FED. ROAD DIST. NO. PROJ. NO. 2003 H1H-01-00M

Boring Log Legend

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

	MAJOR DIVISIONS	S	US	CS	TYPICAL DESCRIPTIONS
	GRAVELS	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
COARSE- GRAINED	GRAVELS	LESS THAN 5% FINES		GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
SOILS	MORE THAN 50% OF COARSE	GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
	FRACTION RETAINED ON NO. 4 SIEVE	MORE THAN 12% FINES		GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	CANDO	CLEAN SANDS	0	SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
MORE THAN 50% OF MATERIAL	SANDS	LESS THAN 5% FINES		SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
RETAINED ON NO. 200 SIEVE	50% OR MORE OF COARSE FRACTION PASSING	SANDS WITH FINES		SM	SILTY SANDS, SAND-SILT MIXTURES
	THROUGH NO. 4 SIEVE	MORE THAN 12% FINES		SC	CLAYEY SANDS, SAND-CLAY MIXTURES
	CII TO			ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
FINE- GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
500/ 00 11005 05				МН	INORGANIC SILT, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
50% OR MORE OF MATERIAL PASSING THROUGH NO. 200	SILTS AND CLAYS	LIQUID LIMIT 50 OR MORE		СН	INORGANIC CLAYS OF HIGH PLASTICITY
SIEVE				ОН	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
ŀ	HIGHLY ORGANIC SOI	LS	7 7 7 7 7 7 7 7	PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

LEGEND

2-INCH O.D. STANDARD PENETRATION TEST

3-INCH O.D. MODIFIED CALIFORNIA SAMPLE

GRAB SAMPLE

SHELBY TUBE SAMPLE

CORE SAMPLE

LIQUID LIMIT

PLASTICITY INDEX

TORVANE SHEAR (tsf)

POCKET PENETROMETER (tsf)

WATER LEVEL OBSERVED IN BORING

GEOTECHNICAL NOTES

- A geotechnical engineering report entitled "Geotechnical Engineering Exploration, Interstate Route H-1 Rehabilitation, Vicinity of Ola Lane to Kalihi Street, Honolulu, Oahu, Hawaii" dated March 29, 2002 has been prepared by Geolabs, Inc. A copy of the report is on file at the office of the Engineer for review by the Contractor.
- For boring locations, see Roadway Plan Sheets 12-16.
- The information presented in the logs of borings depict the subsurface conditions encountered at that specified location and at the time of the field exploration only. Variations of subsoil conditions from those depicted in the logs of borings may occur between and beyond the borings.
- The penetration resistance shown on the logs of borings indicate the number of blows required for the specific sampler type used. The blow counts may need to be factored to obtain the Standard Penetration Test (SPT) blow counts.
- The data given is for general information only. Bidders shall examine the site and the boring data and draw their own conclusions therefrom as to the character of materials to be encountered. The Engineer will not assume responsibility for variations of subsoil quality or conditions other than at the boring locations shown and at the time the borings were taken.

STATE OF HAWAII **DEPARTMENT OF TRANSPORTATION** HIGHWAYS DIVISION

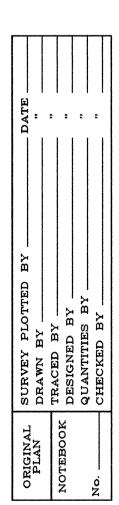
BORING LOGS

INTERSTATE ROUTE H-1 REHABILITATION OLA LANE TO KALIHI STREET PROJECT NO. H1H-01-00M

Scale: None

Date: October 31, 2002

SHEET No. C-53 OF C-59 SHEETS



Page	T20vaRvg-9304Miniarishggs3F		BS, INC. Engineering			STATE ROUTE H-1 REHABILITATION TY OF OLA LANE TO KALIHI STREET HONOLULU, OAHU, HAWAII Log of Boring 1		1130-ийн үү 250 Өйнөн ойгуун Ш	
13 46/.5° +30/.3° Ref. 15/.0° Ref. 16/.0°	Other Tests Moisture Content (%) Dry Unit	Weignt (pct) Core Recovery (%) RQD (%)	Penetration Resistance (blows/foot) Pocket Pen. (tsf)	Depth (feet) – Sample Graphic	nscs	Approximate Ground Surface Sta. 15+75 Elevation (feet MSL): 30 *			Moisture Content (%)
Date Started: February 20, 2002 Date Completed: February 20, 2002 Date Completed: February 20, 2002 Date Started: Date Completed: Date Complet			46/.5' +30/.3' Ref.			12-inch ASPHALTIC CONCRETE Orangish brown CLAYEY SAND with gravel and some silt, very dense, damp (subbase) Gray BASALT, dense Boring terminated at 3 feet * Elevations estimated from Roadway Plans transmitted by Wilson Okamoto on March 12,			13
Date Started: February 20, 2002 Date Completed: February 20, 2002 Logged By: Y. Chiba Date Started: SIMCO 2400SK-1 Date Started: SIMCO 2400SK-1				10-					
Date Started:February 20, 2002Water Level: ▼ Not EncounteredNot EncounteredDate Started: Date Completed:Logged By:Y. ChibaDrill Rig:SIMCO 2400SK-1Logged By:				15-					
Date Completed: February 20, 2002 Logged By: Y. Chiba Date Completed: SIMCO 2400SK-1 Date Completed: Date C	Data Ota da da			20			GPJ GEOLABS.GDT 4/15/02	Data Sta	
	Date Completed:	February 2				Not Effcountered	DOT 4750-00.	Date Co	mplet
Total Depth: 3 feet Drilling Method: & 4" Auger Grand	ட்புத்தப் பிர்.	**************************************					907		

T 125-d (mg-750-96 danin vitings) si		Geo	techi	nical	BS, IN Engine	eering				STATE ROUTE H-1 REHABILITATION FY OF OLA LANE TO KALIHI STREET HONOLULU, OAHU, HAWAII Log of Boring Boring
Other Tests	Moisture Content (%)	Dry Unit Weight (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen (tsf)	Depth (feet)	Sample Graphic	nscs	Approximate Ground Surface Sta. 18+00 Elevation (feet MSL): 39 * Description 11-inch ASPHALTIC CONCRETE
	13				28				SM	Dark brown SILTY SAND with gravel and traces o clay, medium dense, damp (subbase)
					13/.5' +30/.3' Ref.			X	SM SM	Tannish white SILTY FINE SAND, medium dense dry to damp (fill) Dark brown SILTY SAND with highly weathered basaltic gravel, dense, damp
	25				30/.3' Ref. 42	2.5	5	X	СН	Grayish brown with orange mottling SILTY CLAY with sand and some gravel, very stiff, dry to damp
									SM	Dark brown SILTY SAND with highly weathered basaltic gravel, medium dense, dry to damp
					15/.0' Ref.					Gray BASALT, dense Boring terminated at 8 feet
							10 ⁻			
							15 ⁻			
						:				
41 GVZ										
Date St	arted:		Febr	uarv 2	0, 2002		20-			Water Level: ▼ Not Engage to red
Date Co Logged	omple By:		Febru Y. Ch	uary 2 niba	1, 2002					Drill Rig: MOBILE B-53
Total Do Work O			8 fee							Drilling Method: 4" Auger Driving Energy: 140 lb. wt., 30 in. drop

FED. ROAD
DIST. NO.STATEPROJ. NO.FISCAL
YEARSHEET
NO.TOTAL
SHEETSHAWAIIHAW.H1H-01-00M2003123234

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BORING LOGS

INTERSTATE ROUTE H-1 REHABILITATION
OLA LANE TO KALIHI STREET
PROJECT NO. H1H-01-00M

Scale: None

Date: October 31, 2002

SHEET No. C-54 OFC-59SHEETS

Т 15-d5 ну 256-байленн 1803 р II					3S, IN Engine					STATE ROUTE H-1 REHABILITATION TY OF OLA LANE TO KALIHI STREET HONOLULU, OAHU, HAWAII Log of Boring 3				
Other Tests	Moisture Content (%)	Dry Unit Weight (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample Graphic	USCS	Approximate Ground Surface Sta. 22+50 Elevation (feet MSL): 49 *				
<u> </u>	žΰ	کۃ	သူ	R(<u> </u>	Pc (ts	۵	S	j š	Description 12-inch ASPHALTIC CONCRETE				
	5				35/.3' Ref.			ADD ACT	SM	Dark brown SILTY SAND with gravel, very dense, moist (subbase)				
	3				10/.0' Ref.			X						
					54				CH	Grayish to tannish brown with multi-color mottling SILTY CLAY with sand and some highly weathered gravel, very stiff, moist				
	47				8	1.5	5							
LL=76 PI=42	38				24	<.5				grades to soft, moist to wet				
	19				30/.5' +10/.0' Ref.	4.0	10	00000000000000000000000000000000000000	GM	grades to hard, damp Brownish gray with multi-color mottling highly weathered BASALT, breaks down to silty gravel with sand, dense				
			97	93			15			Gray dense BASALT with some calcite minerals, moderately fractured, slightly weathered, very hard (basalt formation)				
										Boring terminated at 18.5 feet				
Date Sta	arted:		Febru	uary 2	21, 2002		¹ 20			Water Level: Not Encountered				
Date Co	mplet	ed:	Febru	uary 2	21, 2002					Not Encountered				
Logged Total De			Y. Ch 18.5							Drill Rig: MOBILE B-53 Drilling Method: 4" Auger & NX Coring				
Work O			4750							Driving Energy: 140 lb. wt., 30 in. drop				

T-to-diap-930 Millioner/lage of		otechni	ABS, IN		•			STATE ROUTE H-1 REHABILITATION TY OF OLA LANE TO KALIHI STREET HONOLULU, OAHU, HAWAII 4
Other Tests	Moisture Content (%) Dry Unit	Core Recovery (%)	RQD (%) Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Sample	Graphic	SN	Approximate Ground Surface Sta. 32+60 Description 6-inch ASPHALTIC CONCRETE Dark brown SILTY GRAVEL with sand, medium dense, dry to damp (subbase) Boring terminated at 0.9 feet
					5-			
				1	0-			
				1	5-			
Date Sta Date Co Logged Total De	mpleted: By:		,,,,,_,_,_,_,,,,,,,,,,,,,,,,,	2	-0-			Water Level: Not Encountered Drill Rig: MOBILE B-53 Drilling Method: 4" Auger

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1H-01-00 M	2003	124	234

BORING LOGS

INTERSTATE ROUTE H-1 REHABILITATION
OLA LANE TO KALIHI STREET
PROJECT NO. H1H-01-00M

Scale: None

Date: October 31, 2002

SHEET No. C-55 OFC-59SHEETS

Tich ding-2004Manushtgaid		Geot	echr	nical	3S, IN Engine				STATE ROUTE H-1 REHABILITATION TY OF OLA LANE TO KALIHI STREET HONOLULU, OAHU, HAWAII 5
Other Tests	Moisture Content (%)	Dry Unit Weight (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample Graphic USCS	Approximate Ground Surface Sta. 29+10 Description
	6				67			- SW	10-inch ASPHALTIC CONCRETE Brown GRAVELLY SAND with silt, very dense, dr to damp (subbase)
	20	102			54	2.0 4.0		CH	Brown SILTY CLAY with sand and some gravel, very stiff, damp
	24	102			20/.3' Ref.	2.5	5 ⁻		grades to hard
	34				10/.0' Ref.	1.5			grades with coralline gravel, very stiff, damp to moist
	39				16	1.5			grades with cobbles and boulders
							10		
	19				30/.3' Ref.	·	15	QUQUQU	Gray BASALT COBBLES/BOULDERS, dense
					10/.0' Ref.				Boring terminated at 17.5 feet
Date Sta	rted.		Fehr	Jary 2	<u> </u> 21, 2002		20		Water Level: Not Encountered
Date Co		ed:		uary 2	22, 2002				Drill Rig: MOBILE B-53
Logged I									

Pt Dearling-0009 (Meeting) (sign.09	Ge	otechi	nical	3S, IN Engine		ı			STATE ROUTE H-1 REHABILITATION TY OF OLA LANE TO KALIHI STREET HONOLULU, OAHU, HAWAII	Log of Boring
Other Tests	Moisture Content (%) Dry Unit	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample Graphic	nscs	Approximate Ground Surface Sta. 30+50 Elevation (feet MSL): 55.1 * Description	
						-			3.5-inch ASPHALTIC CONCRETE CONCRETE Boring terminated at 0.3 feet	
						5-				
						10-				
						15-				
Date Sta				21, 2002		20-			Water Level: Not Encountered	
Logged I		Y. Cł	niba	21, 2002					Drill Rig: MOBILE B-53	
Total De	epth:	0.3 fe							Drilling Method: 4" Auger Driving Energy: 140 lb. wt., 30 in. drop	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1H-01-00 M	2003	125	234

BORING LOGS

INTERSTATE ROUTE H-1 REHABILITATION
OLA LANE TO KALIHI STREET
PROJECT NO. H1H-01-00M

Scale: None

Date: October 31, 2002

SHEET No. C-56 OFC-59SHEETS

TiOndrog 300 Milanter Nogold					3S, IN Engine					STATE ROUTE H-1 REHABILITATION TY OF OLA LANE TO KALIHI STREET HONOLULU, OAHU, HAWAII 7
Other Tests	Moisture Content (%)	Dry Unit Weight (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample Graphic	nscs	Approximate Ground Surface Sta. 36+80 Elevation (feet MSL): 52 * Description 11-inch ASPHALTIC CONCRETE
	9				65 30/.5' +15/.1' Ref.				SC	Tannish white SILTY CORALLINE GRAVEL with sand, very dense, damp (subbase) Orangish brown with gray mottling GRAVELLY SAND with silt, very dense, damp (subbase) Orangish brown CLAYEY SAND with gravel, very dense Gray BASALT, dense
					10/.0' Ref.		10			Boring terminated at 5 feet
							15			
Date Sta Date Co Logged I	mplete By:	ed:		ary 2 iba	0, 2002		20-			Water Level: ▼ Not Encountered Drill Rig: SIMCO 2400SK-1 Drilling Method: 4" Auger

T30-drug-000Pklanovolkaja;sl	Geo	otechi	nical	SS, IN Engine					STATE ROUTE H-1 REHABILITATION FY OF OLA LANE TO KALIHI STREET HONOLULU, OAHU, HAWAII 8
Other Tests	Moisture Content (%) Dry Unit	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	<u>Sample</u> Graphic	nscs	Approximate Ground Surface Sta. 39+00 Elevation (feet MSL): 55.1 *
Ö	<u>≥0</u> 05	808	8	Re (bl	Po (ts	De	Sa G	<u> </u>	Description 12-inch ASPHALTIC CONCRETE
						-	EM3		
	10			50			00	SM	Whitish tan SILTY CORALLINE SAND with grave dense, damp (subbase)
						-	900	Civi	Orangish brown SILTY GRAVEL with sand and some clay, stiff, damp to moist (subbase)
				38			9000		
								СН	Orangish brown SILTY CLAY with sand and gravel, very stiff, damp
	5			37		_			g.a.o., vo.y ou,
						5-	900	GC	Orangish brown CLAYEY GRAVEL with sand, medium dense, moist
							0000	GP	Orangish brown poorly graded GRAVEL AND
							0000		COBBLE with some clay, dense, damp to moist
				15/.0'		-	000		Boring terminated at 7 feet
				Ref.					
						_			
						_			
						40			
						10-			
						-			
						_			
						_			
						-			
						15-			
						-			
						-			
						-			
415042						_			
OLABS: GD									
Date Sta	rted:	Febru	uary 20	0, 2002		20-			Water Level: Not Encountered
Date Cor Logged B	mpleted:		uary 20	0, 2002					Drill Rig: SIMCO 2400SK-1
, JJ~~ L	pth:	7 fee							Drilling Method: & 4" Auger

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1H-01-00M	2003	126	234

BORING LOGS

INTERSTATE ROUTE H-1 REHABILITATION
OLA LANE TO KALIHI STREET
PROJECT NO. H1H-01-00M

Scale: None

Date: October 31, 2002

SHEET No. C-57 OFC-59SHEETS

T 1/Craft kep-9204 blancker vilage sid	GEOLABS, INC. Geotechnical Engineering									STATE ROUTE H-1 REHABILITATION TY OF OLA LANE TO KALIHI STREET HONOLULU, OAHU, HAWAII 9
Other Tests	<u> </u> (%)		(%)		_	Pocket Pen. (tsf)	eet)	Sample Graphic	nscs	Approximate Ground Surface Sta. 40+50 Elevation (feet MSL): 58.5 * Description
	5				70/.5' Ref. 21/.5' +35/.3' Ref.				GW	12-inch ASPHALTIC CONCRETE Whitish tan SANDY CORALLINE GRAVEL with silt, very dense, damp (subbase) Brown SILTY GRAVEL with sand, very dense, damp (subbase)
			14				5-		СН	Tannish brown SILTY CLAY with cobble and gravel, very stiff, damp
	39				63		10-		SM	Orangish brown SILTY SAND with gravel, very dense, damp to moist
	37				58		15-		СН	Grayish brown with orange mottling SILTY CLAY with gravel and sand, hard, damp Boring terminated at 16.5 feet
Date Star Date Com	nplete	d: l	Febru	ary 1	8, 2002 9, 2002		20-			Water Level: Not Encountered
Logged B Total Dep			Y. Ch 16.5 f							Drill Rig: SIMCO 2400SK-1 Drilling Method: NX Coring & 4" Casing/Tri-cone

Other Tests	ure int (%)	Ç	%						T	
	Moisture Content	Dry Unit Weight (pcf	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen (tsf)	Depth (feet)	Sample Graphic	nscs	Approximate Ground Surface Sta. 37+00 Elevation (feet MSL): 51.3 * Description 12-inch ASPHALTIC CONCRETE
	10		37		65/.5' +25/.3' Ref. 20/.3' Ref.		5	のののののでは、これに、ハーハルーハルーハルーハルーハルーハルーハルーハルーハルーハルーハルーハルーハル		Tannish white SANDY CORALLINE GRAVEL with silt, very dense, damp to dry (subbase) Dark brown GRAVELLY SAND with silt and traces of clay, dense, damp (subbase) Dark brown SANDY GRAVEL, dense, damp to moist Gray dense BASALT, massive, unweathered, very hard
	26				15				SP- SM	Dark gray poorly graded SAND with silt and grave medium dense
			100	92			10	一次介入了公司公司 一		Gray dense BASALT, moderately to closely fractured, moderately weathered, medium hard (basalt formation) grades to massive, unweathered Boring terminated at 12.5 feet
							15			
Date Start					2, 2002		20	-		Water Level: Not Encountered
Date Com Logged B Total Dep	y:	,	Febru Y. Ch 12.5 f	iba	2, 2002					Drill Rig: MOBILE B-53 Drilling Method: 4" Auger & NX Coring

FED. ROAD DIST. NO. STATE PROJ. NO. FISCAL YEAR NO. SHEETS
HAWAII HAW. H1H-01-00M 2003 127 234

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BORING LOGS

INTERSTATE ROUTE H-1 REHABILITATION

OLA LANE TO KALIHI STREET

PROJECT NO. H1H-01-00M

Scale: None

Date: October 31, 2002

SHEET No. C-58 OFC-59SHEETS

T Conding 9004 Alamon Chagus II		GEOI eotechi		·					STATE ROUTE H-1 REHABILITATION TY OF OLA LANE TO KALIHI STREET HONOLULU, OAHU, HAWAII Log of Boring 11
Other Tests	Moisture Content (%)	Weight (pcf) Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample Graphic	nscs	Approximate Ground Surface Sta. 45+50 Elevation (feet MSL): 61.8 * Description
	7			67 60	4.0			GM	12-inch ASPHALTIC CONCRETE Whitish brown SILTY CORALLINE GRAVEL with sand, very dense, damp (subbase) grades to reddish brown with gray mottling Reddish brown SILTY CLAY with gravel and sand hard, damp (fill)
	10			30/.3' Ref.		5		SM	Tannish brown SILTY SAND with gravel and traces of clay, very dense, damp Tannish brown with multi-color mottling SILTY SAND with some highly weathered rock fragments, dense, damp
	23			61		10			Boring terminated at 8.5 feet
						15			
Date Sta				9, 2002 9, 2002		20			Water Level: Not Encountered
Logged Total De Work Or	By: epth:	Y. Ch 8.5 fe 4750-	niba eet	J, 2002					Drill Rig: SIMCO 2400SK-1 Drilling Method: & 4" Auger Driving Energy: 140 lb. wt., 30 in. drop

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1H-01-00M	2003	128	234

BORING LOGS

INTERSTATE ROUTE H-1 REHABILITATION
OLA LANE TO KALIHI STREET
PROJECT NO. H1H-01-00M

Scale: None

Date: October 31, 2002

SHEET No. C-59 OFC-59SHEETS