

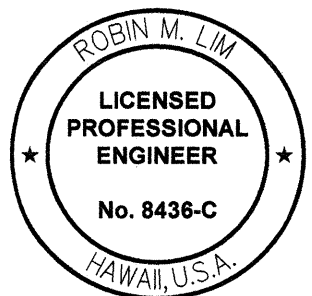
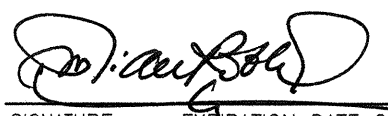


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(2)	2007	158	331

		GEOLABS, INC. Geotechnical Engineering		NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, 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 MSL): 52.5 *					
										Description					
LL=48 PI=29	14	101			59	>4.5			CL	Brown SILTY CLAY, hard, damp to moist (alluvium)					
	19				26					grades with black mottling					
	17	106			68	>4.5	5								
	15	106			82	>4.5	10		SW	White CORALLINE GRAVELLY SAND with silt, dense, moist (coral formation)					
	15				60		15			grades to white and orange					
					20/0' Ref.		20			Boring terminated at 20 feet * Elevations estimated from Plan and Profile transmitted by R.M. Towill Corporation on September 5, 1997.					
							25								
							30								
							35								
Date Started: October 1, 1997										Water Level: ∅ Not Encountered					
Date Completed: October 1, 1997															
Logged By: S. Tanaka										Drill Rig: CME-75					
Total Depth: 20 feet										Drilling Method: 4" Auger					
Work Order: 3860-30										Driving Energy: 140 lb. wt., 30 in. drop					

		GEOLABS, INC. Geotechnical Engineering		NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, 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 MSL): 60.7 *					
										Description					
	14	92			32				SW	1-inch ASPHALTIC CONCRETE					
	23				21	4.0			CL	Tan GRAVELLY SAND with silt, medium dense to dense, damp (fill)					
	21	101			41	>4.5	5			Brown with black mottling SILTY CLAY, very stiff, moist (alluvium)					
										grades to hard					
	21	96			60	>4.5	10								
	19				60		15			grades with coralline sand					
	16				30/3' Ref.		20			Boring terminated at 20.3 feet					
							25								
							30								
							35								
Date Started: October 1, 1997										Water Level: ∅ Not Encountered					
Date Completed: October 1, 1997															
Logged By: S. Tanaka										Drill Rig: CME-75					
Total Depth: 20.3 feet										Drilling Method: 4" Auger					
Work Order: 3860-30										Driving Energy: 140 lb. wt., 30 in. drop					



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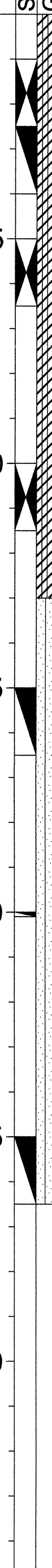
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

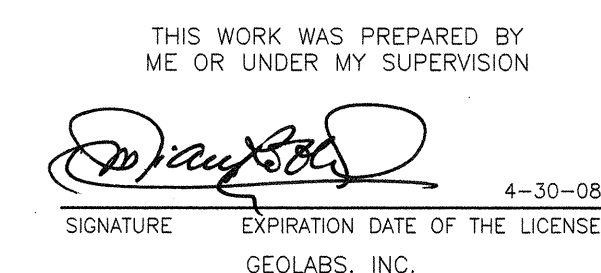
BORING LOGS-1

North-South Road
Phase 1B
F.A.I. Proj. No. STP-8930(2)

Date: Feb 21, 2007

SHEET No. G2.1 OF 27 SHEETS

		GEOLABS, INC. Geotechnical Engineering					NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, 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 MSL): 64 *			
											Description			
		14	97			43	>4.5			CL	Brown SILTY CLAY with coralline sand, hard, damp (alluvium)			
		18				38								
		19	112			59	>4.5	5			grades to moist			
		19	106			84	>4.5	10			grades with black mottling			
		10				87		15			SM	White SILTY CORALLINE SAND with coralline gravel, very dense, damp (coral formation)		
		9				38		25						
											Boring terminated at 26.5 feet			

[illegible]









BORING LOGS-2









North-South Road
Phase 1B
F.A.I. Proj. No. STP-8930(2)

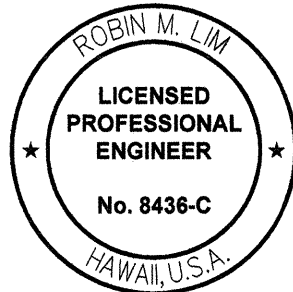
Date: Feb 21, 2007

SHEET No. G2.2 OF 27 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(2)	2007	160	331

		GEOLABS, INC. Geotechnical Engineering				NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, 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): 75.5 *	
										Description	
	15	87			66	>4.5			CL	Brown SILTY CLAY, hard, damp (alluvium)	
	15				52						
	15	90			50/.3' Ref.	>4.5	5			grades with black mottling	
	20	104			79	>4.5	10			grades to moist	
	14				50/.3' Ref.		15			grades with coralline sand and gravel	
	16				50/.3' Ref.		20				
	18				50/.5' Ref.		25			Boring terminated at 25.5 feet	
							30				
							35				
Date Started: October 1, 1997								Water Level: ∅ Not Encountered			
Date Completed: October 1, 1997											
Logged By: S. Tanaka								Drill Rig: CME-75			
Total Depth: 25.5 feet								Drilling Method: 4" Auger			
Work Order: 3860-30								Driving Energy: 140 lb. wt., 30 in. drop			

		GEOLABS, INC. Geotechnical Engineering					NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, 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 MSL): 80.4 *		
										Description		
	16	98			46	>4.5			CL	Brown SILTY CLAY, hard, damp (alluvium)		
	7				39			grades with coralline sand				
	16	117			50/.5' +30/.3' Ref.	>4.5	5			grades to moist		
	22	109			59	>4.5	10			Boring terminated at 21.3 feet		
	20				42		15					
	18				31/.5' +50/.3' Ref.		20					
							25					
							30					
							35					
Date Started: September 30, 1997								Water Level:  Not Encountered				
Date Completed: September 30, 1997												
Logged By: S. Tanaka								Drill Rig: CME-75				
Total Depth: 21.3 feet								Drilling Method: 4" Auger				
Work Order: 3860-30								Driving Energy: 140 lb. wt., 30 in. drop				



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GEOLABS, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION









BORING LOGS-3








North-South Road
Phase 1B
F.A.I. Proj. No. STP-8930(2)

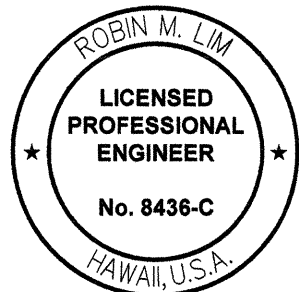
Date: Feb 21, 2007

SHEET No. G2.3 OF 27 SHEETS

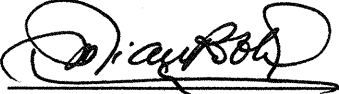
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(2)	2007	161	331

		GEOLABS, INC. Geotechnical Engineering		NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, 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): 82 *
										Description
LL=46 PI=30	16	90			55	>4.5			CL	Brown SILTY CLAY, hard, damp (alluvium)
	17				44					grades with black mottling
	19	108			84	>4.5	5			grades with coralline sand
	20	104			78	>4.5	10			grades to moist
	20				58		15			
	18				50/.5' Ref.		20			
	17				50/.5' Ref.		25			Boring terminated at 25.5 feet
										35
Date Started: September 30, 1997				Water Level: ∅ Not Encountered						
Date Completed: September 30, 1997										
Logged By: S. Tanaka				Drill Rig: CME-75						
Total Depth: 25.5 feet				Drilling Method: 4" Auger						
Work Order: 3860-30				Driving Energy: 140 lb. wt., 30 in. drop						

		GEOLABS, INC. Geotechnical Engineering		NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, 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 MSL): 88.6 *
										Description
	16	103			92	>4.5			CL	Brown with black mottling SILTY CLAY, hard, damp (alluvium)
	16				48/.5' +50/.3' Ref.					grades with a little coralline sand
	17	107			50/.3' Ref.	>4.5	5			
	17	114			48/.5' +50/.3' Ref.	>4.5	10			grades to moist
	19				66		15			
	20				74		20			
										Boring terminated at 21.5 feet
										35
Date Started: September 30, 1997				Water Level: ∅ Not Encountered						
Date Completed: September 30, 1997										
Logged By: S. Tanaka				Drill Rig: CME-75						
Total Depth: 21.5 feet				Drilling Method: 4" Auger						
Work Order: 3860-30				Driving Energy: 140 lb. wt., 30 in. drop						

















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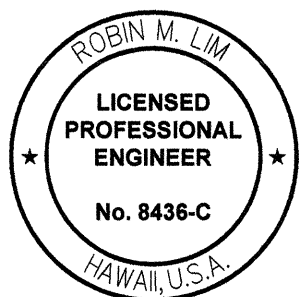

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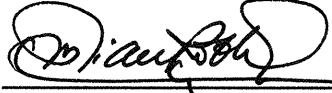
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
BORING LOGS-4	
North-South Road Phase 1B F.A.I. Proj. No. STP-8930(2)	
Date: Feb 21, 2007	
SHEET No. G2.4 OF 27 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(2)	2007	162	331

		GEOLABS, INC. Geotechnical Engineering		NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, 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): 101.7 *
										Description
	17	90			38	>4.5			CL	Brown SILTY CLAY, hard, damp (alluvium)
	16				24					
	20	107			83	>4.5	5			grades with black mottling
	19	114			99	>4.5	10			grades with some coralline sand, moist
	20				52		15			
	18				48/5' +30/2' Ref.		20			Boring terminated at 21.2 feet
							25			
							30			
							35			
Date Started: September 30, 1997				Water Level: ∅ Not Encountered						
Date Completed: September 30, 1997										
Logged By: S. Tanaka				Drill Rig: CME-75						
Total Depth: 21.2 feet				Drilling Method: 4" Auger						
Work Order: 3860-30				Driving Energy: 140 lb. wt., 30 in. drop						








		GEOLABS, INC. Geotechnical Engineering		NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, 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): 116.5 *
										Description
	14				20	>4.5			CL	Brown SILTY CLAY, very stiff, damp (alluvium)
	16				26					
	17				49/5' +30/3' Ref.	>4.5	5			grades with black mottling and coral sand, hard
	20				82	>4.5	10			grades to moist
	20				73	>4.5	15			
	18				70		20			Boring terminated at 21.5 feet
							25			
							30			
							35			
Date Started: September 30, 1997				Water Level: ∅ Not Encountered						
Date Completed: September 30, 1997										
Logged By: S. Tanaka				Drill Rig: CME-75						
Total Depth: 21.5 feet				Drilling Method: 4" Auger						
Work Order: 3860-30				Driving Energy: 140 lb. wt., 30 in. drop						











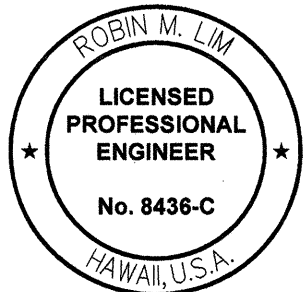
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STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
BORING LOGS-5	
North-South Road Phase 1B F.A.I. Proj. No. STP-8930(2)	
Date: Feb 21, 2007	
SHEET No. G2.5 OF 27 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(2)	2007	163	331

		GEOLABS, INC. Geotechnical Engineering		NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 11		
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): 126.3 *
										Description
	16				58	>4.5			CL	Brown SILTY CLAY, hard, damp (alluvium)
	17				48					grades with black mottling
	21				82		5			grades with coral sand, moist
	21				85	>4.5	10			
	21				83		15			
	19				25/5' +20/2' Ref.		20			Boring terminated at 21.2 feet
							25			
							30			
							35			
Date Started: September 30, 1997				Water Level: ∅ Not Encountered						
Date Completed: September 30, 1997										
Logged By: S. Tanaka				Drill Rig: CME-75						
Total Depth: 21.2 feet				Drilling Method: 4" Auger						
Work Order: 3860-30				Driving Energy: 140 lb. wt., 30 in. drop						







		GEOLABS, INC. Geotechnical Engineering		NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 12		
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): 132.9 *
										Description
	16				38/5' +50/3' Ref.	>4.5			CL	Brown with black mottling SILTY CLAY with sand and gravel, hard, damp (alluvium)
	9				50/5' Ref.					
	16				39/5' +50/3' Ref.		5			grades without gravel
	18				46/5' +30/3' Ref.		10			grades to moist
	21				57		15			
	23				35		20			
	18				73		25			Boring terminated at 26.5 feet
							30			
							35			
Date Started: September 29, 1997				Water Level: ∅ Not Encountered						
Date Completed: September 29, 1997										
Logged By: S. Tanaka				Drill Rig: CME-75						
Total Depth: 26.5 feet				Drilling Method: 4" Auger						
Work Order: 3860-30				Driving Energy: 140 lb. wt., 30 in. drop						










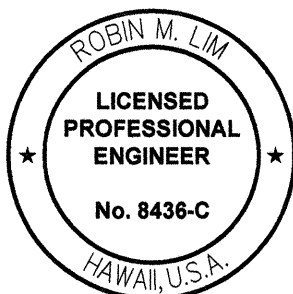
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STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
BORING LOGS-6	
North-South Road Phase 1B F.A.I. Proj. No. STP-8930(2)	
Date: Feb 21, 2007	
SHEET No. 62.6 OF 27 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(2)	2007	164	331

		GEOLABS, INC. Geotechnical Engineering					NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 13	
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): 137.8 *		
										Description		
	18				77	>4.5			CL	Reddish brown SILTY CLAY with some sand, hard, damp		
	20				34							
	20				32	>4.5	5					
	19				23/.5' +50/.3' Ref.	>4.5	10			grades with gravel and more sand		
	18				50/.3' Ref.	>4.5	15			grades without gravel		
	19				90		20			Boring terminated at 21.5 feet		
							25					
							30					
							35					
Date Started: September 29, 1997							Water Level: ∇ Not Encountered					
Date Completed: September 29, 1997												
Logged By: S. Tanaka							Drill Rig: CME-75					
Total Depth: 21.5 feet							Drilling Method: 4" Auger					
Work Order: 3860-30							Driving Energy: 140 lb. wt., 30 in. drop					

		GEOLABS, INC. Geotechnical Engineering				NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 14	
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): 157.5 *	
										Description	
	17				50/.5' Ref. 98	>4.5			CL	Brown with black mottling SILTY CLAY, hard, damp (alluvium)	
	17										
	19				79	>4.5	5			grades to damp to moist	
	17				50/.3' Ref.	>4.5	10				
	19				50/.5' Ref.	>4.5	15				
	21				50/.5' Ref.		20			Boring terminated at 21 feet	
							25				
							30				
							35				
Date Started: September 29, 1997										Water Level:  Not Encountered	
Date Completed: September 29, 1997											
Logged By: S. Tanaka										Drill Rig: CME-75	
Total Depth: 21 feet										Drilling Method: 4" Auger	
Work Order: 3860-30										Driving Energy: 140 lb. wt., 30 in. drop	



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SIGNATURE: *[Signature]* EXPIRATION DATE OF THE LICENSE: 4-30-08
GEOLABS, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BORING LOGS-7

North-South Road
Phase 1B
F.A.I. Proj. No. STP-8930(2)

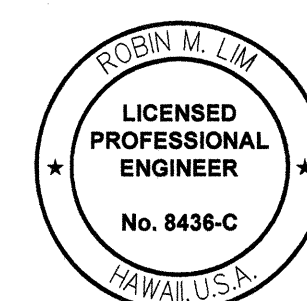
Date: Feb 21, 2007

SHEET No. 62.7 OF 27 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(2)	2007	165	331

GEOLABS, INC. Geotechnical Engineering		NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII					Log of Boring 101					
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): 82 *	Description	
LL=64 PI=44	15	112			58	>4.5			CH		Dark brown with black mottling SILTY CLAY with some black sub-rounded coarse sand, very hard, dry to damp (alluvium)	
	16				62	>4.5						
	18	100			54/5' +10/0' Ref.	>4.5	5				grades with fine sand	
	19				31/5' +30/3' Ref.	>4.5	10					
UC=11	20	111			30/3' Ref.	>4.5	15		MH		Dark brown with black mottling CLAYEY SILT with very fine sand and black sub-rounded coarse sand, very hard, dry to damp (alluvium)	
	24				56	>4.5	20			CH		Dark brown SILTY CLAY with very fine sand, very hard, damp (alluvium)
	21	92			40/3' Ref.	>4.5	25			MH		Brown with black and white mottling CLAYEY SILT with fine sand, very hard, dry (alluvium)
	21				52	>4.5	30			ML		Dark brown very fine SANDY SILT, very hard, dry to damp (alluvium)
UC=7	36	63			30/3' Ref.		35		SM		Whitish orange SILTY CORALLINE SAND, very dense, dry (alluvium/coralline detritus)	
	39				41	>4.5	40			ML		Reddish brown SANDY SILT, very hard, dry to damp (alluvium)
	25				34/5' +10/0' Ref.	>4.5	45					grades to brown with black mottling
	23				60/5' +10/0' Ref.	>4.5	50			CH		Dark brown with black mottling SILTY CLAY, very hard, damp (alluvium)
							55				Boring terminated at 51 feet	
Date Started: July 29, 2004							Water Level: ∇ Not Encountered					
Date Completed: July 29, 2004												
Logged By: Y. Chiba							Drill Rig: CME-75					
Total Depth: 51 feet							Drilling Method: 4" Auger					
Work Order: 3860-30							Driving Energy: 140 lb. wt., 30 in. drop					

GEOLABS, INC. Geotechnical Engineering				NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 102			
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): 82 *	
										Description	
	16	99			50/5'				CH	Light brown and gray SILTY CLAY, very hard, dry (alluvium)	
	16				56						
	19	102			50/3'		5		CH	Brown SILTY CLAY with some fine sand, very hard, dry to damp (alluvium)	
	20				44		10			grades to hard	
	20	108			50/3'		15			grades to very hard	
	21				53		20				
	20	104			30/1'		25		CH	Reddish brown with gray streaks SILTY CLAY, very hard, dry to damp (alluvium)	
	16				55/5' +10/0' Ref.	>4.5	30		CH	Brown with white mottling SILTY CLAY, very hard, dry (alluvium)	
	24	98			50	>4.5	35		MH	Dark brown CLAYEY SILT with very fine sand, very hard, damp (alluvium)	
	25				25	>4.5	40				
	45	66			32	3.0	45			grades to brown, very stiff, dry	
									SM	Whitish gray with multi-color mottling SILTY CORALLINE SAND with traces of clay, medium dense, moist (coralline detritus)	
	28				35	>4.5	50		ML	Reddish brown SANDY SILT with traces of clay, very hard, damp (residual soil)	
										Boring terminated at 51.5 feet	
							55				
Date Started: July 28, 2004								Water Level: ∇ Not Encountered			
Date Completed: July 29, 2004											
Logged By: F. Meyer								Drill Rig: CME-75			
Total Depth: 51.5 feet								Drilling Method: 4" Auger & T.C. Finger Bit			
Work Order: 3860-30								Driving Energy: 140 lb. wt., 30 in. drop			



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ME OR UNDER MY SUPERVISION

SIGNATURE: *[Signature]* 4-30-08
EXPIRATION DATE OF THE LICENSE
GEOLABS, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION


BORING LOGS-8

North-South Road
Phase 1B
F.A.I. Proj. No. STP-8930(2)














Date: Feb 21, 2007

SHEET No. 62.8 OF 27 SHEETS

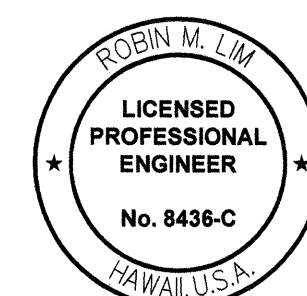
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(2)	2007	166	331

		GEOLABS, INC. Geotechnical Engineering				NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 103	
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): 82 *	
										Description	
UC=71	15	104			60/.5'				CL	Brown SILTY CLAY, very hard, damp (alluvium)	
	16				64						
	17	107			50/.5'		5		CH	Brown SILTY CLAY with gray clay, very hard, damp (alluvium)	
	19				39		10			grades to hard	
	19	94			50/.5'		15		CH	Brown with white mottling SILTY CLAY, very hard, damp (alluvium)	
	19				53/.5'		20				
	19	105			60/.5'		25		CH	Light brown SILTY CLAY, very hard, damp (alluvium)	
	19				50/.5'		30				
									CH	Brown SILTY CLAY, very hard, damp (alluvium)	
	18	92			50/.5'		35				
	21				54/.5'		40		SM	Brown SILTY SAND with clay, very dense, damp (alluvium)	
	23	73			69		45				
24				40		50		SM	Reddish tan SILTY SAND, dense, damp (alluvium)		
							55			Boring terminated at 50 feet	
Date Started: July 28, 2004							Water Level: ∅ Not Encountered				
Date Completed: July 28, 2004							Drill Rig: CME-75				
Logged By: F. Meyer							Drilling Method: 4" Auger & T.C. Finger Bit				
Total Depth: 50 feet							Driving Energy: 140 lb. wt., 30 in. drop				
Work Order: 3860-30											

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(2)	2007	167	331

		GEOLABS, INC.				NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 105	
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): 136.5 *	
										Description	
LL=55 PI=37	18	107			56	>4.5			CL	Dark brown SILTY CLAY with very fine sand, soft, dry (fill/alluvium)	
	18				56	>4.5			CH	Dark brown SILTY CLAY with some sand, very hard, dry (alluvium)	
	21	110			45	>4.5	5		CH	Brown with black mottling SILTY CLAY, hard to very hard, damp (alluvium)	
	20				65	>4.5	10				
	21	113			50/5' +10/0' Ref.	>4.5	15		CH	Brown with black and white mottling SILTY CLAY, very hard, damp (alluvium)	
UC=83	21				68	>4.5	20				
	21	111			30/3' Ref.	>4.5	25		CH	Brown with black mottling SILTY CLAY, hard, damp (alluvium)	
	22				60	4.0	30				
	23	109			30/3' Ref.	>4.5	35		CH	Brown with black and tan mottling SILTY CLAY, very hard, damp to moist (alluvium)	
	19				45/3' Ref.		40		SM	Brown with black mottling SILTY SAND, very dense, damp (alluvium)	
	17				55/3' Ref.		45			Brown with black mottling extremely weathered BASALTIC BOULDERS, breaks down to clayey silt with fine sand, very hard, dry to damp (alluvium)	
	19				60/3' Ref.		50			Boring terminated at 49.8 feet	
								55			
Date Started: July 23, 2004								Water Level: ∇ Not Encountered			
Date Completed: July 23, 2004											
Logged By: Y. Chiba								Drill Rig: CME-75			
Total Depth: 49.8 feet								Drilling Method: 4" Auger			
Work Order: 3860-30								Driving Energy: 140 lb. wt., 30 in. drop			

GEOLABS, INC. Geotechnical Engineering				NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 106			
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): 135 *	
										Description	
UC=9	13	107			64				MH	Dark brown CLAYEY SILT with some basaltic gravel and cobbles, hard, damp (fill/alluvium)	
	19				51	4.5			CH	Dark brown SILTY CLAY with some basaltic gravel, very hard, damp (alluvium)	
	19	107			73	>4.5	5		CH	Brown with black mottling SILTY CLAY, very hard, damp (alluvium)	
	20				72	>4.5	10		CH	Brown with black and white mottling SILTY CLAY with some sand, very hard, damp (alluvium)	
	22	106			50/.3' Ref.	>4.5	15			grades with some highly weathered basaltic gravel	
	22				66	>4.5	20				
	21	106			30/.3' Ref.	>4.5	25				
	24				74	>4.5	30		CH	Brown with reddish brown mottling SILTY CLAY, very hard, damp (alluvium)	
	18	98			30/.3' Ref.	2.5	35		ML	Brown with black mottling fine SANDY SILT, very stiff, damp (alluvium)	
	28				10/.0' Ref.		40		SM	Dark brown with black mottling cemented SILTY SAND, very dense, dry (alluvium)	
	17				30/.3' Ref.		45			grades to brown	
19				40/.3' Ref.	>4.5	50		MH	Reddish brown with black mottling CLAYEY SILT with very fine sand, very hard, damp (residual soil)		
										Boring terminated at 50.3 feet	
55											
Date Started: July 22, 2004										Water Level: ∇ Not Encountered	
Date Completed: July 22, 2004											
Logged By: Y. Chiba										Drill Rig: CME-75	
Total Depth: 50.3 feet										Drilling Method: 4" Auger	
Work Order: 3860-30										Driving Energy: 140 lb. wt., 30 in. drop	



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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION














BORING LOGS-10














North-South Road
Phase 1B
F.A.I. Proj. No. STP-8930(2)

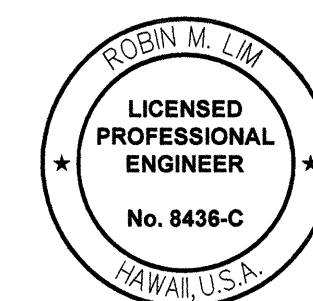
Date: Feb 21, 2007

SHEET No. G2.10 OF 27 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(2)	2007	168	331

		GEOLABS, INC. Geotechnical Engineering				NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 107		
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 :		
										Description		
LL=52 PI=35 UC=85	18	96			47				CH	Brown SILTY CLAY, hard, damp (alluvium)		
	20				37							
	22	109			32		5			grades to very stiff		
	20				75		10		CH	Brown SILTY CLAY with sand, very hard, damp (alluvium)		
	20	110			50/4'		15					
	16				63		20			grades with traces of coralline gravel		
	18	115			50/4'		25					
	20				50/5'		30		CH	Light brown with brown, black and gray mottling SILTY CLAY with some coralline gravel, hard, damp (alluvium)		
	20	74			50/5'		35		SM	Light brown SILTY SAND, very dense, dry (alluvium)		
	25				50/3'		40			grades with some gravel		
19				50/3'		45						
20				60/5'		50		MH	Light brown CLAYEY SILT, very hard, damp (alluvium)			
										Boring terminated at 50 feet		
										55		
Date Started: July 26, 2004										Water Level: ∇ Not Encountered		
Date Completed: July 26, 2004												
Logged By: F. Meyer										Drill Rig: CME-75		
Total Depth: 50 feet										Drilling Method: 4" Auger & T.C. Finger Bit		
Work Order: 3860-30										Driving Energy: 140 lb. wt., 30 in. drop		

		GEOLABS, INC. Geotechnical Engineering				NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 108	
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): 136.5 *	
										Description	
UC=34	18	96			66				MH	Dark brown CLAYEY SILT with some basaltic gravels, stiff, dry (fill)	
	19				52				CH	Dark brown with black mottling SILTY CLAY with some basaltic gravels, very hard, dry to damp (fill/alluvium)	
	21	108			48	>4.5	5		CH	Brown with black mottling SILTY CLAY, very hard, damp (alluvium)	
	20				40/.5'	>4.5	10				
	22	106			30/.3' Ref.	>4.5	15		MH	Brown with white and black mottling CLAYEY SILT, very hard, dry to damp (alluvium)	
	20				32/.5' +30/.3' Ref.	>4.5	20		CH	Brown with black and white mottling SILTY CLAY with some coarse sand, very hard, damp (alluvium)	
	17	112			30/.3' Ref.	>4.5	25				
	20				50/.4'		30				
	21	82			50/.5'		35		MH	Tannish brown CLAYEY SILT, very hard, damp (alluvium)	
	23				50/.5'		40		SM	Light brown SILTY SAND, very dense, damp (alluvium)	
	15				50/.2'		45				
	19				50/.3'		50		MH	Reddish brown CLAYEY SILT, very hard, damp (alluvium)	
										Boring terminated at 49.8 feet	



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HIGHWAYS DIVISION

BORING LOGS-11




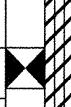








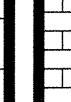


North-South Road
Phase 1B
F.A.I. Proj. No. STP-8930(2)

Date: Feb 21, 2007

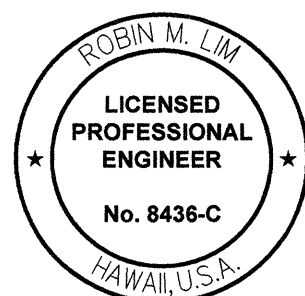
SHEET No. 02.11 OF 27 SHEETS

SURVEY PLOTTED BY	DATE
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TRACED BY	
CHECKED BY	
QUANTITIES BY	
CHECKED BY	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(2)	2007	169	331

		GEOLABS, INC. Geotechnical Engineering				NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJECT NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 109	
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): 79.5 *	
										Description	
UC=101	21	99			50/.5'	4.0			CL	Dark brown with light tan mottling SILTY CLAY, very hard, damp (alluvium)	
	25				+25/.3' Ref.	>4.5				grades with black mottling	
	21	109			32	3.0	5			grades to hard	
					50/.3' Ref.						
	26				30	3.0	10			grades to very hard	
					35/.3' Ref.	4.0	15				
	15				56		20		CL	Brown with white mottling SILTY CLAY with some sand (coralline), hard, damp	
			33	15					ML	Light grayish white SANDY SILT (CORALLINE), hard, dry	
										Whitish gray with light orange mottling LIMESTONE, closely fractured, highly weathered, medium hard (limestone formation)	
26			12		30/.3' Ref.		25		ML	Dark reddish brown fine SANDY SILT, very stiff, damp (alluvium)	
							30				
23					52				SM	Light orange with white mottling SILTY SAND (CORALLINE), dense, dry	
			29	29			35			White with brown mottling SANDSTONE (CORALLINE), moderately weathered, hard (sandstone)	
18			25		45/.5' +10/.0' Ref.				ML	Reddish brown with white mottling SANDY SILT with some sand (coralline), hard, dry	
							40		SM	Whitish brown with white mottling SILTY SAND AND GRAVEL (CORALLINE) with some clay, medium dense, dry	
19			8		18/.5' +10/.0' Ref.				GM	Whitish light tan SILTY GRAVEL AND SAND (CORALLINE), medium dense, dry (coralline detritus)	
							45				
18			10		11				GW	Whitish tan with brown mottling SANDY (CORALLINE) AND GRAVEL (LIMESTONE) in a silt matrix, medium dense, dry (coralline detritus)	
							50				
11					22					Boring terminated at 53 feet	
							55				
Date Started: December 14, 2006								Water Level: ♀ Not Encountered			
Date Completed: December 14, 2006											
Logged By: Y. Chiba								Drill Rig: CME-75			
Total Depth: 53 feet								Drilling Method: 4" Auger & HQ Coring			
Work Order: 3860-30								Driving Energy: 140 lb. wt., 30 in. drop			

GEOLABS, INC. Geotechnical Engineering		NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJECT NO. STP-8930(2) EWA, OAHU, HAWAII					Log of Boring 110				
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): 79 *	
										Description	
UC=92	19	111			42/.5'	4.0			CL	Dark brown with white mottling SILTY CLAY, very hard, damp (alluvium)	
LL=49	21				+10/.0' Ref.	4.0					
PI=30	21	107			65	>4.5	5			grades with white and black mottling	
UC=65					35/.3' Ref.						
	21				28/.5' +20/.3' Ref.	>4.5	10		CL	Brown with white mottling SILTY CLAY, very hard, damp (alluvium)	
	21				30/.5' +25/.3' Ref.	>4.5	15				
	36		15	7	29/.5' +10/.0' Ref.		20		ML	Whitish gray with light tan and light orange mottling SANDY SILT (CORALLINE) with traces of clay, hard, damp	
	27		14		87		25		ML	Whitish tan LIMESTONE (CORALLINE), closely fractured, highly weathered, medium hard (limestone formation)	
									GM	Dark brown fine SANDY SILT, very hard, dry (alluvium)	
	21		24		25		30			Light orange with white mottling SILTY GRAVEL AND SAND (CORALLINE), medium dense, dry	
									CL	Tan with multi-color mottling SANDY CLAY (CORALLINE), very stiff, dry	
	32		48		27	2.0	35				
	21		29		37		40		SM	Light orangish white SILTY SAND (CORALLINE) AND SOME GRAVEL with traces of clay, medium dense, damp	
	14		10		32		45			grades to light grayish white with brown mottling	
	15				22		50		GW	Light grayish white SANDY GRAVEL (CORALLINE) with silt, medium dense, dry (coralline detritus)	
							55			Boring terminated at 52.5 feet	
Date Started: December 15, 2006								Water Level: ♀ Not Encountered			
Date Completed: December 15, 2006											
Logged By: Y. Chiba								Drill Rig: CME-75			
Total Depth: 52.5 feet								Drilling Method: 4" Auger & HQ Coring			
Work Order: 3860-30								Driving Energy: 140 lb. wt., 30 in. drop			



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION

SIGNATURE: *[Signature]* 4-30-08
EXPIRATION DATE OF THE LICENSE
GEOLABS, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

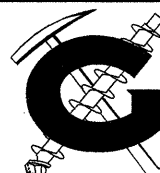
BORING LOGS-12














North-South Road
Phase 1B
F.A.I. Proj. No. STP-8930(2)

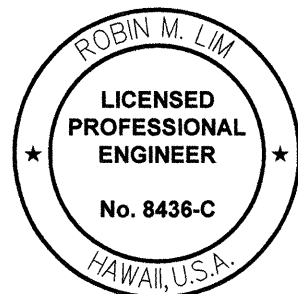
Date: Feb 21, 2007

SHEET No. G2.12 OF 27 SHEETS


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(2)	2007	170	331

		GEOLABS, INC. Geotechnical Engineering				NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 232		
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): 158.5 *		
										Description		
LL=42 PI=22	21	84			33	2.0			CH	Light grayish brown SILTY CLAY, very stiff, damp (alluvium)		
	22				18	2.0				grades to brown		
	24	100			23	1.5	5		CL	Brown SILTY CLAY with fine sand, very stiff, damp (alluvium)		
	20				30/.3' Ref.		10		ML	Orangish brown densely cemented SANDY SILT, very hard, dry (alluvium) grades with some gravel and cobbles (basaltic)		
	15				10/.0' Ref. 26/.3' Ref.		15					
	21				40/.3' Ref.		25		SM	Brown SILTY SAND, very dense, dry (alluvium)		
			57	40			30				Light gray and reddish brown BOULDERS AND COBBLES (BASALTIC) in a clayey silt matrix, very hard (alluvium)	
			28	7			35					
			62	14	20/.2'		40			ML-SM	Reddish brown SANDY SILT with highly weathered gravel, stiff, moist (alluvium)	
											</	

		GEOLABS, INC. Geotechnical Engineering				NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 233	
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): 157.5 *	
										Description	
UC=115	13	91			75	>4.5			CH	Brown SILTY CLAY with traces of sand (coralline and basaltic) and organics. very hard, moist (fill)	
	15				37	>4.5				grades to hard	
	16	90			29/.5' +25/.3' Ref.	>4.5	5		CH	Dark orangish brown with black mottling SILTY CLAY with traces of organics, very hard, moist (alluvium)	
	13				30/.4' Ref.	1.8	10				
	16	99			50/.5' Ref.	3.8	15		CH	Brown and light purplish gray SILTY CLAY AND BOULDERS (BASALTIC), very hard, moist (alluvium)	
	17				19/.2' Ref.	1.5	20		ML-SM	Brown with black mottling fine SANDY SILT, very hard, moist (alluvium)	
	21				27/.3' Ref.		25		SM	Brown with black mottling SILTY FINE SAND, very dense, moist (alluvium)	
	19				37/.5' +28/.3'	2.5	30		MH	Brown CLAYEY SILT with boulders and gravel (basaltic), very hard, moist (alluvium)	
	9				23/.2' Ref.		35				
	18				50/.4' Ref.		40		SM	Dark orangish brown SILTY SAND with traces of clay, very dense, moist (alluvium)	
	17				28/.3' Ref.		45				
	19				79		50			grades with traces of highly to completely weathered gravel (basaltic)	
										Boring terminated at 51.5 feet	
								55			
Date Started: January 25, 2006								Water Level: ∇ Not Encountered			
Date Completed: January 25, 2006											
Logged By: D. Sjolund								Drill Rig: CME-75			
Total Depth: 51.5 feet								Drilling Method: 4" Solid-Stem Auger			
Work Order: 3860-30								Driving Energy: 140 lb. wt., 30 in. drop			



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION




















BORING LOGS-13









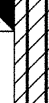

North-South Road
Phase 1B
F.A.I. Proj. No. STP-8930(2)

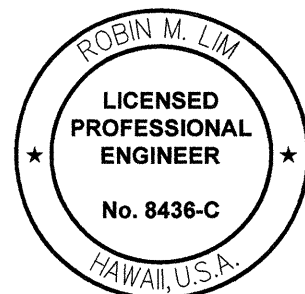
Date: Feb 21, 2007

SHEET No. 02.13 OF 27 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(2)	2007	171	331

		GEOLABS, INC. Geotechnical Engineering					NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 233A	
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): 155.5 *		
										Description		
	15	85			40/.3' Ref.	>4.5			CH	Dark brown with black mottling SILTY CLAY, very hard, dry (alluvium)		
	16				37	>4.5						
					48	>4.5	5			grades to damp		
									CH	Brown SILTY CLAY with very fine sand, hard, damp (alluvium)		
	19				26	3.5	10			grades with rounded gravel (basaltic)		
	12	90			25/.3' Ref.		15		SM	Brown with multi-color mottling SILTY SAND with gravel (basaltic), medium dense, damp (alluvium)		
	11				40/.3' Ref.		20		MH	Brown CLAYEY SILT with fine sand and some rounded gravel (basaltic), very hard, dry (alluvium)		
	19				53		25					
					20/.3' Ref.		30		ML	Brown SANDY SILT with gravel and cobbles, very hard (alluvium)		
										grades with cobbles (basaltic)		
	7				30/.5' +10/.0' Ref.		35		GM	Brown SILTY GRAVEL with sand, very dense, dry (alluvium)		
	17				30/.3' Ref.	>4.5	40		MH	Orangish brown with black mottling CLAYEY SILT with fine friable sand, very hard, damp (alluvium)		
												
	17				30/.3' Ref.	>4.5	45		ML	Orangish brown with black mottling fine SANDY SILT with traces of clay, very hard, dry (alluvium)		
												
	20				35	>4.5	50		ML	Orangish brown with white mottling fine SANDY SILT with traces of clay, very hard, dry (alluvium)		
										Boring terminated at 51.5 feet		
							55					
Date Started: January 9, 2006									Water Level: ∇ Not Encountered			
Date Completed: January 9, 2006												
Logged By: Y. Chiba									Drill Rig: MOBILE B-80			
Total Depth: 51.5 feet									Drilling Method: 4" Auger			
Work Order: 3860-30									Driving Energy: 140 lb. wt., 30 in. drop			

		GEOLABS, INC.				NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 234					
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): 154 *					
										Description					
LL=50 PI=31	14	94			40/.5' +50/.3' Ref.	>4.5			CH	Brown SILTY CLAY, very hard, dry (alluvium)					
	13				75 10/.0' Ref.	>4.5	5								
	16	80													
	18				75	>4.5	10		CH	Brown with white mottling SILTY CLAY with fine sand, very hard, damp (alluvium)					
	14				25/.3' Ref.	>4.5	15		MH	Brown CLAYEY SILT with some gravel (basaltic), very hard, damp (alluvium)					
	16	86			30/.3' Ref.	>4.5	20		MH	Brown CLAYEY SILT with fine sand, very hard, damp (alluvium)					
	20				29/.5' +20/.3' Ref.	>4.5	25		MH	Orangish brown CLAYEY SILT, very hard, damp (alluvium)					
					10/.0' Ref.		30			grades with some cobbles (basaltic)					
					10/.0' Ref.		35			grades with some boulders (basaltic)					
	19				50/.5' +10/.0' Ref.	>4.5	40		CH	Orangish brown with black and white mottling SILTY CLAY, very hard, damp (alluvium)					
	16				30/.3' Ref.	>4.5	45		MH	Orangish brown CLAYEY SILT, very hard, dry (alluvium)					
	20				80	>4.5	50		ML	Orangish brown fine SANDY SILT with some clay, very hard, dry (alluvium)					
										Boring terminated at 51.5 feet					
55															
Date Started: January 10, 2006						Water Level: ∇ Not Encountered									
Date Completed: January 10, 2006															
Logged By: Y. Chiba						Drill Rig: MOBILE B-80									
Total Depth: 51.5 feet						Drilling Method: 4" Auger									
Work Order: 3860-30						Driving Energy: 140 lb. wt., 30 in. drop									



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GEOLABS, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION














BORING LOGS-14



North-South Road
Phase 1B
F.A.I. Proj. No. STP-8930(2)

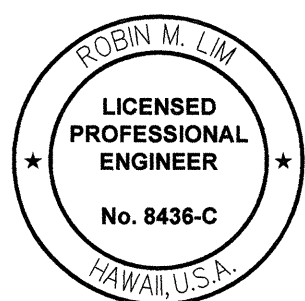
Date: Feb 21, 2007

SHEET No. 62.14 OF 27 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(2)	2007	172	331

		GEOLABS, INC. Geotechnical Engineering				NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 235	
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): 136.5 *	
										Description	
					62	4.0			CH	Orangish brown SILTY CLAY, very hard, dry (alluvium)	
					13				MH	Orangish brown with multi-color mottling CLAYEY SILT with highly weathered coarse sand (basaltic), very hard, dry to damp (alluvium)	
					43	>4.5	5		CH	Orangish brown with gray mottling SILTY CLAY with some rounded gravel (basaltic), very hard, damp (alluvium)	
					25	>4.5	10				
					35/.3' Ref.	>4.5	15		ML	Orangish brown with black mottling fine SANDY SILT, very hard, dry (alluvium)	
					50	3.5	20		CH	Orangish brown SILTY CLAY, hard, damp (alluvium)	
					35/.3' Ref.	>4.5	25		CH	Orangish brown with black mottling SILTY CLAY, very hard, damp (alluvium)	
					10/.0' Ref.	>4.5	30				
					20/.3' Ref.		35				
					30/.3' Ref.	>4.5	40		MH	Orangish brown with black mottling CLAYEY SILT with fine sand, very hard, dry (alluvium)	
					44/.5' +30/.3' Ref.	>4.5	45		CH	Orangish brown SILTY CLAY with fine sand, very hard, damp (alluvium)	
					58	>4.5	50		CH	Orangish dark brown with black and gray mottling SILTY CLAY with some gravel (basaltic), very hard, damp (alluvium)	
										Boring terminated at 51.5 feet	
							55				
Date Started: January 10, 2006								Water Level: ∇ Not Encountered			
Date Completed: January 11, 2006											
Logged By: Y. Chiba								Drill Rig: MOBILE B-80			
Total Depth: 51.5 feet								Drilling Method: 4" Auger			
Work Order: 3860-30								Driving Energy: 140 lb. wt., 30 in. drop			

		GEOLABS, INC. Geotechnical Engineering				NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 236	
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): 140.5 *	
										Description	
					31				MH	Brown CLAYEY SILT, hard, dry (alluvium)	
					26	>4.5					
					36	>4.5	5				
									CH	Orangish brown with multi-color mottling SILTY CLAY with highly weathered sand (basaltic), very hard, dry (alluvium)	
					54	>4.5	10		MH	Orangish brown CLAYEY SILT with very fine sand, very hard, dry (alluvium)	
					10/.0' Ref.		15				
					30/.3' Ref.	>4.5	20		CH	Orangish brown with white mottling SILTY CLAY, very hard, damp (alluvium)	
					15/.0' Ref.	>4.5	25				
					24/.2' Ref.	>4.5	30				
					50/.5' Ref.	3.0	35		ML	Reddish brown CLAYEY SILT with traces of fine sand, very hard, moist (alluvium)	
					30/.2' Ref.	2.0	40				
					53	1.8	45				
					38/.5' +30/.3'	2.0	50				
										Boring terminated at 51.3 feet	
							55				
Date Started: January 11, 2006								Water Level:  Not Encountered			
Date Completed: January 12, 2006								Drill Rig: MOBILE B-80			
Logged By: Y. Chiba & D. Sjolund								Drilling Method: 4" Auger			
Total Depth: 51.3 feet								Driving Energy: 140 lb. wt., 30 in. drop			
Work Order: 3860-30											



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HIGHWAYS DIVISION






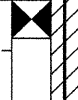


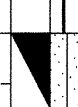




BORING LOGS-15


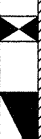











North-South Road
Phase 1B
F.A.I. Proj. No. STP-8930(2)

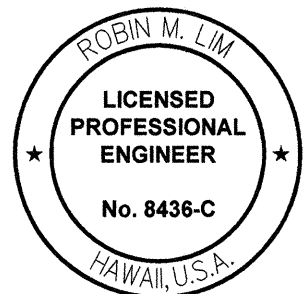
Date: Feb 21, 2007


SHEET No. G2.15 OF 27 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(2)	2007	173	331

 GEOLABS, INC. Geotechnical Engineering		NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII					Log of Boring 237				
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): 135 *	
										Description	
					55	>4.5			CH	Dark brown SILTY CLAY with gravel (basaltic) and traces of sand (coralline and basaltic), hard, moist (fill) grades to very stiff	
					19	>4.5					
					29	>4.5	5		MH	Brown CLAYEY SILT with traces of sand (coralline), very stiff, moist (fill)	
					19	4.0	10		MH	Dark brown CLAYEY SILT with fine sand, very stiff, moist (alluvium)	
					30/.3' Ref.	>4.5	15			grades to very hard	
					41		20		ML	Dark brown CLAYEY SILT with fine sand, very stiff, damp (alluvium)	
					15/.1' Ref.		25			grades to very hard	
					45		30		SM	Dark brown and gray SILTY SAND with traces of highly weathered gravel (basaltic), very dense, moist (alluvium)	
					25/.2' Ref.	3.0	35		ML	Dark brown CLAYEY SILT with fine sand and cobbles (basaltic), very stiff, moist (alluvium)	
					31/.3' Ref.	>4.5	40		CH	Dark brown SILTY CLAY, very hard, moist (alluvium)	
					25/.2' Ref.	>4.5	45				
					22/.3' Ref.	>4.5	50			Boring terminated at 50.3 feet	
							55				
Date Started: January 11, 2006								Water Level: ∇ Not Encountered			
Date Completed: January 11, 2006											
Logged By: D. Sjolund								Drill Rig: CME-75			
Total Depth: 50.3 feet								Drilling Method: 4" Solid-Stem Auger			
Work Order: 3860-30								Driving Energy: 140 lb. wt., 30 in. drop			

		GEOLABS, INC. Geotechnical Engineering				NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 238		
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): 138 *		
										Description		
					15/.0' Ref. 29	>4.5 >4.5			CH	Dark brown and light gray SILTY CLAY with gravel (basaltic) and traces of sand (basaltic), very hard, moist (fill) grades to very stiff		
					50/.4' Ref.	>4.5	5		CH	Dark brown SILTY CLAY with traces of sand (basaltic) and organics, very hard, moist (fill)		
					71	>4.5	10		CH	Dark brown SILTY CLAY with some sand and boulders, very hard, moist (alluvium)		
					50/.5' Ref.		15		SM	Brown SILTY FINE SAND, very dense, damp (alluvium)		
					63		20					
					50/.4' Ref.		25					
					30/.4' Ref.	1.8	30		MH	Brown and orangish brown with black mottling CLAYEY SILT with fine sand, very stiff, moist (alluvium)		
					28/.3' Ref.	1.5	35					
					50/.3' Ref.		40					
					32/.2' Ref.		45					
					22/.3' Ref.	1.3	50			Boring terminated at 50.3 feet		
								55				
Date Started: January 16, 2006					Water Level:  Not Encountered							
Date Completed: January 16, 2006					Drill Rig: CME-75							
Logged By: D. Sjolund					Drilling Method: 4" Solid-Stem Auger							
Total Depth: 50.3 feet					Driving Energy: 140 lb. wt., 30 in. drop							
Work Order: 3860-30												



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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION















BORING LOGS-16














North-South Road
Phase 1B
F.A.I. Proj. No. STP-8930(2)

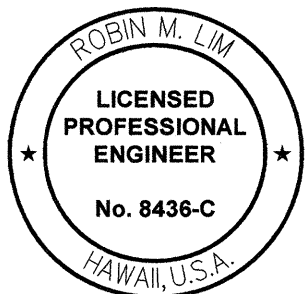
Date: Feb 21, 2007

SHEET No. G2.16 OF 27 SHEETS

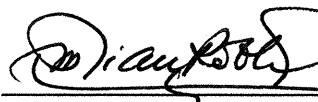
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(2)	2007	174	331

		GEOLABS, INC.					NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII					Log of Boring 239	
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): 64 *			
											Description		
	15				34	>4.5			CH	Dark brown SILTY CLAY with tan-white sand (coralline) and traces of gravel, hard, moist (fill)			
	17	80			78	>4.5				grades to very hard			
	18				38	>4.5	5		CL	Brown SILTY CLAY, hard, moist (alluvium)			
LL=46 PI=28	15	102			37/.5' +29/.3'	>4.5	10			grades to very hard			
			40	17	13/.0' Ref.		15			Light gray, orangish tan and white CORAL, moderately weathered, hard (coral formation)			
			22	18			20						
	14		0	0	46		25						
	4		0	0	18		30			Light gray and white CORAL, moderately weathered, medium hard (coral formation)			
	8		0	0	31		35			grades to tan and white, hard			
	5		19	10	25		40			White and tan CORAL, moderately weathered, hard (coral formation)			
			23	13	13/.0' Ref.		45						
							50			Boring terminated at 50 feet			
							55						
Date Started: January 17, 2006							Water Level: ∇ Not Encountered						
Date Completed: January 17, 2006													
Logged By: D. Sjolund							Drill Rig: CME-75						
Total Depth: 50 feet							Drilling Method: 4" Solid-Stem Auger & HQ Coring						
Work Order: 3860-30							Driving Energy: 140 lb. wt., 30 in. drop						

		GEOLABS, INC. Geotechnical Engineering				NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 240	
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): 64.5 *	
										Description	
	17	107			44/.5' +25/.3'	>4.5			CH	Dark brown SILTY CLAY with gravel (coralline), very hard, moist (fill/alluvium)	
	14				53	>4.5			CH	Dark brown SILTY CLAY, very hard, moist (alluvium)	
	16	93			25/.3' Ref.	>4.5	5				
	18				55	>4.5	10				
	2				18/.1' Ref.		15			White and tan CORAL, moderately weathered, medium hard (coral formation)	
					12/.0' Ref.		20				
	3				28/.3' Ref.		25			White CORAL, moderately to highly weathered, medium hard (coral formation)	
	6				19		30				
	5				26		35				
	5				25		40				
	6				18/.3' Ref.		45				
	6				25		50			Boring terminated at 51.5 feet	
							55				
Date Started: January 12, 2006								Water Level: ∇ Not Encountered			
Date Completed: January 12, 2006											
Logged By: D. Sjolund								Drill Rig: MOBILE B-80			
Total Depth: 51.5 feet								Drilling Method: 4" Solid-Stem Auger			
Work Order: 3860-30								Driving Energy: 140 lb. wt., 30 in. drop			



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BORING LOGS-17

North-South Road
Phase 1B
F.A.I. Proj. No. STP-8930(2)


Date: Feb 21, 2007

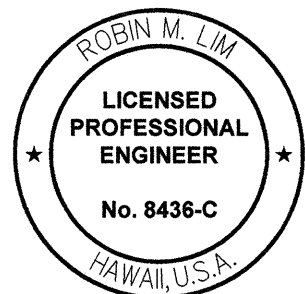
SHEET No. 02.17 OF 27 SHEETS

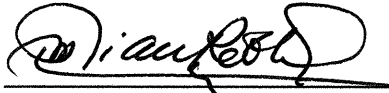
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(2)	2007	175	331

		GEOLABS, INC.				NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII					Log of Boring 241				
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): 66 *					
										Description					
					44	2.5			MH	Brown CLAYEY SILT with traces of sand (coralline), hard, moist (fill)					
					16	2.0				grades to stiff, damp					
					40	>4.5	5		CH	Brown SILTY CLAY with traces of sand, hard, moist (alluvium)					
					19	>4.5	10			grades to very stiff					
									CH	Brown SILTY CLAY, very hard, moist (alluvium)					
		63	18	24/.3' Ref.	>4.5		15			Light tan and white CORAL, moderately weathered, hard (coral formation)					
		60	20				20			grades to white					
		20	8				25								
				21			30								
		24	10				35			White CORAL, moderately weathered, hard (coral formation)					
		14	0	44			40								
		0	0	16			45								
		22	12	15/.4' Ref.			50			Boring terminated at 50.5 feet					
							55								
Date Started: January 17, 2006										Water Level: ∇ Not Encountered					
Date Completed: January 17, 2006															
Logged By: D. Sjolund										Drill Rig: CME-75					
Total Depth: 50.5 feet										Drilling Method: 4" Solid-Stem Auger & HQ Coring					
Work Order: 3860-30										Driving Energy: 140 lb. wt., 30 in. drop					

GEOLABS, INC. DOT: 3860-30 (P.1) GEOLABS DOT: 11/17/06

		GEOLABS, INC.				NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 242		
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): 65 *		
										Description		
LL=45 PI=26	16	89			55	>4.5			CL	Brown SILTY CLAY with traces of sand (coralline and basaltic), hard, moist (fill)		
	15				45	>4.5						
	17	95			50/4' Ref.	>4.5	5		CH	Brown SILTY CLAY, very hard, moist (alluvium)		
	19				47	>4.5	10					
									SM	Brown SILTY FINE AND MEDIUM SAND, very dense, damp (alluvium)		
	13				26/2' Ref.		15			Tan and white CORAL, moderately weathered, hard (coral formation)		
	6			38	0	55		20				
	8			70	56	10/0.0' Ref.		25			Grayish white and yellowish tan CORAL, moderately weathered, hard (coral formation)	
			23	8			30					
0			13	0	24/3.3' Ref.		35					
2			5	0	26		40					
12					12		45					
			29	0			50			Grayish tan to light tan CORAL, moderately weathered, hard (coral formation)		
6					16/3.3' Ref.		50			Boring terminated at 50.8 feet		
								55				
Date Started: January 18, 2006								Water Level: Not Encountered				
Date Completed: January 18, 2006												
Logged By: D. Sjolund								Drill Rig: CME-75				
Total Depth: 50.8 feet								Drilling Method: 4" Solid-Stem Auger & HQ Coring				
Work Order: 3860-30								Driving Energy: 140 lb. wt., 30 in. drop				



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HIGHWAYS DIVISION

BORING LOGS-18
















North-South Road
Phase 1B
F.A.I. Proj. No. STP-8930(2)

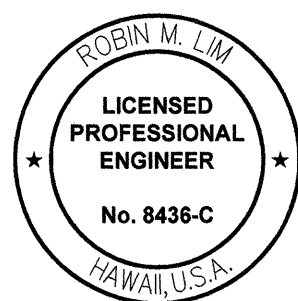
Date: Feb 21, 2007

SHEET No. G2.18 OF 27 SHEETS


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(2)	2007	176	331

GEOLABS, INC. Geotechnical Engineering				NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 243			
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): 66.5 *	
										Description	
					34	>4.5			CH	Brown SILTY CLAY with traces of sand (coralline) and organics, very stiff, moist (fill/alluvium)	
					29	>4.5					
					50/.5' Ref.	>4.5	5		CH	Dark brown SILTY CLAY with traces of fine sand, very hard, moist (alluvium)	
					48	>4.5	10				
					20/.1' Ref.	>4.5	15			Light tan CORAL, moderately weathered, hard (coral formation)	
		25	0		32/.5' +12/.0' Ref.		20				
		53	27		14/.0' Ref.		25			White CORAL, slightly to moderately weathered, hard (coral formation)	
		12	8				30				
					37		35				
		0	0				40				
		0	0				45				
		0	0				50			Grayish tan CORAL, moderately weathered, hard (coral formation)	
					23		55			Boring terminated at 51.5 feet	
Date Started: January 20, 2006								Water Level: ∇ Not Encountered			
Date Completed: January 20, 2006											
Logged By: D. Sjolund								Drill Rig: CME-75			
Total Depth: 51.5 feet								Drilling Method: 4" Solid-Stem Auger & HQ Coring			
Work Order: 3860-30								Driving Energy: 140 lb. wt., 30 in. drop			

<div> GEOLABS, INC. Geotechnical Engineering</div>				NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 244			
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): 68 *	
										Description	
					79	>4.5			CH	Brown with black mottling SILTY CLAY, very hard, moist (alluvium)	
					44	>4.5				grades to hard	
					50/.5' Ref.	>4.5	5			grades to very hard	
					40	>4.5	10		CH	Brown SILTY CLAY, very stiff, moist (alluvium)	
					50/.4' Ref.	>4.5	15			grades to very hard	
										White and light tan CORAL, moderately weathered, hard (coral formation)	
		53	23		14/.0' Ref.		20				
		27	10				25				
					18		30				
		43	17				35			White SILTY GRAVEL (CORALLINE), loose to medium dense, moist (coralline detritus)	
		0	0		10		40				
		0	0		20		45			Light tan CORAL, moderately weathered, hard (coral formation)	
		5	0		16		50			White CORAL, moderately weathered, hard (coral formation)	
					19		55			Boring terminated at 51.5 feet	
Date Started: January 18, 2006										Water Level: ∇ Not Encountered	
Date Completed: January 18, 2006											
Logged By: D. Sjolund										Drill Rig: CME-75	
Total Depth: 51.5 feet										Drilling Method: 4" Solid-Stem Auger & HQ Coring	
Work Order: 3860-30										Driving Energy: 140 lb. wt., 30 in. drop	



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HIGHWAYS DIVISION
















BORING LOGS-19



North-South Road
Phase 1B
F.A.I. Proj. No. STP-8930(2)

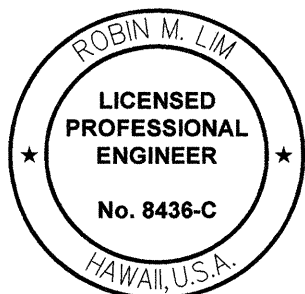
Date: Feb 21, 2007

SHEET No. 62.19 OF 27 SHEETS

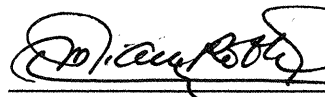
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(2)	2007	177	331

 GEOLABS, INC. Geotechnical Engineering				NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 245			
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): 68 *	
										Description	
					26	>4.5			CH	Brown SILTY CLAY with traces of organics, very stiff, dry to moist (alluvium)	
					18	>4.5				grades to very hard	
					50/4' Ref.	>4.5	5			grades to very hard	
					39	>4.5	10		CH	Brown SILTY CLAY, hard, moist (alluvium)	
					10/0' Ref.	>4.5	15			grades to very hard	
										Orangish brown and tan CORAL, moderately weathered, hard (coral formation)	
					39		20			grades to grayish white	
					25		25			Tannish white CORAL, moderately weathered, hard (coral formation)	
					20		30			grades to grayish white	
					35		35			grades to grayish white	
					26/3' Ref.		40			Boring terminated at 51.5 feet	
					29		45			Boring terminated at 51.5 feet	
					26		50			Boring terminated at 51.5 feet	
							55			Boring terminated at 51.5 feet	
Date Started: January 20, 2006										Water Level: ∇ Not Encountered	
Date Completed: January 20, 2006											
Logged By: D. Sjolund										Drill Rig: CME-75	
Total Depth: 51.5 feet										Drilling Method: 4" Solid-Stem Auger	
Work Order: 3860-30										Driving Energy: 140 lb. wt., 30 in. drop	

 GEOLABS, INC. Geotechnical Engineering		NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII					Log of Boring 246				
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): 68 *	Description
					27	>4.5			CH		Brown SILTY CLAY with traces organics, very stiff, moist (alluvium)
					36	>4.5					grades to hard
					35/3' Ref.	>4.5	5				grades to very hard
					38	>4.5	10		CH		Brown SILTY CLAY, hard, moist (alluvium)
					35/5' Ref.		15		SM		Dark orangish brown SILTY FINE SAND, very dense, damp (alluvium)
											Tan and white CORAL, moderately weathered, hard (coral formation)
					22		20				
			29	0							
					34		25				
			43	14							White CORAL, moderately weathered, hard (coral formation)
					33		30				
			19	10							
					14		35				
			0	0							
					12		40				
			0	0							
			11	0	18/4' Ref.		45				grades to light grayish white
											Grayish white and tan CORAL, moderately weathered, hard (coral formation)
					27		50				
											Boring terminated at 51.5 feet
							55				
Date Started: January 19, 2006								Water Level: ∇ Not Encountered			
Date Completed: January 19, 2006											
Logged By: D. Sjolund								Drill Rig: CME-75			
Total Depth: 51.5 feet								Drilling Method: 4" Solid-Stem Auger & HQ Coring			
Work Order: 3860-30								Driving Energy: 140 lb. wt., 30 in. drop			



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HIGHWAYS DIVISION


BORING LOGS-20

North-South Road
Phase 1B
F.A.I. Proj. No. STP-8930(2)

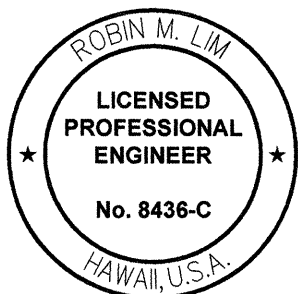
Date: Feb 21, 2007

SHEET No. G2.20 OF 27 SHEETS


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(2)	2007	178	331

		GEOLABS, INC. Geotechnical Engineering		NORTH-SOUTH ROAD, PHASE 1B F.A.I. PROJ. NO. STP-8930(2) EWA, OAHU, HAWAII				Log of Boring 247		
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): 71 *
										Description
					50/.5' Ref. 36	>4.5			CH	Brown SILTY CLAY with traces of sand (coralline and basaltic) and organics, very hard, moist (fill)
					30/.2' Ref.	>4.5	5			grades to hard
										grades to very hard
					40	>4.5	10		CH	Brown SILTY CLAY, very stiff, moist (alluvium)
					30/.3' Ref.	>4.5	15			grades to very hard
		20	8		18/.0' Ref.		20			Tan CORAL, moderately weathered, hard (coral formation)
		31	9		38.5' Ref.		25			grades from tan to white
		9	0		20/.3' Ref.		30			White CORAL, moderately weathered, hard (coral formation)
					16		35			grades to tan
		0	0				40			
		0	0				45			
		0	0				50			
					16		55			Boring terminated at 51.5 feet

Date Started:	January 19, 2006	Water Level:	Not Encountered
Date Completed:	January 19, 2006		
Logged By:	D. Sjolund	Drill Rig:	CME-75
Total Depth:	51.5 feet	Drilling Method:	4" Solid-Stem Auger & HQ Coring
Work Order:	3860-30	Driving Energy:	140 lb. wt., 30 in. drop



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BORING LOGS-21	
North-South Road Phase 1B F.A.I. Proj. No. STP-8930(2)	
Date: Feb 21, 2007	
SHEET No. G2.21 OF 27 SHEETS	