	4 - 8
Dense	30 or more	Stiff	8 - 30
		Hard	30 or more

ROCK DESCRIPTION

HARDNESS

Very hard to hard:	Specimen breaks by hammer with more than one blow.
Moderately hard:	Specimen can be broken by one blow of hammer. Cannot be scraped by knife.
Soft:	Can be indented by one hammer blow. Can be scraped or peeled by knife.
Very soft:	Crumbles under hammer blow. Can be peeled and carved with knife. Can be indented by finger nail.

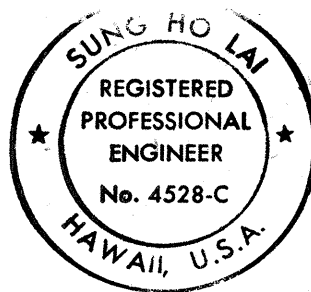
WEATHERING

Fresh:	No visible sign of decomposition or discoloration.
Slightly weathered:	Slight discoloration inwards from open fractures (up to 1 in.).
Moderately weathered:	Discoloration throughout. Weaker minerals decomposed.
Highly weathered:	Most minerals decomposed. Some corestones present in residual soil mass (saprolite/decomposed rock).
Completely weathered:	Minerals decomposed to soil but fabric and structure preserved (saprolite/decomposed rock).

NOTE:

THE BORING LOGS, DEFINITIONS, AND LEGEND ARE FROM HAWAII GEOTECHNICAL GROUP, INC. "GEOTECHNICAL DATA REPORT, ADVANCE SIGNING PORTION OF FURNISHING AND INSTALLING SYSTEMS COMPONENTS, INTERSTATE ROUTE H-3, FAIP NO. I-H3-1(65) OAHU, HAWAII" DATED NOVEMBER 1991.

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION
Sung Ho Lim
HAWAII GEOTECHNICAL GROUP, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BORING LEGEND AND NOTES

GEOTECHNICAL
INTERSTATE ROUTE H-3
F.A.I.P. PROJ. NO. I-H3-1(65)

SCALE: NONE DATE: DEC. 1991

SHEET No.FLI OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I - H3 - I (65)	1992	307	309

B-1

CMS 29

Depth (Ft.)	Unified Soil Classification	DESCRIPTION	Sample No.	SPT N Blows Per Ft.	Probing Blows Per Ft.	Water Cont. %	Plastic Limit %	Liquid Limit %	Wet Density P.C.F.	Dry Density P.C.F.	% Minus No. 200	Unconf. Comp P.S.F.	Vane Shear P.S.F.
		Elevation = 231.6'											
		AC Pavement											
		Base Course and Subbase											
5	CH	Stiff, mottled brown gray, silty CLAY w/ rock fragments (fill)	A	26	19								
10			B		28	28	58	124	96				
15					29								
20	MH	Stiff, mottled brown, clayey SILT w/ decomposed rock fragments (fill)	C	9	48								
25			D		45	44	74	108	74				
30		5-14-91											
35		5-14-91	E	7	50								
40	(MH)	Stiff, grayish brown, clayey SILT	F		68		112	67					
45			G	3	80								
50	(MH)	Soft, mottled gray brown, clayey SILT	H		80								
			I	3									
			J		99		94	47					
	(MH)	Soft, mottled gray brown, clayey SILT	K	4	96								
			L		110		94	45					
55		End of boring @ 51.5' 5-14-91											
		*Elevation provided by Parsons Brinckerhoff Quade & Douglas, August 26, 1991											

B-2

CMS 30

Depth (Ft.)	Unified Soil Classification	DESCRIPTION	Sample No.	SPT N Blows Per Ft.	Probing Blows Per Ft.	Water Cont. %	Plastic Limit %	Liquid Limit %	Wet Density P.C.F.	Dry Density P.C.F.	% Minus No. 200	Unconf. Comp P.S.F.	Vane Shear P.S.F.
		Elevation = 317.8'											
		AC Pavement											
		Base Course and Subbase											
5		Very soft, mottled light brown BASALT, completely weathered (saprolite/decomposed rock)	A	64	34								
10			B		70/5 (99/2)	39	34	54					
15		Soft, mottled gray brown, BASALT, highly to completely weathered (saprolite/decomposed rock)	C	42	38								
20		Very soft, mottled light brown BASALT, completely weathered (saprolite/decomposed rock)	D		25/5 (47/5)	23	34	40					
25			E	80	39								
30		Soft, mottled gray brown BASALT, highly to completely weathered (saprolite/decomposed rock)	F		100/5	27	28						
35		5-10-91											
		5-9-91	G	50/2	17								
		Very soft to soft, mottled light brown BASALT, highly to completely weathered (saprolite/decomposed rock)											
		End of boring @ 35.2' 5-9-91											
		*Elevation provided by Parsons Brinckerhoff Quade & Douglas, August 26, 1991											

B-3

VMS 33

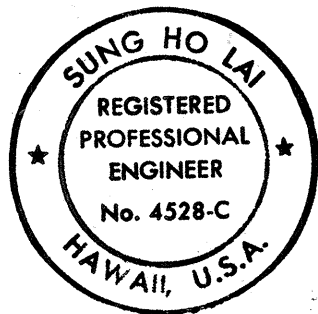
Depth (Ft.)	Unified Soil Classification	DESCRIPTION	Sample No.	SPT N Blows Per Ft.	Probing Blows Per Ft.	Water Cont. %	Plastic Limit %	Liquid Limit %	Wet Density P.C.F.	Dry Density P.C.F.	% Minus No. 200	Unconf. Comp P.S.F.	Vane Shear P.S.F.
		Elevation = 90.1'											
5	(CH)	Hard, brown, silty CLAY	A	36	35								
10			B		50		109	73					
15	MH	Hard to stiff, mottled brown, clayey SILT	C	37	48								
20			D		48	49	118	104	70				
25			E	6	58								
30			F		65		102	62					
35			G	5	64								
40	MH	Soft to medium stiff, mottled brown, clayey SILT w/ decomposed rock	H		60	47	74	105	65				
45			I	7	66								
50		5-3-91	J		73		101	58					
55		5-5-91	K	9	63								
60	(MH)	Stiff, mottled brown gray, clayey SILT	L		67								
65			M	9	67								
			N	(1/5) (4/5)	85								
	(MH)	Stiff, Mottled reddish brown, clayey SILT	O	12	65								
		Stiff to hard, mottled brown, clayey SILT	P		78		126	71					
		Soft, mottled gray brown, BASALT, highly to completely weathered (saprolite/decomposed rock)	Q	50/5	31								
		End of Boring @ 65.5 5-3-91											
		*Elevation provided by Parsons Brinckerhoff Quade & Douglas, August 26, 1991											

B-5

VMS 35

Depth (Ft.)	Unified Soil Classification	DESCRIPTION	Sample No.	SPT N Blows Per Ft.	Probing Blows Per Ft.	Water Cont. %	Plastic Limit %	Liquid Limit %	Wet Density P.C.F.	Dry Density P.C.F.	% Minus No. 200	Unconf. Comp P.S.F.	Vane Shear P.S.F.
		Elevation = 54.3'											
		AC Pavement											
		Base Course and Subbase											
5			A	31	35								
10			B		14		123	108					
15	CL	Stiff, mottled red brown, silty CLAY w/ decomposed rock (fill)	C	11	43								
20			D		18	25	44	120	102				
25			E	5	20								
30		COBBLES & BOULDERS 5-8-91 5-14-91	F		30		119	92					
35	(CH)	Medium stiff, mottled brown, silty CLAY w/ cobbles & boulders (fill ?)	G	(18)	32	27	56	120	91				
		Stiff, mottled light reddish brown, silty CLAY w/ decomposed rock fragments	H	21	37								
	CH												
		End of boring @ 36.5' 5-8-91											
		*Elevation provided by Parsons Brinckerhoff Quade & Douglas, August 26, 1991											

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	
	NO.	



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Sung Ho Lai
HAWAII GEOTECHNICAL GROUP, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
BORING LOGS B-1, B-2, B-3 & B-5
FOR CMS 29 & 30 AND VMS 33 & 35
GEOTECHNICAL
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-I(65)
SCALE: AS SHOWN
DATE: DEC. 1991
SHEET NO. FL2 OF 4 SHEETS

B-6

VMS 36

Depth (Ft.)	Unified Soil Classification	DESCRIPTION	Sample No.	SPT N Blows Per Ft.	Probing Blows Per Ft.	Water Cont. %	Plastic Limit %	Liquid Limit %	Wet Density P.C.F.	Dry Density P.C.F.	X Minus No. 200	Unconf. Comp P.S.F.	Vane Shear P.S.F.
Elevation = 307.3'													
5	(MH)	Base Course and Subbase	A	18	42								
5	(MH)	Stiff, mottled light reddish brown, clayey SILT w/decomposed rock fragments	B		26			117	92			560	660
10			C	16	49								680
15	MH	Stiff, mottled reddish brown, clayey SILT w/decomposed rock fragments	D		39	53	113	117	84				
20			E	17	48								
25			F		44	46	82	104	72				
30		Very soft, mottled reddish brown BASALT, completely weathered (saprolite/decomposed rock)	G	18	51								
35			H		44			108	75			300	400
40			I	23	46								300
45		End of boring @ 46.5' 5-10-91	J	(39)	50								
					54								

*Elevation provided by Parsons Brinckerhoff Quade & Douglas, August 26, 1991

~~DELETED~~

VMS 37

Depth (Ft.)	Unified Soil Classification	DESCRIPTION	Sample No.	SPT N Blows Per Ft.	Probing Blows Per Ft.	Water Cont. %	Plastic Limit %	Liquid Limit %	Wet Density P.C.F.	Dry Density P.C.F.	X Minus No. 200	Unconf. Comp P.S.F.	Vane Shear P.S.F.
Elevation = 124.8'													
5	(MH)	Hard, mottled brown, clayey SILT w/decomposed rock & gravel & traces of roots (fill)	A	37	28								
5	(MH)	Medium stiff, mottled brown gray, clayey SILT w/decomposed rock & traces of roots (fill)	B		52			108	71				
10	MH	5-15-91	C	2	78								
15		Soft, mottled dark gray brown, clayey SILT	D	(34)	68	53	36	51					
20	MH	5-13-91	E	10	64								
25		Stiff, mottled brown gray, clayey SILT w/gravel & rock fragments	F	(5/5) (19/5)	80	50	119						
30			G	43	69								
35	(GM)	Dense, mottled gray, silty and clayey GRAVEL & COBBLES (alluvial)	H	(10/5)	39								
40		Hard, gray, slightly to moderately vesicular BASALT, closely to medium fractured, slightly weathered	I	50/0									
45		End of boring @ 47' 5-15-91	J										

*Elevation provided by Parsons Brinckerhoff Quade & Douglas, August 26, 1991

B-8

VMS 39

Depth (Ft.)	Unified Soil Classification	DESCRIPTION	Sample No.	SPT N Blows Per Ft.	Probing Blows Per Ft.	Water Cont. %	Plastic Limit %	Liquid Limit %	Wet Density P.C.F.	Dry Density P.C.F.	X Minus No. 200	Unconf. Comp P.S.F.	Vane Shear P.S.F.
Elevation = 13.4'													
5	(CH-MH)	Hard, mottled brown, silty CLAY w/sand & gravel (fill)	A	56	17								
5		5-31-91	B	4/5 13/5	22								
10		COBBLES & BOULDERS	C	12	37								
15	(CH)	Stiff, mottled gray brown, silty CLAY w/rock fragments (subrounded) (fill ?)	D		53	30	50						
20	(ML-MH)	5-17-91	E	3									
25		Soft, brownish gray, sandy SILT w/gravel (subrounded)	F		75		102	58					
30	(MH-OH)	Soft, dark gray, organic, clayey SILT w/shell fragments, sand, subrounded gravel & traces of wood debris	G	4	73								
35			H		93	86	102	91	47				
40	MH-OH	Soft, dark gray, organic, clayey SILT w/shell fragments	I	2	107								
45			J		113		83	39					
50	(MH-OH)	Soft, dark gray, organic, clayey SILT w/shell fragments	K	1	86								
55			L		130		90	39					
60	MH	Soft, dark gray, organic, sandy SILT w/shell fragments, gravel & traces of wood	M	1	67								
65	(GM)	Loose, dark gray, sandy GRAVEL w/silt	N		44	49	76	90	63				
70			O	5	40								
75	(MH-OH)	Soft, dark gray, organic, clayey SILT	P		30	93	109	84					
80	(SM)	Loose, dark gray, silty fine SAND w/traces of gravel	Q	4	63	58							

B-8 (Cont.)

VMS 39 (Cont.)

Depth (Ft.)	Unified Soil Classification	DESCRIPTION	Sample No.	SPT N Blows Per Ft.	Probing Blows Per Ft.	Water Cont. %	Plastic Limit %	Liquid Limit %	Wet Density P.C.F.	Dry Density P.C.F.	X Minus No. 200	Unconf. Comp P.S.F.	Vane Shear P.S.F.
5	(GM)	Dense, gray brown, silty GRAVEL w/cobbles & boulders	R	50/1	24								
10	(MH)	Mottled gray brown, clayey SILT w/decomposed rock fragments											
15		End of boring @ 90.0' 5-17-91											

*Elevation provided by Parsons Brinckerhoff Quade & Douglas, August 26, 1991

ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DRAWN BY	
TRACED BY	
DESIGNED BY	
CHECKED BY	
NOTED BY	
NO.	



10/31/94 DELETED B-7 LOG PER DCN 65-037
DATE REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BORING LOGS B-6 AND B-8
FOR VMS 36 AND VMS 39

GEOTECHNICAL
INTERSTATE ROUTE H-3
FA.I. PROJ. NO. I-H3-1(65)

SCALE: AS SHOWN DATE: DEC. 1991
SHEET NO. FL3 OF 4 SHEETS

