

## 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	ONAVELO	LESS THAN 5% FINES	000	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
	SANDS	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
F00/ 07 1107 07				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
<b>H</b>	HIGHLY ORGANIC SOI	LS		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



SHELBY TUBE SAMPLE



**CORE SAMPLE** 

**GRAB SAMPLE** 

LIQUID LIMIT

PLASTICITY INDEX

TORVANE SHEAR (tsf)

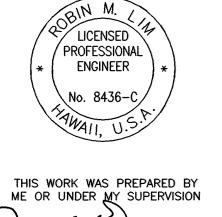
POCKET PENETROMETER (tsf)

WATER LEVEL OBSERVED IN BORING

FED. ROAD DIST. NO. FED. AID PROJ. NO. FISCAL SHEET YEAR NO. 2003 72 ER-12(4) HAWAII HAW.

## **GEOTECHNICAL NOTES**

- A geotechnical engineering report entitled "Geotechnical Engineering Exploration, Kamehameha V Highway, Emergency Replacement Of Kawaikapu Bridge, Federal Aid Project No. ER-12(4), Island Of Molokai, Hawaii" dated March 2001 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 Sheet G1.
- 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 subsurface 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 subsurface material quality or conditions other than at the boring locations shown and at the time the borings were taken.



GEOLABS, INC.

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

**REVISION** 

LEGEND AND NOTES

KAMEHAMEHA V HIGHWAY EMERGENCY REPLACEMENT OF KAWAIKAPU BRIDGE FEDERAL AID PROJECT NO. ER-12(4) Scale: As Noted Date: Nov. 25, 2002

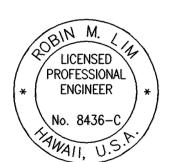
SHEET No. G2

OF 6 SHEETS

					BS, IN					EMERGENCY REPLACEMENT OF KAWAIKAPU BRIDGE  Log of Boring
		Geot	techr	nical	Engine	ering		DIS	TRIC	T OF MOLOKAI, ISLAND OF MOLOKAI 1
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 Elevation (feet MSL): 8 *  Description
	29 32	77			20 6	2.0			MH	Dark brown CLAYEY SILT with some sand and gravel, very stiff, damp to moist (fill) grades with more sand, medium stiff
TV=0.2	38	80			2	<0.5	<b>5</b>	X	МН	Dark brown mottled purple CLAYEY SILT with some sand, very soft, wet (alluvium)
	23				22		10		GM	Brown SILTY GRAVEL with some sand, medium dense (alluvium)
	41	81			5	÷.	15			grades with more sand
	52	,			3		20		MH	Dark brown SANDY SILT with gravel and traces of shell fragments, very soft (alluvium)
TV=0.15	86	51			5	<0.5	25	<b>-</b>	МН	Dark brown SANDY SILT with traces of clay, soft (alluvium)
	69				5		30			grades with traces of shell fragments
TV=0.15	64	63			2	<0.5	35		МН	Dark gray CLAYEY SILT with traces of sand, very soft (lagoonal)
ΓV=0.25	61	60			5	<0.5	40			
LL=58 PI=6	69				12		45		SM	Dark gray SILTY SAND with gravel, medium dense (lagoonal)
Date Sta		***************************************			6, 2001 9, 2001		50			Water Level:   7.5 ft. 01/16/01 1345 HRS  5.1 ft. 01/19/01 1230 HRS
Logged E	Зу:		K. Gr	onset	<del></del>					Drill Rig: CME-55
Total De	pth: der:		88 fee 4630-	···		÷				Drilling Method: 4" Auger & HQ Coring Driving Energy: 140 lb. wt., 30 in. drop

stiff (lagoonal)    17						BS, IN					EMERGENCY REPLACEMENT OF KAWAIKAPU BRIDGE  Log of Boring
21 97 18 55 SM BASALT BOULDER SM Dark gray SILTY SAND with gravel, medium dense (lagoonal)  10 60 MH Dark gray SANDY SILT with some gravel, medium stiff (lagoonal)  17 50/.0' 65 SM Dark gray SILTY SAND with some gravel, loose to medium dense (lagoonal)  18 67 50/.0' BASALT BOULDER SM Dark gray SILTY SAND with some gravel, loose to medium dense (lagoonal)  18 67 50/.0' GM Dark gray SILTY GAVEL with some sand, loose to medium dense (lagoonal)  18 67 50/.0' BASALT BOULDER SM Dark gray SILTY SAND with some gravel, loose to medium dense (lagoonal)  18 67 50/.0' BASALT BOULDER SM Dark gray SILTY SAND with some gravel, loose to medium dense (lagoonal)  BasalT BOULDER SM Dark gray SILTY GAVEL with some gravel, loose to medium dense (lagoonal)  BasalT BOULDER SM Dark gray SILTY GAVEL with some gravel, loose to medium dense (lagoonal)  BasalT BOULDER SM Dark gray SILTY SAND with some gravel, loose to medium dense (lagoonal)  BasalT BOULDER SM Dark gray SILTY SAND with some gravel, loose to medium dense (lagoonal)  BasalT BOULDER SM Dark gray SILTY SAND with some gravel, loose to medium dense (lagoonal)  BasalT BOULDER SM Dark gray SILTY SAND with some gravel, loose to medium dense (lagoonal)  BasalT BOULDER SM Dark gray SILTY SAND with some gravel, loose to medium dense (lagoonal)  BasalT BOULDER SM Dark gray SILTY SAND with some gravel, loose to medium dense (lagoonal)  BasalT BOULDER SM Dark gray SILTY SAND with some gravel, loose to medium dense (lagoonal)  BasalT BOULDER SM Dark gray SILTY SAND with some gravel, loose to medium dense (lagoonal)		ᆜ							DIS	STRI	CT OF MOLOKAI, ISLAND OF MOLOKAI 1
BASALT BOULDER  10  10  10  11  10  10  11  10  11  10  11  10  11  10  11  11  11  11  11  11  11  11  12  11  12  13  14  15  16  17  18  18  18  18  18  18  18  18  18	Other Tests			Core Recovery (%	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen (tsf)	Depth (feet)	Sample	USCS	Description
BASALT BOULDER  SM Dark gray SILTY SAND with some gravel, loose to medium dense (lagoonal)  BASALT BOULDER  GM Dark gray SILTY GRAVEL with some sand, loose to medium dense (lagoonal)  Gray BASALT BOULDERS AND COBBLES with gravel, moderately weathered, hard to very hard (alluvium/colluvium)  Boing terminated at 88 feet  * Elevations estimated from Site Plan provided by Wilson Okamoto & Associates, Inc. on January 1 2001.  Date Started: January 16, 2001  Water Level:   Water Level:  7.5 ft. 01/16/01 1345 HRS  5.1 ft. 01/19/01 1230 HRS		21	97	14				55	-X		BASALT BOULDER  I Dark gray SILTY SAND with gravel, medium
SM Dark gray SILTY SAND with some gravel, loose to medium dense (lagoonal)  11		40				10		60	-	MF	
BASALT BOULDER  To bork gray SILTY GRAVEL with some sand, loose to medium dense (lagoonal)  Gray BASALT BOULDERS AND COBBLES with gravel, moderately weathered, hard to very hard (alluvium/colluvium)  Boring terminated at 88 feet  * Elevations estimated from Site Plan provided b Wilson Okamoto & Associates, Inc. on January 1 2001.  Date Started: January 16, 2001  Date Completed: January 19, 2001  Water Level:   Water Level:  7.5 ft. 01/16/01 1345 HRS 5.1 ft. 01/19/01 1230 HRS				17				65		SM	Dark gray SILTY SAND with some gravel, loose to
Boring terminated at 88 feet   Solving terminated at 88 feet				21				70		GM	Dark gray SILTY GRAVEL with some sand, loose
Boring terminated at 88 feet  * Elevations estimated from Site Plan provided b Wilson Okamoto & Associates, Inc. on January 1 2001.  Date Started: January 16, 2001  Date Completed: January 19, 2001  Water Level:   7.5 ft. 01/16/01 1345 HRS 5.1 ft. 01/19/01 1230 HRS		18		67		50/.0'		75			Gray BASALT BOULDERS AND COBBLES with gravel, moderately weathered, hard to very hard
Boring terminated at 88 feet  * Elevations estimated from Site Plan provided b Wilson Okamoto & Associates, Inc. on January 1 2001.  Date Started: January 16, 2001  Date Completed: January 19, 2001  Water Level:   7.5 ft. 01/16/01 1345 HRS 5.1 ft. 01/19/01 1230 HRS				80				80			
# Elevations estimated from Site Plan provided by Wilson Okamoto & Associates, Inc. on January 1 2001.    Date Started: January 16, 2001   Water Level: ▼ 7.5 ft. 01/16/01 1345 HRS 5.1 ft. 01/19/01 1230 HRS		,		60				85			
Date Started: January 16, 2001   Water Level: \( \sqrt{2} \) 7.5 ft. 01/16/01 1345 HRS 5.1 ft. 01/19/01 1230 HRS	1									1	Boring terminated at 88 feet
Date Started:       January 16, 2001       Water Level: ∑       7.5 ft. 01/16/01 1345 HRS         Date Completed:       January 19, 2001       5.1 ft. 01/19/01 1230 HRS									-	j	* Elevations estimated from Site Plan provided by Wilson Okamoto & Associates, Inc. on January 11 2001.
Date Completed: January 19, 2001 5.1 ft. 01/19/01 1230 HRS	Data Sta	pto d.		lonus	m, 46	2004		100	-		Water Level: 7 7 5 ft 01/16/01 1245 UDS
Logged By: K. Gronseth I Drill Ria: CME-55	Date Cor	mplete	ed:	Janua	ary 19	, 2001					5.1 ft. 01/19/01 1230 HRS
Total Depth: 88 feet Drilling Method: 4" Auger & HQ Coring				<del></del>		n					

FED. ROAD	STATE	FED. AID	FISCAL	SHEET	TOTAL
DIST. NO.		PROJ. NO.	YEAR	NO.	SHEETS
HAWAII	HAW.	ER-12(4)	2003		76



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4-30-04

SIGNATURE EXPIRATION DATE OF THE LICENSE GEOLABS, INC.

DATE

REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BORING LOGS

KAMEHAMEHA V HIGHWAY
EMERGENCY REPLACEMENT OF KAWAIKAPU BRIDGE
FEDERAL AID PROJECT NO. ER-12(4)
Scale: As Noted Date: Nov. 25, 2002

SHEET No. 63

OF 6 SHEETS

		GI	ΕΟΙ	_AE	BS, IN	IC.				EMERGENCY REPLACEMENT  OF KAWAIKABI I RRIDGE  Log of Boring
		Geot	echr	nical	Engine	eering		DIS	TRIC	OF KAWAIKAPU BRIDGE T OF MOLOKAI, ISLAND OF MOLOKAI 2
Other Tests	ture tent (%)	Dry Unit Weight (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	cet Pen.	Depth (feet)			Approximate Ground Surface Elevation (feet MSL): 7.7 *
Othe	Con	Dry Weig	Core	RQL	Pen Resi (blov	Pocket (tsf)	Dep	Sample Graphic	nscs	Description
	21	97	,		24		. •		_ML_ SM	5-inch ASPHALT CONCRETE Brown SANDY SILT with gravel (fill)
	31				7				MH	Dark brown SILTY SAND with gravel, medium dense, damp (fill)
	48	69	· .		4	<0.5	<b>5</b>		МН	Brown CLAYEY SILT with some sand and gravel, medium stiff, damp to moist (fill)  Dark brown CLAYEY SILT with some sand and
	18				13		10	0000	GM	gravel, soft, wet (alluvium)  Dark brown SILTY GRAVEL with some sand, loose to medium dense (alluvium)
					10		15			
	57				4	<0.5	20	- 000	MH	Dark brown SANDY SILT with some shell fragments, soft (alluvium)
					7		25			
	72				3	<0.5	30		МН	Dark brown SANDY SILT with some shell fragments, very soft (alluvium)
2	57				2		35			
	63				2		40		MH	Dark gray CLAYEY SILT with some sand and organic material, very soft (lagoonal)
	58				3		45			grades with shell fragments
							50			
Date Start			·		, 2001		<u> </u>			Water Level:   6 ft. 01/17/01 0925 HRS  6 8 ft. 01/17/01 1730 HPS
Date Com _ogged By			Janua K. Gro		<u>′, 2001      </u> h					6.8 ft. 01/17/01 1739 HRS  Drill Rig: CME-55
	th:		87 fee							Drilling Method: 4" Auger & HQ Coring

					3S, IN					OF KAWAIKAPU BRIDGE
	<u></u>	Jeoi			Engine			DIS	TRIC	T OF MOLOKAI, ISLAND OF MOLOKAI 2
Other Tests	Moisture Content (%)	Dry Unit Weight (pcf	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample Graphic	USCS	(Continued from previous plate)
ਰੈ V=0.25	<u>မို ၀ိ</u> 64	59 59	Col		17 17	8.0 (tsf	De	Sal	S MH	Description  Dark gray CLAYEY SILT with some sand and shell fragments and traces of organic material, stiff (lagoonal)
	81				4		55	- 00	GM	
	37	81			13		60		MH	fragments and traces of organic material stiff
	37				11		65	-		grades with more silt
ΓV=0.3	65	65			13	<0.5	70		MH	Dark gray CLAYEY SILT with some sand, medium stiff to stiff (lagoonal)
			100 30				75		X	Gray BASALT BOULDERS AND COBBLES with gravel, moderately weathered, hard to very hard (alluvium/colluvium)
			50				80		X X X	
	,						85		X	Roring terminated at 87 foot
							90	-		Boring terminated at 87 feet
							95	-		
							100	-		
Date Star	nplete	ed:	Janua	ry 17	7, 2001 7, 2001					Water Level:   6 ft. 01/17/01 0925 HRS  6.8 ft. 01/17/01 1739 HRS  CME 55
Logged B	By: oth:		K. Gro 87 fee		n	•				Drill Rig: CME-55  Drilling Method: 4" Auger & HQ Coring

FED. ROAD	STATE	FED. AID	FISCAL	SHEET	TOTAL
DIST. NO.		PROJ. NO.	YEAR	NO.	SHEETS
HAWAII	HAW.	ER-12(4)	2003	174	76



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DATE

REVISION

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

BORING LOGS

KAMEHAMEHA V HIGHWAY
EMERGENCY REPLACEMENT OF KAWAIKAPU BRIDGE
FEDERAL AID PROJECT NO. ER-12(4) Date: Nov. 25, 2002 Scale: As Noted

OF 6 SHEETS SHEET No. G4

		G	EOI	_AE	3S, IN	IC.				EMERGENCY REPLACEMENT Log of Boring
			techr	nical	Engine			DIS	STRIC	OF KAWAIKAPU BRIDGE T OF MOLOKAI, ISLAND OF MOLOKAI  3
Other Tests	Moisture Content (%)	1 ()	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	SSS	Approximate Ground Surface Elevation (feet MSL): 6 *
Ö	<u>≌ 8</u>	ڇڇ	Co	RC	8 원호 17	Po (ts)	De	Sa	SM	Description Brown SILTY SAND with gravel, medium dense, damp (fill)
	36				3				MH SM	Tannish brown SANDY SILT with some clay, very soft, wet (fill)
	32	79			3	1.0	<sup>7</sup> 5		MH SP- SM	Tan SILTY SAND, very loose, wet (fill/alluvium) Brown CLAYEY SILT with some sand, soft (fill/alluvium) Tan SAND with some silt, loose (alluvium)
	41				18		10	- X	GM	Dork grov SILTV CDAVEL with some conditions
								- 0000	GIVI	Dark gray SILTY GRAVEL with some sand, loose (lagoonal)
,	28				7		15	- 0000000000000000000000000000000000000		
√=0.15	97	44			2	<0.5	20	- 00000	MH	Dark gray CLAYEY SILT with some sand and traces of gravel and organic material, very soft (lagoonal)
	95				2		25			
TV=0.1	61	61			3	8.0	30			grades with some shell fragments
	74	-			2		35	-		grades with traces of coralline gravel
					10		40		GM	Whitish brown SILTY CORALLINE GRAVEL with some sand, loose (alluvium)
							45			
							50			
Date Star	nplet	ed:	Janua	ary 20	), 2001 ), 2001					Water Level:   4.8 ft. 01/19/01 1430 HRS  4 ft. 01/20/01 1100 HRS  CME 55
Logged E Total Dep		<del></del>	K. Gr 83.5 f 4630-	eet	[]					Drill Rig: CME-55  Drilling Method: 4" Auger & HQ Coring  Driving Energy: 140 lb. wt., 30 in. drop

					3S, IN Engine			DIG		EMERGENCY REPLACEMENT OF KAWAIKAPU BRIDGE T OF MOLOKAL ISLAND OF MOLOKAL
Other Tests	Moisture Content (%)		у (%)		Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample Graphic G		(Continued from previous plate)
TO S	ဋိပိ 48	Dry	Col	RC	92 4 4	Po (tsf	De	Sa So Gr	Sn GM	Description
							55	-	MH	Brown CLAYEY SILT with some sand, soft (alluvium)
	42	49			24		60		GM	Dark brown and grayish white SILTY CORALLINE GRAVEL, medium dense (lagoonal)
							65			
			89		50/.5'		70			Gray BASALT BOULDERS AND COBBLES with gravel, moderately weathered, hard to very hard (alluvium/colluvium)
		e	40				75			
			50				80			
							85			Boring terminated at 83.5 feet
							90			
							95			
							100-	-		
Date Start Date Com	plete	ed:	Janua	ary 20	), 2001 ), 2001					Water Level:   4.8 ft. 01/19/01 1430 HRS  4 ft. 01/20/01 1100 HRS
Logged By Total Dept			K. Gre 83.5 f		<u>h</u>					Drill Rig: CME-55 Drilling Method: 4" Auger & HQ Coring
Work Orde			4630-							Driving Energy: 140 lb. wt., 30 in. drop

FED. ROAD	STATE	FED. AID	FISCAL	SHEET	TOTAL
DIST. NO.		PROJ. NO.	YEAR	NO.	SHEETS
HAWAII	HAW.	ER-12(4)	2003	15	76



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DATE

REVISION STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

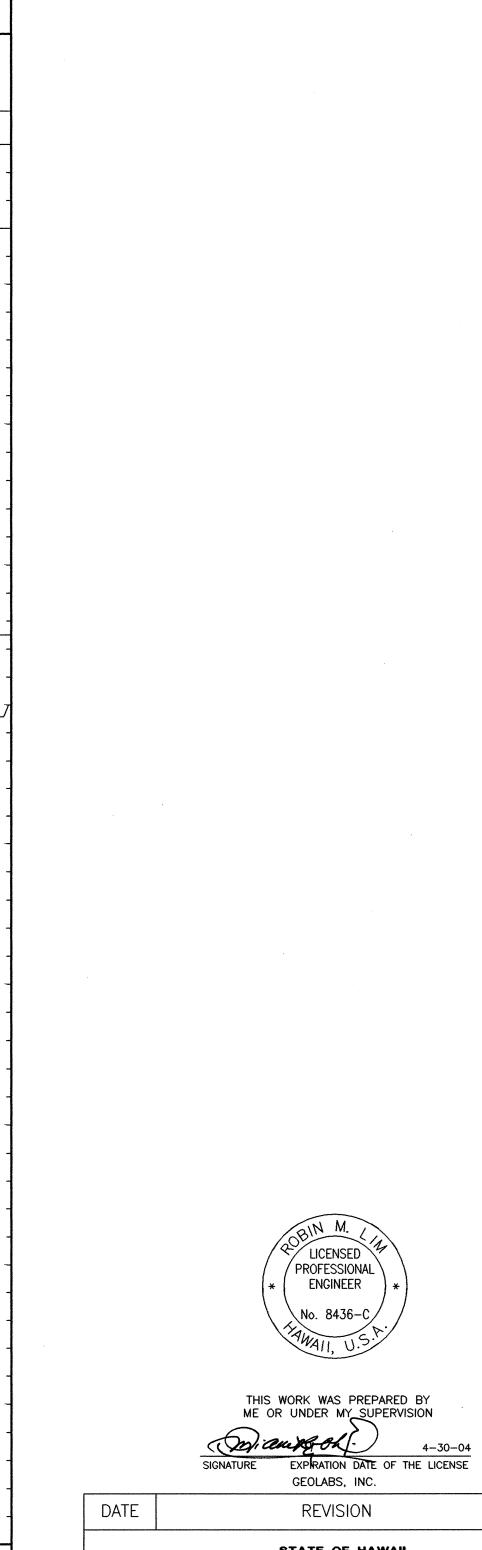
BORING LOGS

KAMEHAMEHA V HIGHWAY
EMERGENCY REPLACEMENT OF KAWAIKAPU BRIDGE Scale: As Noted Date: Nov. 25, 2002

SHEET No. 65 OF 6 SHEETS

		Geot	echr	nical	3S, IN Engine			DIS		EMERGENCY REPLACEMENT OF KAWAIKAPU BRIDGE T OF MOLOKAI, ISLAND OF MOLOKAI  4			
Other Tests	Moisture Content (%)	Dry Unit Weight (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	USCS	Approximate Ground Surface Elevation (feet MSL): 6 *  Description		Other Tests	4 Moisture Content (%)
	26	68	OE	<b>- L</b>	29	2.3		X	MH	t -	-		47
	24				7	Z	Z <b>_</b>			grades to medium stiff	1		
	21	103			14		5	000000000000000000000000000000000000000	GM	Brown SILTY GRAVEL with sand, loose to medium dense (alluvium)	·		
	12				27		10			grades to medium dense			64
					8		15		SM	Dark gray SILTY SAND with shell and wood fragments, loose to medium dense (lagoonal)			45
	65				8			X		magments, loose to medium dense (lagoonal)			45
TV=0.15	75	52			6	<0.5	20-	- <b>X</b>	МН	Dark gray SANDY SILT with some clay, shell and wood fragments, soft (lagoonal)	t		
	77				7	8.0	25 <sup>-</sup>			grades with more sand and without wood fragments			
					2		30	- -       			-		
	71				2	0.5							
	68				Push/ 1.5'		35				-		
TV=0.35	62	60			4	1.3	40		MH	Dark gray CLAYEY SILT with some sand, very s to soft (lagoonal)	oft		
							45	-					
							50·		SM		GEOLARS GDT 3/8/01		
Date Sta	nplet	ed:	Janua	ary 20	), 2001 ), 2001		JU.			Water Level:   4.5 ft. 01/20/01 1230 HRS  4.8 ft. 01/20/01 1600 HRS	T 4680-00 GP.	Date St	omplet
Logged E Total De			K. Gro 70 fee		h					Drill Rig: CME-55  Drilling Method: 4" Auger  Driving Energy: 140 lb. wt., 30 in. drop		Logged Total De	

								<del>- 1</del>				log of 1	FED. ROAD DIST. NO.	STATE
						BS, IN					EMERGENCY REPLACEMENT OF KAWAIKAPU BRIDGE	Log of Boring	HAWAII	HAW.
Q	<u>ა</u>	- 1				Engine		<u>‡</u>	DIS	TRIC	T OF MOLOKAI, ISLAND OF MOLOKAI	4		
F.	Other Lests	Moisture Content (%)	hit pe pe	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Se Pic	(0	(Continued from previous plate)			
<del>,</del>	Jine	/loist	ory L Veig	core	Rad	ene Resis blow	ock (sf)	)eptl	Sample Graphic	nscs	Description			
	<u></u>	47	□>	012		4	П.	<u> </u>		SM		vel,		
									-	SM	Dark gray SILTY SAND with traces of gra loose (alluvium)	vel,		
								55	-			-		
·		64				5		60						
									-					
		45				13		65						
								70			Gray BASALT BOULDERS AND COBBLI gravel, moderately weathered, hard to ve (alluvium/colluvium)  Boring terminated at 70 feet			
								75	-					
								80						
								85	-					
								90						
								95						SIGNAT
								00		September 200 per		1	DATE	
Dat		mplete	ed:	Janua	ary 20	), 2001 ), 2001	1	00			Water Level:   4.5 ft. 01/20/01 1230 HRS  4.8 ft. 01/20/01 1600 HRS			DEPART
	gged tal De			K. Gr 70 fee		in				***************************************	Drill Rig: CME-55 Drilling Method: 4" Auger	4		
	ork Or			4630-	~						Driving Energy: 140 lb. wt., 30 in. drop			



FED. AID PROJ. NO.

FISCAL SHEET TOTAL SHEETS

76

2003



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

BORING LOGS

<u>KAMEHAMEHA V HIGHWAY</u> <u>EMERGENCY REPLACEMENT OF KAWAIKAPU BRIDGE</u> Scale: As Noted Date: Nov. 25, 2002

SHEET No. 66

OF 6 SHEETS

