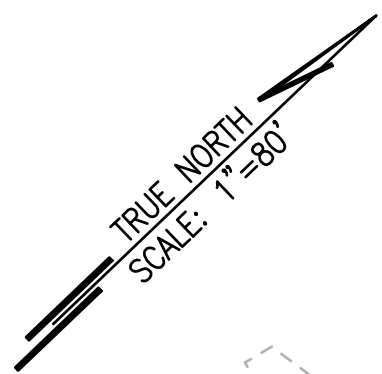
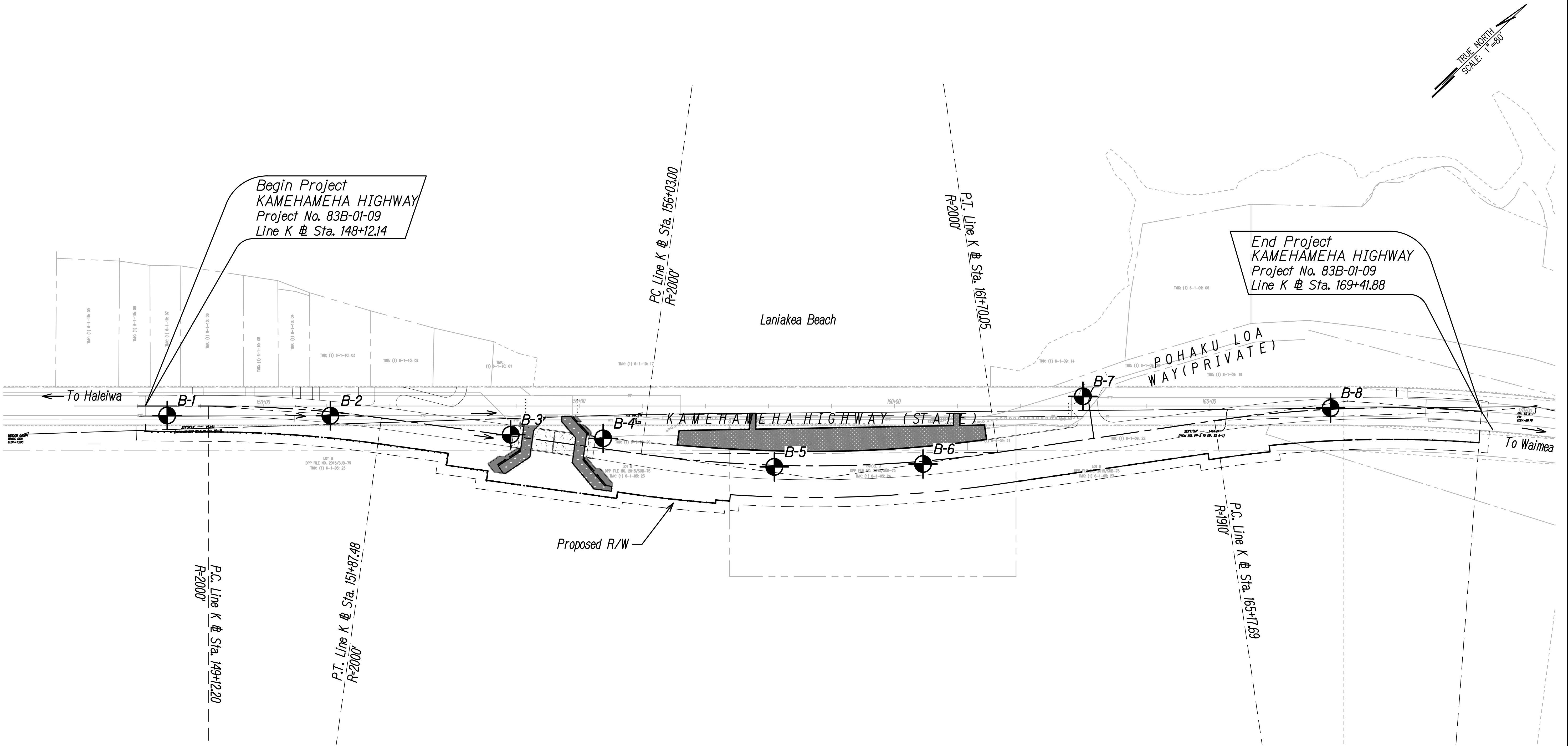


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83B-01-09	2023	17	228

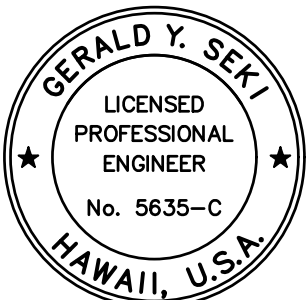
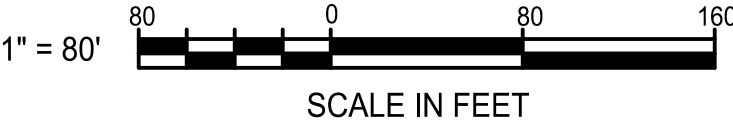


ORIGINAL PLAN	DATE
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DESIGNED BY	
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NO.	

LEGEND:

 Approximate Boring Location

GRAPHIC SCALE



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OF THE LICENSE


STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

BORING LOCATION PLAN

KAMEHAMEHA HIGHWAY DRAINAGE AND SAFETY IMPROVEMENTS  
Vicinity of Laniakea Beach (MP 3.06 to MP 3.54)  
Project No. 83B-01-09

Scale: 1"=80' Date: December 2022

SHEET No. B-01 OF 6 SHEETS



GEOLABS, INC.  
Geotechnical Engineering


Soil Log Legend

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)


MAJOR DIVISIONS			USCS	TYPICAL DESCRIPTIONS
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS LESS THAN 5% FINES	GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES	GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
			GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
	SANDS	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES	GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
		CLEAN SANDS LESS THAN 5% FINES	SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES	SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
FINE-GRAINED SOILS	SILTS AND CLAYS		SM	SILTY SANDS, SAND-SILT MIXTURES
		SC	CLAYEY SANDS, SAND-CLAY MIXTURES	
		SILTS AND CLAYS	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			
MH	INORGANIC SILT, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS			
CH	INORGANIC CLAYS OF HIGH PLASTICITY			
50% OR MORE OF MATERIAL PASSING THROUGH NO. 200 SIEVE	SILTS AND CLAYS	OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS	
		PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS	
HIGHLY ORGANIC SOILS				

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



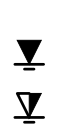
SHELBY TUBE SAMPLE




GRAB SAMPLE




CORE SAMPLE



WATER LEVEL OBSERVED IN BORING AT TIME OF DRILLING



WATER LEVEL OBSERVED IN BORING AFTER DRILLING



WATER LEVEL OBSERVED IN BORING OVERNIGHT

LL

LIQUID LIMIT (NP=NON-PLASTIC)

PI

PLASTICITY INDEX (NP=NON-PLASTIC)

TV


TORVANE SHEAR (tsf)

UC

UNCONFINED COMPRESSION OR UNIAXIAL COMPRESSIVE STRENGTH

TXUU

UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION (ksf)



GEOLABS, INC.  
Geotechnical Engineering

Soil Classification Log Key  
(with deviations from ASTM D2488)

GEOLABS, INC. CLASSIFICATION\*

GRANULAR SOIL (- #200 <50%)		COHESIVE SOIL (- #200 ≥ 50%)	
<ul style="list-style-type: none"><li>PRIMARY constituents are composed of the largest percent of the soil mass. Primary constituents are capitalized and bold (i.e., GRAVEL, SAND)</li><li>SECONDARY constituents are composed of a percentage less than the primary constituent. If the soil mass consists of 12 percent or more fines content, a cohesive constituent is used (SILTY or CLAYEY); otherwise, a granular constituent is used (GRAVELLY or SANDY) provided that the secondary constituent consists of 20 percent or more of the soil mass. Secondary constituents are capitalized and bold (i.e., SANDY GRAVEL, CLAYEY SAND) and precede the primary constituent.</li><li>accessory descriptions compose of the following: with some: &gt;12% with a little: 5 - 12% with traces of: &lt;5% accessory descriptions are lower cased and follow the Primary and Secondary Constituents (i.e., SILTY GRAVEL with a little sand)</li></ul>		<ul style="list-style-type: none"><li>PRIMARY constituents are based on plasticity. Primary constituents are capitalized and bold (i.e., CLAY, SILT)</li><li>SECONDARY constituents are composed of a percentage less than the primary constituent, but more than 20 percent of the soil mass. Secondary constituents are capitalized and bold (i.e., SANDY CLAY, SILTY CLAY, CLAYEY SILT) and precede the primary constituent.</li><li>accessory descriptions compose of the following: with some: &gt;12% with a little: 5 - 12% with traces of: &lt;5% accessory descriptions are lower cased and follow the Primary and Secondary Constituents (i.e., SILTY CLAY with some sand)</li></ul>	
EXAMPLE: Soil Containing 60% Gravel, 25% Sand, 15% Fines. Described as: SILTY GRAVEL with some sand			

RELATIVE DENSITY / CONSISTENCY

Granular Soils			Cohesive Soils			
N-Value (Blows/Foot)		Relative Density	N-Value (Blows/Foot)		PP Readings (tsf)	Consistency
SPT	MCS		SPT	MCS		
0 - 4	0 - 7	Very Loose	0 - 2	0 - 4		Very Soft
4 - 10	7 - 18	Loose	2 - 4	4 - 7	< 0.5	Soft
10 - 30	18 - 55	Medium Dense	4 - 8	7 - 15	0.5 - 1.0	Medium Stiff
30 - 50	55 - 91	Dense	8 - 15	15 - 27	1.0 - 2.0	Stiff
> 50	> 91	Very Dense	15 - 30	27 - 55	2.0 - 4.0	Very Stiff
			> 30	> 55	> 4.0	Hard

MOISTURE CONTENT DEFINITIONS

Dry: Absence of moisture, dry to the touch

Moist: Damp but no visible water

Wet: Visible free water

GRAIN SIZE DEFINITION

Description	Sieve Number and / or Size
Boulders	> 12 inches (305-mm)
Cobbles	3 to 12 inches (75-mm to 305-mm)
Gravel	3-inch to #4 (75-mm to 4.75-mm)
Coarse Gravel	3-inch to 3/4-inch (75-mm to 19-mm)
Fine Gravel	3/4-inch to #4 (19-mm to 4.75-mm)
Sand	#4 to #200 (4.75-mm to 0.075-mm)
Coarse Sand	#4 to #10 (4.75-mm to 2-mm)
Medium Sand	#10 to #40 (2-mm to 0.425-mm)
Fine Sand	#40 to #200 (0.425-mm to 0.075-mm)

ABBREVIATIONS

WOH: Weight of Hammer

WOR: Weight of Drill Rods

SPT: Standard Penetration Test Split-Spoon Sampler

MCS: Modified California Sampler

PP: Pocket Penetrometer

\*Soil descriptions are based on ASTM D2488-09a, Visual-Manual Procedure, with the above modifications by Geolabs, Inc. to the Unified Soil Classification System (USCS).

DATE

NO.

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QUANTITIES BY

CHECKED BY

NO.

ORIGINAL PLAN

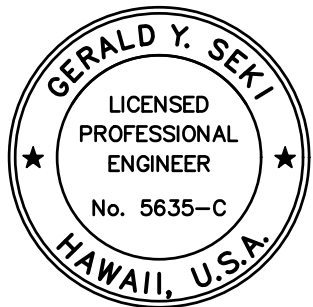
NOTE BOOK

NO.

NO.

LOG LEGEND FOR SOIL 7611-00(A) GPJ GEOLABS.GDT 12/21/21

SOIL CLASS LOG KEY 7611-00(A) GPJ GEOLABS.GDT 12/21/21



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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

BORING LOG LEGENDS

KAMEHAMEHA HIGHWAY DRAINAGE AND SAFETY IMPROVEMENTS  
Vicinity of Laniakaa Beach (MP 3.06 to MP 3.54)  
Project No. 83B-01-09

Scale: None Date: December 2022



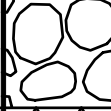
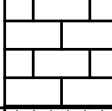
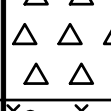
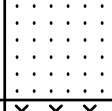

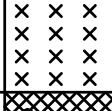

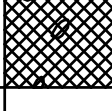


SHEET No. B-02 OF 6 SHEETS



GEOLABS, INC.  
Geotechnical Engineering

Rock Log Legend

ROCK DESCRIPTIONS

	BASALT		CONGLOMERATE
	BOULDERS		LIMESTONE
	BRECCIA		SANDSTONE
	CLINKER		SILTSTONE
	COBBLES		TUFF
	CORAL		VOID/CAVITY

ROCK DESCRIPTION SYSTEM

ROCK FRACTURE CHARACTERISTICS

The following terms describe general fracture spacing of a rock:

Massive:	Greater than 24 inches apart
Slightly Fractured:	12 to 24 inches apart
Moderately Fractured:	6 to 12 inches apart
Closely Fractured:	3 to 6 inches apart
Severely Fractured:	Less than 3 inches apart

DEGREE OF WEATHERING

The following terms describe the chemical weathering of a rock:

Unweathered:	Rock shows no sign of discoloration or loss of strength.
Slightly Weathered:	Slight discoloration inwards from open fractures.
Moderately Weathered:	Discoloration throughout and noticeably weakened though not able to break by hand.
Highly Weathered:	Most minerals decomposed with some corestones present in residual soil mass. Can be broken by hand.
Extremely Weathered:	Saprolite. Mineral residue completely decomposed to soil but fabric and structure preserved.

HARDNESS

The following terms describe the resistance of a rock to indentation or scratching:

Very Hard:	Specimen breaks with difficulty after several "pinging" hammer blows. Example: Dense, fine grain volcanic rock
Hard:	Specimen breaks with some difficulty after several hammer blows. Example: Vesicular, vugular, coarse-grained rock
Medium Hard:	Specimen can be broke by one hammer blow. Cannot be scraped by knife. SPT may penetrate by ~25 blows per inch with bounce. Example: Porous rock such as clinker, cinder, and coral reef
Soft:	Can be indented by one hammer blow. Can be scraped or peeled by knife. SPT can penetrate by ~100 blows per foot. Example: Weathered rock, chalk-like coral reef
Very Soft:	Crumbles under hammer blow. Can be peeled and carved by knife. Can be indented by finger pressure. Example: Saprolite

GEOTECHNICAL NOTES:

1. A geotechnical engineering report entitled "Geotechnical Engineering Exploration, Kamehameha Highway Drainage and Safety Improvements, Vicinity of MP 3.06 to 3.54, Waialua, Oahu, Hawaii" dated November 30, 2022 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 B-01.
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.

ORIGINAL PLAN

NOTED BOOK

No.

DESIGNED BY

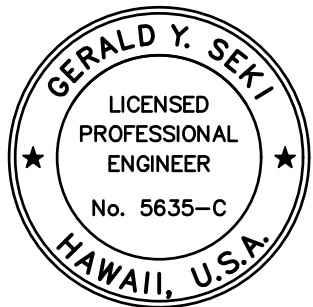
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DATE

QUANTITIES BY

DATE

LOG LEGEND FOR ROCK T611-00(A) GPJ GEOLABS GDT 12/21/21



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*Gerald Y. Seki* 04/2024  
SIGNATURE EXPIRATION DATE  
OF THE LICENSE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION


ROCK LOG LEGEND & NOTES


KAMEHAMEHA HIGHWAY DRAINAGE AND SAFETY IMPROVEMENTS  
Vicinity of Laniakea Beach (MP 3.06 to MP 3.54)  
Project No. 83B-01-09


Scale: None Date: December 2022

SHEET No. B-03 OF 6 SHEETS

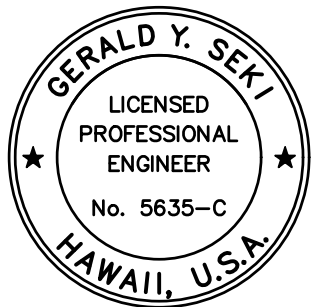
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83B-01-09	2023	20	228

		GEOLABS, INC. Geotechnical Engineering		KAMEHAMEHA HIGHWAY DRAINAGE AND SAFETY IMPROVEMENTS VICINITY OF MP 3.06 TO MP 3.54 WAIALUA, OAHU, 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 ): 16 *				
											Description				
Sieve #200 = 1.5%	13	95			40					SM	8-inch ASPHALTIC CONCRETE				
	14				9					SM	Brown with some gray SILTY SAND with a little gravel (basaltic), medium dense, moist (fill)				
	6	89			11		5			SM-SP	Light tan with traces of brown SILTY SAND (CORALLINE) with some gravel, medium dense, moist (fill)				
											Brownish tan fine SILTY SAND, medium dense, moist (recent alluvium)				
	5	93			8		10				Tan poorly graded SAND (CORALLINE) with traces of silt and gravel, loose, moist (beach deposit)				
							15				Boring terminated at 11.5 feet				
							20				* Elevations estimated from Roadway Plan and Profile dated May 2022 transmitted by WSP USA.				
Date Started: June 13, 2022												Water Level: Not Encountered			
Date Completed: June 13, 2022															
Logged By: S. Latronic												Drill Rig: CME-55D			
Total Depth: 11.5 feet												Drilling Method: 6" Hollow-Stem Auger			
Work Order: 7651-00(A)												Driving Energy: 140 lb. wt., 30 in. drop			

		GEOLABS, INC. Geotechnical Engineering		KAMEHAMEHA HIGHWAY DRAINAGE AND SAFETY IMPROVEMENTS VICINITY OF MP 3.06 TO MP 3.54 WAIALUA, OAHU, HAWAII										Log of Boring 2	
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 ): 14 *				
											Description				
	12	91			25					GW	7-inch ASPHALTIC CONCRETE				
	7				16					SM	Light tan SANDY GRAVEL (CORALLINE) with a little silt, dense, moist (fill)				
	5	96			30		5			SP	Brownish tan fine to medium SILTY SAND, medium dense, moist (recent alluvium)				
											Tan poorly graded SAND (CORALLINE), medium dense, moist (beach deposit)				
	6	99			26		10				Boring terminated at 11.5 feet				
							15								
							20								
Date Started: June 13, 2022												Water Level: Not Encountered			
Date Completed: June 13, 2022															
Logged By: S. Latronic												Drill Rig: CME-55D			
Total Depth: 11.5 feet												Drilling Method: 6" Hollow-Stem Auger			
Work Order: 7651-00(A)												Driving Energy: 140 lb. wt., 30 in. drop			

		GEOLABS, INC. Geotechnical Engineering		KAMEHAMEHA HIGHWAY DRAINAGE AND SAFETY IMPROVEMENTS VICINITY OF MP 3.06 TO MP 3.54 WAIALUA, 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 Elevation (feet ): 13 *				
											Description				
Direct Shear	2				8					SM	Brown fine SILTY SAND, medium dense, dry to moist (recent alluvium)				
	23	114	0		9		5			SP-SM	Light tan poorly graded fine SAND (CORALLINE) with a little silt, loose, dry to moist (beach deposit)				
	27				12		10				grades coarser locally				
	28	89			40		15				grades to medium dense, wet				
	43				7		20			CH	Gray subrounded BOULDERS (BASALTIC), very dense (recent alluvium)				
LL=53 PI=29	47	71			50/4"		25				Brown SILTY CLAY with some sand (basaltic) and a little gravel, medium stiff (recent alluvium)				
							30				grades with cobbles (basaltic) locally				
							35				Gray with traces of brown vugular BASALT, moderately to closely fractured, slightly weathered, hard to very hard (a'a basalt)				
							40			GW	Gray with some brown subangular SANDY GRAVEL (BASALTIC) with some cobbles, dense (clinker)				
							45			GM	Brown with some gray SILTY GRAVEL (BASALTIC) with some sand, dense to very dense (clinker)				
Sieve #200 = 13.9% UC= 8500 psi	24				52		50				grades with cobbles (basaltic) locally				
							55				Gray vugular BASALT, moderately fractured, slightly weathered, hard to very hard (a'a basalt)				
							60			SM	Reddish brown with some gray SILTY SAND (BASALTIC) with some gravel, slightly cemented, dense (clinker)				
							65				Gray dense BASALT, moderately to closely fractured, unweathered to slightly weathered, very hard (a'a basalt)				
							70				Boring terminated at 71.5 feet				
							75								
Date Started: June 7, 2022												Water Level: 12.4 ft. 06/08/2022 1250 HRS			
Date Completed: June 8, 2022												12.3 ft. 06/08/2022 1805 HRS			
Logged By: S. Latronic												Drill Rig: CME-55D			
Total Depth: 71.5 feet												Drilling Method: 4" Solid-Stem Auger & PQ Coring			
Work Order: 7651-00(A)												Driving Energy: 140 lb. wt., 30 in. drop			

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
NO.	



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Signature: *Gerald Y. Seki* EXPIRATION DATE: 04/2024

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
<b><u>BORING LOG - 1</u></b>	
KAMEHAMEHA HIGHWAY DRAINAGE AND SAFETY IMPROVEMENTS Vicinity of Laniakea Beach (MP 3.06 to MP 3.54) Project No. 83B-01-09	
Scale: None	Date: December 2022
SHEET No. B-04 OF 6 SHEETS	



ORIGINAL PLAN

DATE

DESIGNED BY

TRACED BY

NOTED BY

QUANTITIES BY

CHECKED BY

No.

STAFFS PROVIDED BY

DRAWN BY

DESIGNED BY

TRACED BY


NOTED BY

QUANTITIES BY


CHECKED BY

No.

BORING LOG DOT-HAW-FOUR 7651-00(A) (PT. GEOLABS DOT 8422)

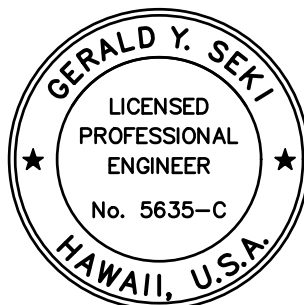
		GEOLABS, INC.		KAMEHAMEHA HIGHWAY DRAINAGE AND SAFETY IMPROVEMENTS VICINITY OF MP 3.06 TO MP 3.54 WAIALUA, OAHU, HAWAII										Log of Boring 4	
Other Tests	Moisture Content (%)	Dry Unit Weight (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Approximate Mudline Elevation (feet) : 12				
											Description				
Direct Shear TXUU Su=2.4 ksf Sieve #200 = 6.8%  LL=60 PI=28 TXUU Su=2.4 ksf UC= 10460 psi          UC= 24070 psi UC= 13280 psi          UC= 25730 psi	7		57		25/2"					SM	Brownish tan with some gray SILTY SAND (CORALLINE) with a little cobbles (basaltic), medium dense, moist (fill)				
	20	105			29		5			SP-SM	Gray BOULDERS (BASALTIC), very dense, dry (fill)				
	21		0		12		10				Tan poorly graded SAND (CORALLINE) with a little silt and traces of gravel, medium dense, moist to wet (beach deposit)				
	21		44				15			CH	grades with brown sandy silt pockets locally				
	36				34		20			MH	Gray with traces of brown subrounded GRAVELLY COBBLES (BASALTIC), dense (recent alluvium)				
	60	66			20	2.0	25			MH	Reddish brown with some gray SILTY CLAY with some gravel (basaltic), hard (recent alluvium)				
			98	62			30					Brown with grayish brown mottling CLAYEY SILT with a little gravel (basaltic), very stiff (recent alluvium)			
			65				35			SM	Brown with reddish brown mottling CLAYEY SILT with some sand and a little gravel (basaltic), stiff (recent alluvium)				
			57				40			GW-GM	Gray vugular BASALT, slightly fractured, slightly weathered, hard (a'a basalt)				
		31			20		45			SM	Brown and gray SILTY SAND (BASALTIC) with some gravel, medium dense (clinker)				
		21	114		22		50					Brownish gray vugular BASALT, severely fractured, moderately weathered, medium hard (a'a basalt)			
			9		48/6" +50/4"		55					Brown and gray SANDY GRAVEL (BASALTIC) with a little cobbles and traces of silt, medium dense (clinker)			
	21		100	71	50/5"	60					Brown with some gray SILTY SAND (BASALTIC) with some gravel and a little cobbles, very dense (clinker)				
			100	73		65					Reddish brown with some gray cemented BASALT, moderately fractured, moderately weathered, hard (welded clinker)				
			100	60		70					Gray dense BASALT, moderately fractured, slightly weathered, very hard (a'a basalt)				
			100	75		75					Boring terminated at 66 feet				
Date Started: June 9, 2022												Water Level: 12.4 ft. 06/09/2022 1030 HRS			
Date Completed: June 9, 2022												9.9 ft. 06/09/2022 1535 HRS			
Logged By: S. Latronic												Drill Rig: CME-55D			
Total Depth: 66 feet												Drilling Method: 4" Solid-Stem Auger & PQ Coring			
Work Order: 7651-00(A)												Driving Energy: 140 lb. wt., 30 in. drop			

BORING LOG DOT-HAW-FOUR 7651-00(A) (PT. GEOLABS DOT 8422)

		GEOLABS, INC.		KAMEHAMEHA HIGHWAY DRAINAGE AND SAFETY IMPROVEMENTS VICINITY OF MP 3.06 TO MP 3.54 WAIALUA, OAHU, 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) : 14 *				
											Description				
LL=59 PI=29	24	76			32	4.0				SM	Brown SILTY SAND with traces of clay, medium dense, moist (recent alluvium)				
	22				45					CH	Brown SILTY CLAY with a little cobbles (basaltic), very stiff to hard, moist (recent alluvium)				
	18				23/6" +25/1"						grades with boulders (basaltic)				
											Boring terminated at 6.1 feet				
Date Started: June 15, 2022												Water Level: Not Encountered			
Date Completed: June 15, 2022															
Logged By: S. Latronic												Drill Rig: CME-55D			
Total Depth: 6.1 feet												Drilling Method: 6" Hollow-Stem Auger			
Work Order: 7651-00(A)												Driving Energy: 140 lb. wt., 30 in. drop			

BORING LOG DOT-HAW-FOUR 7651-00(A) (PT. GEOLABS DOT 8422)

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83B-01-09	2023	21	228



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
Signature: *Gerald Y. Seki* EXPIRATION DATE: 04/2024  
SIGNATURE OF THE LICENSEE



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION



**BORING LOGS - 2**

KAMEHAMEHA HIGHWAY DRAINAGE AND SAFETY IMPROVEMENTS  
Vicinity of Laniakea Beach (MP 3.06 to MP 3.54)  
Project No. 83B-01-09

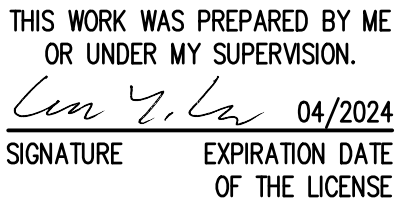
Scale: None Date: December 2022

SHEET No. B-05 OF 6 SHEETS

		<b>GEOLABS, INC.</b> Geotechnical Engineering				<b>KAMEHAMEHA DRAINAGE          AND SAFETY IMPROVEMENTS</b> VICINITY OF MP 3.06 TO MP 3.54 WAIALUA, OAHU, HAWAII				Log of Boring <b>7</b>	
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) : 16 *
	13				16					GW	Description 8-inch ASPHALTIC CONCRETE Brownish gray SANDY GRAVEL (BASALTIC) with some cobbles, very dense, moist (fill) Brown fine to medium SILTY SAND with some cobbles (basaltic), medium dense, moist (fill) Reddish brown with some gray SILTY CLAY with a little gravel (basaltic), very stiff, moist (recent alluvium) Gray BOULDER (BASALTIC), very dense, dry (recent alluvium) Boring terminated at 5.1 feet
	6				25/1"		5			SM	
										CH	
							10				
							15				
							20				
Date Started: June 14, 2022 Date Completed: June 14, 2022 Logged By: S. Latronic Total Depth: 5.1 feet Work Order: 7651-00(A)							Water Level:  Not Encountered Drill Rig: CME-55D Drilling Method: 4" Solid-Stem Auger Driving Energy: 140 lb. wt., 30 in. drop				

		GEOLABS, INC. Geotechnical Engineering					KAMEHAMEHA DRAINAGE AND SAFETY IMPROVEMENTS VICINITY OF MP 3.06 TO MP 3.54 WAIALUA, OAHU, HAWAII					Log of Boring 8	
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) : 19 *			
										Description			
	15	88	80		25/3"				GM	7-inch ASPHALTIC CONCRETE			
										Gray with some brown SILTY GRAVEL (BASALTIC) with some cobbles and a little sand, very dense, moist (fill)			
	38				17		5	CH	Gray BOULDERS (BASALTIC), very dense, dry (recent alluvium)				
			63					SM	Reddish brown SILTY CLAY, very stiff, moist (recent alluvium)				
	43					21		10	ML	Brown with some gray SILTY SAND (BASALTIC) with some rounded gravel, medium dense, moist (recent alluvium)			
										Brown with gray mottling CLAYEY SILT with traces of decomposed gravel, very stiff, moist (recent alluvium)			
										Boring terminated at 13 feet			
							15						
							20						
Date Started: June 14, 2022								Water Level: ▼ Not Encountered					
Date Completed: June 14, 2022													
Logged By: S. Latronic								Drill Rig: CME-55D					
Total Depth: 13 feet								Drilling Method: 4" Solid-Stem Auger & PQ Coring					
Work Order: 7651-00(A)								Driving Energy: 140 lb. wt., 30 in. drop					

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



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**BORING LOGS - 3**

KAMEHAMEHA HIGHWAY DRAINAGE AND SAFETY IMPROVEMENTS  
Vicinity of Lanikaea Beach (MP 3.06 to MP 3.54)  
Project No. 83B-01-09

Scale: None Date: December 2022

SHEET No. *B-06* OF 6 SHEETS