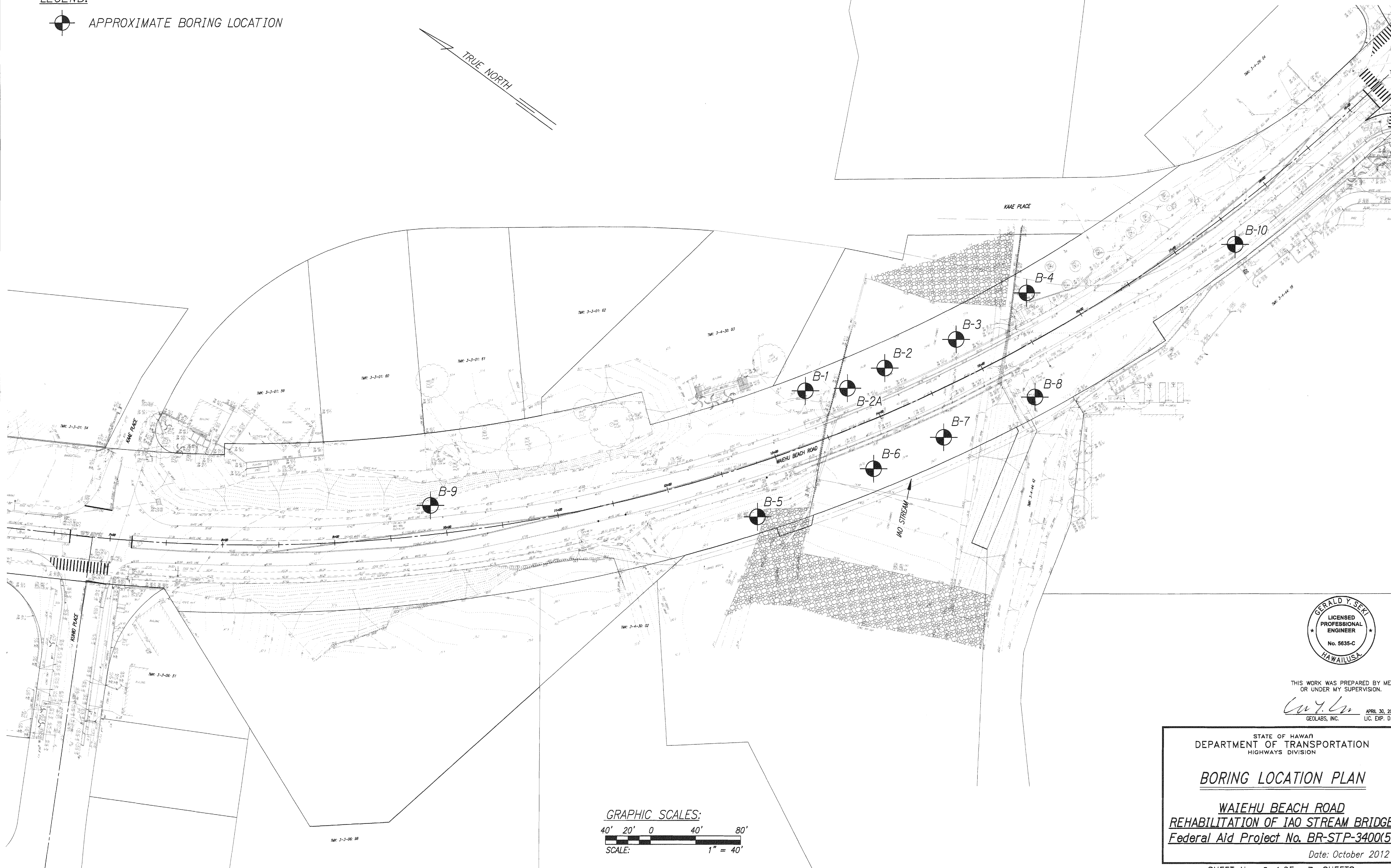
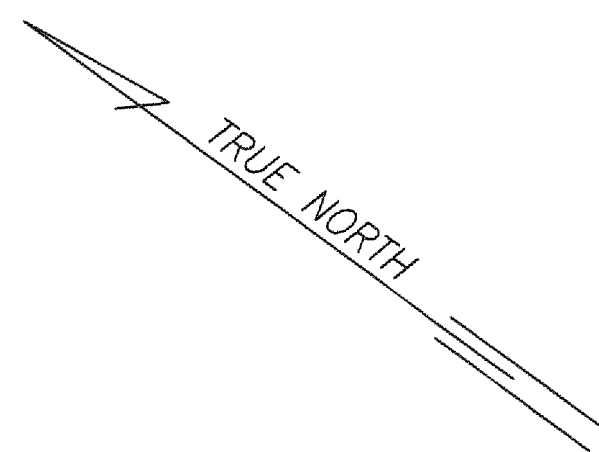


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-STP-3400(5)	2012	48	108

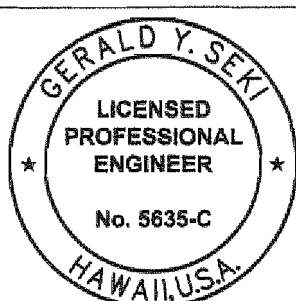
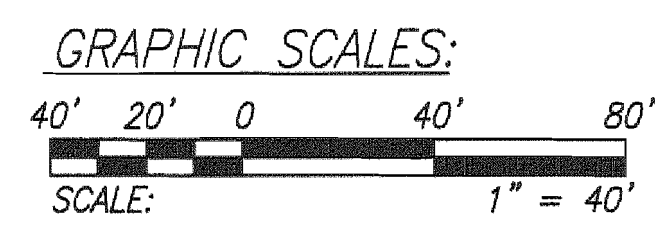
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 APPROXIMATE BORING LOCATION



ORIGINAL PLAN	DATE
NOTED BY	
DESIGNED BY	
CHECKED BY	
NO.	

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OR UNDER MY SUPERVISION.
Gerald Y. Seki
GEO LABS, INC. APRIL 30, 2014
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BORING LOCATION PLAN

WAIEHU BEACH ROAD REHABILITATION OF IAO STREAM BRIDGE

Federal Aid Project No. BR-STP-3400(5)

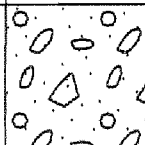
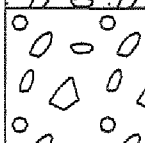
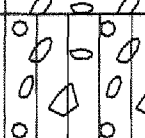

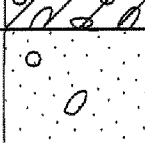
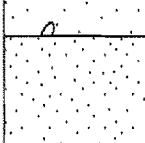
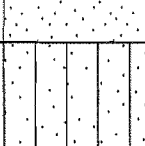
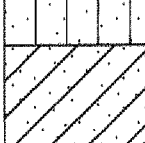
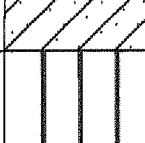
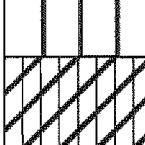
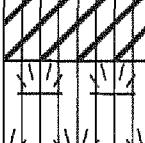
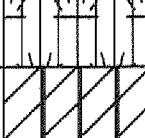
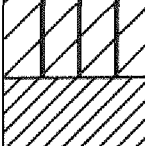
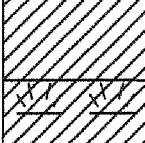
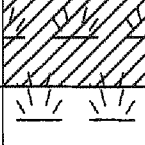
Date: October 2012

SHEET No. G-1 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-STP-3400(5)	2012	49	108

Boring Log Legend

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

MAJOR DIVISIONS			USCS		TYPICAL DESCRIPTIONS
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		LESS THAN 5% FINES		GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
		MORE THAN 12% FINES		GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SANDS	CLEAN SANDS		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		LESS THAN 5% FINES		SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
SANDS WITH FINES			SM	SILTY SANDS, SAND-SILT MIXTURES	
MORE THAN 12% FINES			SC	CLAYEY SANDS, SAND-CLAY MIXTURES	
FINE-GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				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
	SILTS AND CLAYS	LIQUID LIMIT 50 OR MORE		MH	INORGANIC SILT, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				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



GRAB SAMPLE



CORE SAMPLE

LL

LIQUID LIMIT

PI

PLASTICITY INDEX

TV

TORVANE SHEAR (tsf)

PEN

POCKET PENETROMETER (tsf)

UC

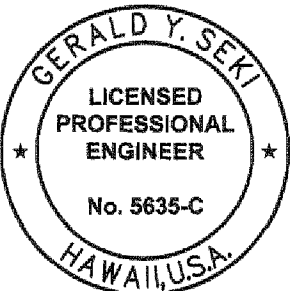
UNCONFINED COMPRESSION (psi)

W

WATER LEVEL OBSERVED IN BORING

GEOTECHNICAL NOTES

1. A geotechnical engineering report entitled "Geotechnical Engineering Exploration, Waiehu Beach Road (Route 3400), Rehabilitation of Iao Stream Bridge, Wailuku, Maui, Hawaii" dated May 29, 2012 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.
2. For boring locations, see Sheet G-1.
3. 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.
4. 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.
5. 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.



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Gerald Y. Seki
GEO LABS, INC. APR 30, 2014
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION




BORING LOGS LEGEND & NOTES


WAIEHU BEACH ROAD
REHABILITATION OF IAO STREAM BRIDGE
Federal Aid Project No. BR-STP-3400(5)

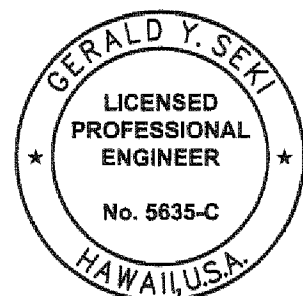
Date: October 2012

SHEET No. G-2 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-STP-3400(5)	2012	50	108

		GEOLABS, INC. Geotechnical Engineering						WAIEHU BEACH ROAD (ROUTE 3400) REHABILITATION OF IAO STREAM BRIDGE WAILUKU, MAUI, HAWAII				Log of Boring 1	
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 Elevation (feet MSL): 39.5 *			
										Description			
Sieve #200 = 3.3%	2	94			7		5		SP	Tan SAND (CORALLINE) with traces of silt and fine gravel, loose, dry (dune sand) grades to medium dense cobbles (basaltic) encountered between 4.0 to 4.5 feet grades to weakly cemented			
	15		6		12	10							
LL=37 PI=13	29				15		15		CL	Dark brown SANDY CLAY, stiff, moist (alluvium)			
	1		17		12	20					Gray COBBLES AND BOULDERS (BASALTIC), dense (alluvium)		
			28		10/0" Ref.	25							
			60			30							
			50			35							
			43			40							
				33			45		GM	Brown SILTY GRAVEL (BASALTIC) with sand and some cobbles, medium dense (alluvium)			
	49				20		50						
			67				55						
			45				60			Boring terminated at 58.5 feet			
	45				27		65			* Elevations estimated from Topographic Survey Plan transmitted by Wilson Okamoto Corporation on January 31, 2008.			
							70						
							75						
Date Started: August 8, 2008									Water Level: \varnothing Not Measured, Hole Caved-In				
Date Completed: August 8, 2008													
Logged By: E. Shinsato									Drill Rig: MOBILE B-53				
Total Depth: 58.5 feet									Drilling Method: 4" Auger, 4" Casing & HQ Coring				
Work Order: 5741-00									Driving Energy: 140 lb. wt., 30 in. drop				

GEOLABS, INC.		WAIEHU BEACH ROAD (ROUTE 3400) REHABILITATION OF IAO STREAM BRIDGE WAILUKU, MAUI, HAWAII							Log of Boring 2			
Geotechnical Engineering												
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 Elevation (feet MSL): 19 *		
										Description		
UC=16590	24	102	50		23/6" Ref.		5		GP	11-inch CONCRETE		
			50						SM	Gray SANDY GRAVEL (BASALTIC) with sand, medium dense, dry (fill)		
			60							Brown SILTY SAND with traces of gravel (basaltic), medium dense, moist (fill)		
			57							Gray COBBLES (BASALTIC) with gravel, very dense (alluvium)		
			27							grades with some brown silt		
	47		31		31/6" +10/0" Ref.		30			SM	Reddish brown SILTY SAND (BASALTIC) with gravel, dense (alluvium)	
	42		24		31		35				grades with some highly weathered cobbles (basaltic)	
	49		24		28		40				grades to medium dense to dense	
	51		0		21		45			GW	Brown SANDY GRAVEL (BASALTIC) with some silt and highly weathered cobbles, medium dense to dense (alluvium)	
	49		83		29		50				Gray COBBLES with some gravel and sand, moderately weathered, very dense (alluvium)	
		57				55			Boring terminated at 57 feet			
							60					
							65					
							70					
							75					
Date Started: August 5, 2008							Water Level: \varnothing Not Measured, Hole Caved-In					
Date Completed: August 5, 2008												
Logged By: E. Shinsato							Drill Rig: MOBILE B-53					
Total Depth: 57 feet							Drilling Method: 4" Auger & HQ Coring					
Work Order: 5741-00							Driving Energy: 140 lb. wt., 30 in. drop					



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Gerald Y. Seki
GEO LABS, INC. APRIL 30, 2014
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BORING LOGS - 1

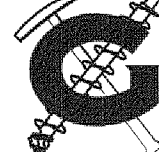
**WAIEHU BEACH ROAD
REHABILITATION OF IAO STREAM BRIDGE
Federal Aid Project No. BR-STP-3400(5)**

Date: October 2012

SHEET No. G-3 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-STP-3400(5)	2012	51	108

GEOLABS, INC. Geotechnical Engineering		WAIIEHU BEACH ROAD (ROUTE 3400) REHABILITATION OF IAO STREAM BRIDGE WAILUKU, MAUI, HAWAII					Log of Boring 2A				
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 Elevation (feet MSL): 19 *	Description
	5		83		10/1" Ref.		5		SM		10-inch CONCRETE
			50		50/0" Ref.						Brown SILTY SAND with some gravel (basaltic), dense, damp (fill)
							10				Gray BOULDERS AND COBBLES (BASALTIC), very dense (alluvium)
			40				15				
					50/0" Ref.		20				Gray BOULDERS AND COBBLES (BASALTIC) with some sand and silt, dense (alluvium)
			50				25		SM		Reddish brown SILTY SAND with some gravel and cobbles, medium dense (alluvium)
	50				24		30				
			86				35				Boring terminated at 32 feet
							40				Water Level Readings:
							45				6.0 ft. 01/26/2009 1215 HRS
							50				5.6 ft. 01/28/2009 1004 HRS
							55				4.9 ft. 01/29/2009 1217 HRS
							60				4.8 ft. 01/30/2009 1515 HRS
							65				6.0 ft. 02/2/2009 1514 HRS
							70				
							75				
Date Started: January 26, 2009								Water Level: z See End of Log			
Date Completed: January 26, 2009											
Logged By: D. Finch								Drill Rig: MOBILE B-53			
Total Depth: 32 feet								Drilling Method: 4" Auger & HQ Coring			
Work Order: 5741-00								Driving Energy: 140 lb. wt., 30 in. drop			

		GEOLABS, INC. Geotechnical Engineering						WAIIEHU BEACH ROAD (ROUTE 3400) REHABILITATION OF IAO STREAM BRIDGE WAILUKU, MAUI, 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 Elevation (feet MSL): 18 *			
										Description			
	6	110			26/Ref.				GP	10-inch CONCRETE			
	9		67		35/6" +32/3" Ref.		5		GM	Gray SANDY GRAVEL (BASALTIC) (fill)			
										Brownish gray SILTY GRAVEL (BASALTIC), dense to very dense, dry (fill)			
										grades with cobbles			
			25				10			Gray BOULDERS AND COBBLES (BASALTIC), very dense (alluvium)			
							15						
			23				20						
							25						
			3				25		GW-GM	Brown SILTY GRAVEL with sand, dense (alluvium)			
	43				36		30						
	50		38				35						
	47		83		39		40						
	47		57		25		45						
	47		57		38		50						
	43		24		46		55						
	47		57		33		60						
	46				37		65						
							70						
							75						
Date Started: August 7, 2008										Water Level: ∇ Not Measured, Hole Caved-In			
Date Completed: August 7, 2008													
Logged By: E. Shinsato										Drill Rig: MOBILE B-53			
Total Depth: 58.5 feet										Drilling Method: 4" Auger & HQ Coring			
Work Order: 5741-00										Driving Energy: 140 lb. wt., 30 in. drop			



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OR UNDER MY SUPERVISION.

Gerald Y. Seki
GEOLOGICAL ENGINEER
APRIL 30, 2014
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BORING LOGS - 2



**WAIIEHU BEACH ROAD
REHABILITATION OF IAO STREAM BRIDGE
Federal Aid Project No. BR-STP-3400(5)**

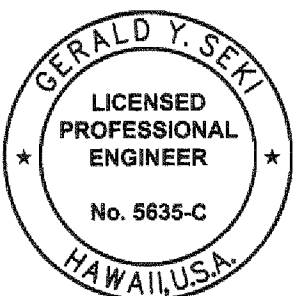
Date: October 2012

SHEET No. G-4 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-STP-3400(5)	2012	52	108

GEOLABS, INC. Geotechnical Engineering		WAIIEHU BEACH ROAD (ROUTE 3400) REHABILITATION OF IAO STREAM BRIDGE WAILUKU, MAUI, HAWAII					Log of Boring 4				
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 Elevation (feet MSL): 31 *	Description
Sieve #200 = 14.9%	6		0		30/3" Ref.		5		SM		Tan SILTY FINE SAND (CORALLINE) with gravel, loose, dry (fill)
	11		36		23		10		GM		Brown SILTY GRAVEL (BASALTIC) with some cobbles, very dense, damp (fill)
			28				15				grades to medium dense
Sieve #200 = 23.9%	44		24		29		20				Gray BOULDERS AND COBBLES (BASALTIC) with some brown silt, dense (alluvium)
			47		10/0" Ref.		25				
			35				30		SM		Brown SILTY SAND (BASALTIC) with some cobbles and gravel, medium dense to dense (alluvium)
	44		29		30		35				
	44		29		39		40				
	34		50		32		45				
	42		79		31		50				
	46		74		37		55				
	47						60				Boring terminated at 58.5 feet
							65				
						70					
						75					
Date Started: August 8, 2008							Water Level: \pm Not Measured, Hole Caved-In				
Date Completed: August 8, 2008											
Logged By: E. Shinsato							Drill Rig: MOBILE B-53				
Total Depth: 58.5 feet							Drilling Method: 4" Auger & HQ Coring				
Work Order: 5741-00							Driving Energy: 140 lb. wt., 30 in. drop				

		GEOLABS, INC. Geotechnical Engineering						WAIIEHU BEACH ROAD (ROUTE 3400) REHABILITATION OF IAO STREAM BRIDGE WAILUKU, MAUI, HAWAII				Log of Boring 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 Elevation (feet MSL): 41 *			
										Description			
UC=6010	8	112			49		5		GP	Tan SANDY GRAVEL (BASALTIC) with some silt, medium dense, dry (fill)			
	1				10		5		SP	Tan SAND (CORALLINE), loose, dry (fill)			
	5				15		10			grades to medium dense			
	11		100		53		15		GM	Brown SILTY GRAVEL (BASALTIC) with some sand (coralline), medium dense to dense, moist (fill)			
			18				20			Gray BOULDERS (BASALTIC), very dense (alluvium)			
			5		10/0"		25		GW-GM	grades with some brown silt			
							30		GM	grades with some cobbles (basaltic)			
							35			Brown SILTY GRAVEL (BASALTIC) with some sub-rounded cobbles and sand, medium dense to dense (alluvium)			
							40			grades to very dense			
							45			Gray BOULDERS AND COBBLES (BASALTIC), very dense (alluvium)			
Sieve #200 = 10.6%	11		60		76		50		GW-GM	Brown SILTY GRAVEL (BASALTIC) with sand and some clay seams, medium dense (alluvium)			
			70				55			grades with some cobbles (basaltic)			
			17				60			grades to dense			
	22		52		23		65			grades to medium dense to dense			
	37		67		36		70			grades to dense			
			28				75			Boring terminated at 62 feet			
	23		62		50								
			50		34								
Date Started: August 6, 2008										Water Level: \pm Not Measured, Hole Caved-In			
Date Completed: August 6, 2008													
Logged By: E. Shinsato										Drill Rig: MOBILE B-53			
Total Depth: 62 feet										Drilling Method: 4" Auger, 4" Casing & HQ Coring			
Work Order: 5741-00										Driving Energy: 140 lb. wt., 30 in. drop			



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OR UNDER MY SUPERVISION.

Gerald Y. Seki
GEOLABS, INC. APRIL 30, 2014
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BORING LOGS - 3

**WAIIEHU BEACH ROAD
REHABILITATION OF IAO STREAM BRIDGE
Federal Aid Project No. BR-STP-3400(5)**

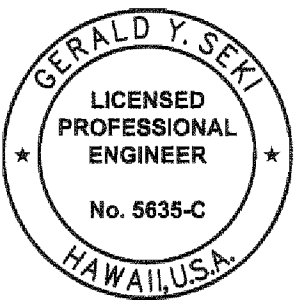
Date: October 2012

SHEET No. G-5 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-STP-3400(5)	2012	53	108

GEOLABS, INC. Geotechnical Engineering										WAIEHU BEACH ROAD (ROUTE 3400) REHABILITATION OF IAO STREAM BRIDGE WAILUKU, MAUI, HAWAII		Log of Boring 6
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 Elevation (feet MSL): 19.5 *		
										Description		
UC= 23410	16	107			10/6" +10/1" Ref.		5		GP	10-inch CONCRETE		
			78						SM	Gray SANDY GRAVEL (BASALTIC), dense, dry (fill)		
			58				10			Brown SILTY SAND with some gravel (basaltic), medium dense, moist (fill)		
			50				15			Gray BOULDERS (BASALTIC) with some cobbles and sub-rounded gravel, very dense (alluvium)		
Sieve #200 = 23.4%	13	20			35/6" +20/1" Ref.		20			grades with some brown silt		
	43	24			42		25		SM	Reddish brown SILTY SAND (BASALTIC) with some sub-rounded gravel, dense to very dense, very moist (alluvium)		
	44	14			28		30			grades with some cobbles (basaltic) at 24 feet		
	42	33			45		35			Brownish gray COBBLES (BASALTIC) with some sub-rounded gravel, moderately weathered, medium dense to dense (alluvium)		
	44	43			25		40			grades with some reddish brown silty sand, highly weathered		
		24			48		50					
	40	36			77		55			grades to very dense		
							60			Boring terminated at 62 feet		
										Boring terminated at 62 feet		
Date Started: August 5, 2008										Water Level: \varnothing Not Measured, Hole Caved-In		
Date Completed: August 5, 2008												
Logged By: E. Shinsato										Drill Rig: MOBILE B-53		
Total Depth: 62 feet										Drilling Method: 4" Auger & HQ Coring		
Work Order: 5741-00										Driving Energy: 140 lb. wt., 30 in. drop		

GEOLABS, INC. Geotechnical Engineering										WAIEHU BEACH ROAD (ROUTE 3400) REHABILITATION OF IAO STREAM BRIDGE WAILUKU, MAUI, HAWAII		Log of Boring 7
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 Elevation (feet MSL): 19 *		
										Description		
Direct Shear	9	124			41		5		GP	10-inch CONCRETE		
	23				18				SP	Grayish brown SANDY GRAVEL with traces of silt, medium dense, damp (fill)		
	35	86			15/1" Ref.		10		SM	Tan fine SAND (CORALLINE) with traces of gravel (basaltic), medium dense, damp (fill)		
			75				15			Brown SILTY SAND (BASALTIC) with some moderately weathered sub-rounded gravel, medium dense, moist (alluvium)		
UC= 17450							20			Gray COBBLES AND BOULDERS (BASALTIC) with some sub-rounded gravel, very dense (alluvium)		
				63			25					
			47		28		30			Brownish gray COBBLES (BASALTIC) with some rounded gravel and traces of clay, very dense (alluvium)		
					37		35		GW	Grayish brown with dark gray seams SILTY GRAVEL (BASALTIC) with some cobbles, severely fractured, moderately to highly weathered, very dense (alluvium)		
							40					
					50		45					
					42		50					
					73		55					
							60			Boring terminated at 57 feet		
					40		65					
							70					
							75					
Date Started: August 4, 2008										Water Level: \varnothing Not Measured, Hole Caved-In		
Date Completed: August 4, 2008												
Logged By: E. Shinsato										Drill Rig: MOBILE B-53		
Total Depth: 57 feet										Drilling Method: 4" Auger & HQ Coring		
Work Order: 5741-00										Driving Energy: 140 lb. wt., 30 in. drop		



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.

Gerald Y. Seki
APRIL 30, 2014
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BORING LOGS - 4


**WAIEHU BEACH ROAD
REHABILITATION OF IAO STREAM BRIDGE
Federal Aid Project No. BR-STP-3400(5)**

Date: October 2012

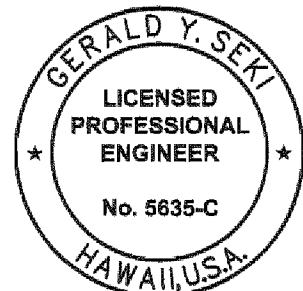
SHEET No. 6-6 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-STP-3400(5)	2012	54	108

GEOLABS, INC.		WAIIEHU BEACH ROAD (ROUTE 3400) REHABILITATION OF IAO STREAM BRIDGE WAILUKU, MAUI, HAWAII										Log of Boring 8	
Geotechnical Engineering													
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 Elevation (feet MSL): 38.5 *			
										Description			
	6	113			31				GP	Grayish brown SANDY GRAVEL (BASALTIC), medium dense, damp (fill)			
	8				25				SM	Tan SILTY SAND, medium dense, damp (fill)			
	3	106			25		5		SP	Tan fine SAND (CORALLINE), medium dense, damp (fill) grades with some brown silt			
	15		50		19		10		SM	Brown SILTY SAND with gravel, medium dense, moist (alluvium)			
			30				15			Gray BOULDER AND COBBLES (BASALTIC), very dense (alluvium)			
							20						
							25						
							30						
							35						
							40						
			67	45	10/0" Ref.		45						
			27	0			50						
							55						
	28				30		60		GW	Grayish brown SILTY GRAVEL (BASALTIC) with cobbles, sand, and clay, medium dense (alluvium)			
	41		39		30/3" Ref.		65						
	42		76		20		70						
							75			Boring terminated at 62 feet			
Date Started: August 6, 2008										Water Level: \varnothing Not Measured, Hole Caved-In			
Date Completed: August 7, 2008													
Logged By: E. Shinsato										Drill Rig: MOBILE B-53			
Total Depth: 62 feet										Drilling Method: 4" Auger, 4" Casing & HQ Coring			
Work Order: 5741-00										Driving Energy: 140 lb. wt., 30 in. drop			

		GEOLABS, INC. Geotechnical Engineering						WAIIEHU BEACH ROAD (ROUTE 3400) REHABILITATION OF IAO STREAM BRIDGE WAILUKU, MAUI, HAWAII				Log of Boring 9	
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 Elevation (feet MSL): 44 *		
											Description		
	3	100			63					SM	Brown SILTY SAND with some gravel (basaltic) (fill)		
	3				70					SP	Tan weakly cemented SAND (CORALLINE), dense, dry (dune sand) grades to very dense		
	2	109			85		5						
	3				89		10						
	3				52		15						
	3				88		20						
												Boring terminated at 21.5 feet	
Date Started: August 9, 2008												Water Level: \varnothing Not Encountered	
Date Completed: August 9, 2008													
Logged By: E. Shinsato												Drill Rig: MOBILE B-53	
Total Depth: 21.5 feet												Drilling Method: 4" Auger, 6" Hollow-Stem Auger	
Work Order: 5741-00												Driving Energy: 140 lb. wt., 30 in. drop	

GEOLABS, INC. Geotechnical Engineering							WAIIEHU BEACH ROAD (ROUTE 3400) REHABILITATION OF IAO STREAM BRIDGE WAILUKU, MAUI, HAWAII				Log of Boring 10	
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 Elevation (feet MSL): 33.5 *	
											Description	
	6	115			40					GP	11-inch ASPHALTIC CONCRETE	
	5				27		5			GM	Brownish gray SANDY GRAVEL (BASALTIC), very dense, dry (fill)	
										SP	Brown SILTY GRAVEL (BASALTIC) with some cobbles and sand, medium dense to dense, damp (fill)	
					10/0" Ref.		10				Brownish tan weakly cemented SAND (CORALLINE) with traces of silt, medium dense, damp (dune sand)	
					10/0" Ref.		15				Brownish gray BOULDERS AND COBBLES (BASALTIC) with some sub-rounded gravel, very dense	
							20				Boring terminated at 15 feet	
							25					
Date Started: August 9, 2008							Water Level: \varnothing Not Encountered					
Date Completed: August 9, 2008												
Logged By: E. Shinsato							Drill Rig: MOBILE B-53					
Total Depth: 15 feet							Drilling Method: 4" Auger					
Work Order: 5741-00							Driving Energy: 140 lb. wt., 30 in. drop					



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.

APR 30, 2014
LUC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BORING LOGS - 5

**WAIIEHU BEACH ROAD
REHABILITATION OF IAO STREAM BRIDGE
Federal Aid Project No. BR-STP-3400(5)**

Date: October 2012

SHEET No. G-7 OF 7 SHEETS