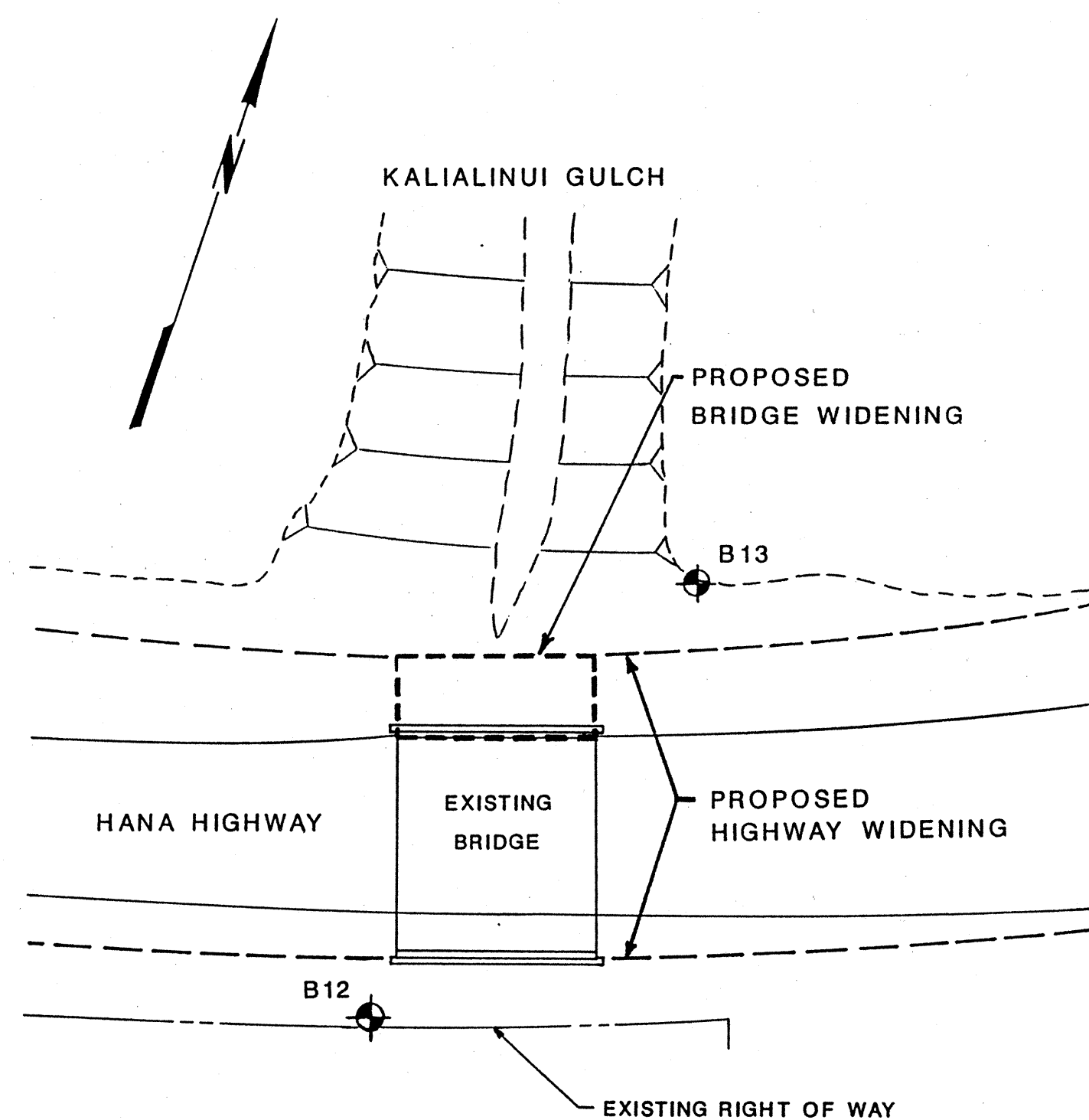


Approximate Location of Borings

Scale: 1" = 1,000'






Scale: 1" = 40'



SITE PLAN

REFERENCE:
SOILS INVESTIGATION
KAHULUI AIRPORT ACCESS ROAD AND
HANA HIGHWAY WIDENING - PHASE 1
KAHULUI, MAUI, HAWAII
STATE PROJECT NO. AM 1061-10

PREPARED BY: ERNEST K. HIRATA & ASSOCIATES
NOVEMBER 10, 1988

NOTE:
BORING LOGS INDICATE THE APPROXIMATE SOIL CONDITIONS
ENCOUNTERED ONLY AT THOSE TIMES AND LOCATIONS WHERE
THE BORINGS WERE MADE AND MAY NOT REPRESENT CONDITIONS
AT OTHER TIMES AND LOCATIONS. BIDDERS SHALL EXAMINE
THE SITE AND THE BORING DATA AND DRAW THEIR OWN CONCLU-
SIONS THEREFROM AS TO THE CHARACTERISTIC OF MATERIALS
TO BE ENCOUNTERED.

BORING NO. B1		(B.L. Sta. 156+90)		DRIVING WT.		140 lb.		DATE OF DRILLING		7-5-88	
SURFACE ELEV.		89.5 ± .4		DROP		30 in.		WATER LEVEL		None	
DEPTH (FEET)	GRAPH SYMBOL	UNIFIED SOIL CLASSIFICATION	BLOWS/FT.	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION (%)	DESCRIPTION				
0		ML-CL	78	89	16		Silty CLAY - Reddish brown, slightly moist, stiff, with few gravels and cobbles.				
5			27/4"	Tip Recovery			Cobble at 5.5 feet.				
10			99	96	25		HIGHLY WEATHERED ROCK - Mottled grayish brown, slightly moist, medium dense to dense.				
15							End boring at 10.5 feet.				

BORING NO. <u>B2</u>		(B.L. Sta. <u>145+85</u>)		DRIVING WT.		<u>140 lb.</u>		DATE OF DRILLING		<u>7-5-88</u>	
SURFACE ELEV.		<u>85.5±</u>		DROP		<u>30 in.</u>		WATER LEVEL		<u>None</u>	
DEPTH (FEET)	SOIL SYMBOL	UNIFIED SOIL CLASSIFICATION	BLOWS/FT.	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	RELATIVE COMPACTION (%)	DESCRIPTION				
0		ML-CL	81	82	19		Silty CLAY - Reddish brown, slightly moist, stiff.				
5			53	86	36		HIGHLY WEATHERED ROCK - Mottled grayish brown, slightly moist, medium dense to dense, clayey.				
			20/No Penetration								
10							End boring at 8.5 feet.				
15											

BORING NO. B3 (B.L. Sta. 138+50)		DRIVING WT.		140 lb.		DATE OF DRILLING		7-6-88							
SURFACE ELEV.		75±		DROP		30 in.		WATER LEVEL		None					
DEPTH (FEET)		SOIL SYMBOL		UNIFIED SOIL CLASSIFICATION		BLOWS/FT.		DRY DENSITY (PCF)		MOISTURE CONTENT (%)		RELATIVE COMPACTION (%)		DESCRIPTION	
0				ML-CL		80		100		22				Silty CLAY - Reddish brown, slightly moist, stiff.	
5				20/No Penetration										Grading with highly weathered rock fragments from 2 feet.	
10														HIGHLY WEATHERED ROCK - Mottled grayish brown, dense to medium hard.	
15														End boring at 8 feet.	

BORING NO. B4 (B.L. Sta. 132+00)		DRIVING WT. 140 lb.		DATE OF DRILLING 7-6-88			
SURFACE ELEV. 68±		DROP 30 in.		WATER LEVEL None			
DEPTH (FEET)	SOIL SYMBOL	UNIFIED SOIL CLASSIFICATION	BLOWS/FT.	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION (%)	DESCRIPTION
0		SM	14/6"				Silty SAND - Light brown, dry, dense, with few gravels. Covered by 6" of brown silty clay.
		ML-CL	54	88	16		
5				53	72	26	Silty CLAY - Mottled brown, slightly moist, stiff, sandy, with highly weathered rock fragments and gravels. Grading to dark brown color and silty from 7 feet.
				60	99	24	
10							End boring at 9.5 feet.
15							

THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

Robert T. Tanaka
10/3/91
ROBERT T. TANAKA
REGISTERED PROFESSIONAL ENGINEER
No. 1754-C
HAWAII, U.S.A.

R. T. TANAKA ENGINEERS, INC.
871 KOLU STREET, SUITE 201
WAILUKU, MAUI, HAWAII 96793

DSGN DRWN CHKD APPD

KEY PLAN / NOTES :

NO DATE REVISIONS

AS-BUILT (Record Drawing)
DATE 7/12/91

This Drawing has been prepared, in part, based upon information furnished by others. While this information is believed to be reliable, the Design Professional cannot assume any responsibility for the accuracy of this As-Built drawing or for any errors or omissions which may have been incorporated into it as a result.

PROJECT TITLE :

HANA HIGHWAY
IMPROVEMENTS

PROJECT NO. :
STATE NO. AM-1061-12
AIP NO. 3-15-0006-

SHEET TITLE :





BORING LOGS


DATE





10-3-88

DWG NO




C-1





BORING NO. B5		(B.L. Sta. 118+95)		DRIVING WT.		140 lb.		DATE OF DRILLING		7-6-88	
SURFACE ELEV.		71±		DROP		30 in.		WATER LEVEL		None	
DEPTH (FEET)	GRAPH SYMBOL	UNIFIED SOIL CLASSIFICATION	BLOWS/FT.	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION (%)	DESCRIPTION				
0		SM					Silty SAND - Light brown, dry, dense. Covered by 6" of brown silty clay.				
5		ML-CL	67	92	18		Silty CLAY - Mottled brown, slightly moist, stiff, sandy, with highly weathered rock fragments and gravels.				
			21	84	20		Grading to dark brown color and silty from 6 feet.				
10			59/7"	81	31		HIGHLY WEATHERED ROCK - Mottled brownish gray, dense to medium hard.				
15							End boring at 10 feet.				




BORING NO. B6 (B.L. Sta. 101+25)		DRIVING WT. 140 lb.		DATE OF DRILLING 7-6-88			
SURFACE ELEV. 66.5±		DROP 30 in.		WATER LEVEL None			
DEPTH (FEET)	GRAIN SYMBOL	UNIFIED SOIL CLASSIFICATION	BLOWS/FT.	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION (%)	DESCRIPTION
0		SM	26				Silty SAND - Light brown, dry, dense. Covered by 12" of brown silty clay.
		ML-CL	13/6"	83	27		Silty CLAY - Reddish brown, slightly moist, stiff, with highly weathered rock fragments and gravels. Grading to dark brown color and silty from 4.5 feet.
5			46	80	33		
				43	80	38	HIGHLY WEATHERED ROCK - Mottled gray and orange brown, moist, dense.
10							End boring at 9.5 feet.
15							

BORING NO. B7 (B.L. Sta. 91+85)		DRIVING WT.		140 lb.		DATE OF DRILLING		7-6-88							
SURFACE ELEV		62.5±		DROP		30 in.		WATER LEVEL		None					
DEPTH (FEET)		SOIL SYMBOL		UNIFIED SOIL CLASSIFICATION		BLOWS/FT.		DRY DENSITY (PCF)		MOISTURE CONTENT (%)		RELATIVE COMPACTION (%)		DESCRIPTION	
0				ML-CL		81		81		25				Silty CLAY - Reddish brown, slightly moist, stiff.	
5						34								Grading with highly weathered rock fragments from 3 feet.	
						26/6"		84		39				HIGHLY WEATHERED ROCK - Mottled dark grayish brown, moist, medium dense to dense.	
10						40		77		46					
														End boring at 10.5 feet.	
15															

BORING NO. B8		(B.L. Sta. 81+05)		DRIVING WT.		140 lb.		DATE OF DRILLING		7-6-88					
SURFACE ELEV.		57±		DROP		30 in.		WATER LEVEL		None					
DEPTH (FEET)		GRAIN SYMBOL		UNIFIED SOIL CLASSIFICATION		BLOWS/FT.		DRY DENSITY (PCF)		MOISTURE CONTENT (%)		RELATIVE COMPACTION (%)		DESCRIPTION	
0				SM										Silty SAND - Light brown, dry, dense. Covered by 6" of brown silty clay.	
5						71		89		27				HIGHLY WEATHERED ROCK - Mottled grayish brown, moist, dense.	
						42/9"		97		15					
						87		96		12				Grading dense to medium hard from 8 feet.	
10														End boring at 10 feet.	
15															

BORING NO. B9 (B.L. Sta. 69+00)		DRIVING WT.		140 lb.		DATE OF DRILLING		7-6-88							
SURFACE ELEV.		36±		DROP		30 in.		WATER LEVEL		None					
DEPTH (FEET)		GRAPH SYMBOL		UNIFIED SOIL CLASSIFICATION		BLOWS/FT.		DRY DENSITY (PCF)		MOISTURE CONTENT (%)		RELATIVE COMPACTION (%)		DESCRIPTION	
0				SM										Silty SAND - Light brown, dry, dense. Covered by 18" of brown silty clay.	
5				ML-CL		34 37/6"		102		10				Silty CLAY - Reddish brown, moist, stiff, with sand.	
														HIGHLY WEATHERED ROCK - Mottled grayish brown, medium hard to hard.	
10														End boring at 8 feet.	
15															

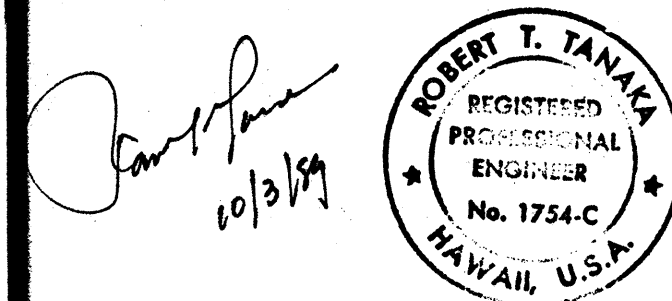
BORING NO. B10 (B.L. Sta. 59+60)		DRIVING WT.		140 lb.		DATE OF DRILLING		7-6-88							
SURFACE ELEV.		22±		DROP		30 in.		WATER LEVEL		None					
DEPTH (FEET)		GRAPH SYMBOL		UNIFIED SOIL CLASSIFICATION		BLOWS/FT.		DRY DENSITY (PCF)		MOISTURE CONTENT (%)		RELATIVE COMPACTION (%)		DESCRIPTION	
0				SM		50		101		11				Silty SAND - Light brown, dry, dense, with few gravels. Covered by 6" of brown silty clay.	
				ML-CL		31 7/8"									
5						22		78		25				Silty CLAY - Mottled brown, slightly moist, stiff, sandy, with highly weathered rock fragments and gravels. Grading to dark brown color and silty from 7 feet.	
						33		95		31					
10														End boring at 9.5 feet.	
15															

BORING NO. B11 (B.L. Sta. 48+35)		DRIVING WT.		140 lb.		DATE OF DRILLING		7-7-88							
SURFACE ELEV.		7±		DROP		30 in.		WATER LEVEL @ 5 ft.							
DEPTH (FEET)		SAMPLE SIGNAL		UNIFIED SOIL CLASSIFICATION		BLOWS/FT.		DRY DENSITY (PCF)		MOISTURE CONTENT (%)		RELATIVE COMPACTION (%)		DESCRIPTION	
0				ML-CL		11		99		29				Silty CLAY - Reddish brown, moist, medium stiff.	
5				SM		3		No Recovery						Grading sandy from 3 feet.	
				ML		16		89		36				Silty SAND - Grayish brown, moist, loose to medium dense.	
10														Clayey SILT - Mottled orange brown, moist, medium stiff.	
15														End boring at 10.5 feet.	

BORING NO. B12 (B.L. Sta. 124+30)		DRIVING WT. 140 lb.		DATE OF DRILLING 7-7-88			
SURFACE ELEV. 68±		DROP 30 in.		WATER LEVEL None			
DEPTH (FEET)	SOIL SYMBOL	UNIFIED SOIL CLASSIFICATION	BLOWS/FT.	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION (%)	DESCRIPTION
0		ML					Clayey SILT - Dark brown, slightly moist, medium stiff to stiff, with gravels and cobbles. Boulders from 1 to 3 feet.
5			7	81	26		
			69	88	30		Grading stiff from 7 feet.
10			62/7"	90	28		
15			62/6"	92	23		
20			60/8"	85	26		Cobble at 18.5 feet.
25							Grading with highly weathered rock fragments from 22 feet.
30			25/2"	Tip Recovery			HIGHLY WEATHERED ROCK - Mottled grayish brown and red, moist, dense to medium hard, clayey.
			89/10"	85	33		
35							End boring at 34 feet.

BORING NO. B13 (B.L. Sta. 125+20)		DRIVING WT. 140 lb.		DATE OF DRILLING 7-7-88			
SURFACE ELEV. 66±		DROP 30 in.		WATER LEVEL None			
DEPTH (FEET)	GRAPH SYMBOL	UNIFIED SOIL CLASSIFICATION	BLOWS/FT.	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION (%)	DESCRIPTION
0		ML					Clayey SILT - Dark brown, slightly moist, medium stiff to stiff, sandy, with gravels and cobbles.
			28	85	14		
5			13	78	31		
10			41/6"	98	25		Grading with cobbles and boulders from 10.5 feet.
15							
20							HIGHLY WEATHERED ROCK - Mottled dark grayish brown, moist, dense to medium hard, clayey.
			48/7"	94	23		
25							
30			60/5"	80	29		Grading to mottled gray and red color from 31 feet.
35			20/No Penetration				End boring at 34.5 feet.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.



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KEY PLAN / NOTES :

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AS-BUILT (Record Drawing)

DATE 7/12/91

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HANA HIGHWAY IMPROVEMENTS

PROJECT NO. :

STATE NO. AM-1061-12
AIP NO. 3-15-0006-

SHEET TITLE :

BORING LOGS

DATE

10-3-89

DWG. NO.

C-2