

: M	IAJOR DIVISIOI	VS	GROU SYMBO		TYPICAL NAMES
	GRAVELS (More than	CLEAN GRAVELS	-	GW	Well graded gravels, gravel—sand mixtures, little or no fines.
	50% of coarse	(Little or no fines.)		GP	Poorly graded gravels or gravel—sand mixtures, little or no fines.
COARSE GRAINED	fraction is LARGER than the No. 4	GRAVELS WITH FINES (Appreciable	╤┈╤┈╤ ╟╪╵╪ ╬╵╪╵╪	GM	Silty gravels, gravel-sand-silt mixtures.
SOILS (More than 50% of the	sieve size.)	amt. of fines.)		GC	Clayey gravels, gravel—sand—clay mixtures.
material is ARGER than	SANDS (More than	CLEAN SANDS		SW	Well graded sands, gravelly sands, little or no fines.
No. 200 sieve size.)	50% of coarse	(Little or no fines.)		SP	Poorly graded sands or gravelly sands, little or no fines.
	fraction is SMALLER than the	SANDS WITH FINES (Appreciable		SM	Silty sands, sand-silt mixtures.
	No. 4 sieve size.)	amt. of fines.)		SC	Clayey sands, sand-clay mixtures.
				ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
FINE GRAINED	SILTS AND CLAYS (Liquid limit			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
SOILS (More than	LESS th	nan 50.)	1 1 1 1 1 1 1 1 1 1	OL	Organic silts and organic silty clays of low plasticity.
50% of the material is SMALLER	C// TC AA	1D 01 1 10		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
than No. 200 sieve	(Liquid lim	ID CLAYS it GREATER 50.)		СН	Inorganic clays of high plasticity, fat clays.
size.)		· •		ОН	Organic clays of medium to high plasticity, organic silts.
HIGH	LY ORGANIC S	SOILS	Ψ Ψ Ψ	PT	Peat and other highly organic soils.
			+ + + + + + + + + + + + + + + + + + +	FRES	SH TO MODERATELY WEATHERED BASALT
				VOL	CANIC TUFF / HIGHLY TO COMPLETELY WEATHERED BASALT
				COR.	AL
			SAMPL	E DE	FINITION
2" O.D.	Standard Spl	it Spoon Sam	pler [$\leq s$	helby Tube RQD Rock Quality Designation
3" O.D.	Split Tube So	ampler		[X / 4" Coring \(\sum_{=} \) Water Level
W.O. 07-	-4430			Но	nokaa Baseyard Improvements
irata & Asso	ociates, Inc.		F	? <i>OF</i>	RING LOG LEGEND

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HIRAIA	Xr I	$A \subseteq \subseteq A$	/	11	///// ·
HIRATA	CX. r	コンンレバ		$H_{-}U_{\bullet}$	11.4 ().
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FISCAL SHEET TOTAL YEAR NO. SHEETS HAWAII HAW. HWY-H-05-06 2008 62

						BORING LOG	W.	0. <u>07</u> –4430
RING NO RFACE ELEV		B1		DRIVING WT.	140 lb. 30 in.	START DATE END DATE	4/24/07 4/24/07	
) - - -	G R A P H	S A M P L E	BLOWS PER FOOT	DRY DENSITY (PCF)	MOIST. CONT. (%)		DESCRIPTION	
,						Clayey SILT (MH) — I (Volcanic Ash) Covered by 2 inch	nes of asphaltic cor	

D E P T H	G R A P H	AMPLE	BLOWS PER FOOT	DRY DENSITY (PCF)	MOIST. CONT. (%)	DESCRIPTION
- 0			19	32	142	Clayey SILT (MH) — Brown, moist, medium stiff. (Volcanic Ash) Covered by 2 inches of asphaltic concrete over 5 inches of base course.
- 5			15	36	112	
- 10-			15	64	67	Completely weathered rock fragments at 9 feet.
						WEATHERED ROCK (WH-WC) — Mottled brown, moist, dense to medium hard, highly to completely weathered.
15—			32/6" 50/1"	<i>88</i>	41	
			10/No Pe	netration		
20—						End boring at 19 feet.
25—						Neither groundwater nor seepage water encountered.
						* Elevations based on Topographic Survey Map prepared by M&E Pacific, Inc.
-30-		l				Plate A4.1



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BORING LOGS

HONOKAA BASEYARD IMPROVEMENTS

Project No. HWY-H-05-06

Scale: As Noted Date: May 2008 SHEET No. B-2 OF B-4 SHEETS

72 91

10/No Penetration

-20-

ROPING LOC

					Ĕ	BURING LUG		W.O. <u>07-443</u>
BORIN	G NO		<i>B2</i>	·	DRIVING WT.	140 lb.	START DATE	4/24/07
SURFA	ICE ELE	V	1111.	<u>+</u>	DROP	30 in.	END DATE	4/24/07
D E P T H	G R A P H	SAMPLE	BLOWS PER FOOT	DRY DENSITY (PCF)	MOIST. CONT. (%)		DESCRIPTION	
	# # # # # # # # #		32	74	38	dense, with san	 Gray, moist, me d. aches of asphlatic of 	

$\begin{bmatrix} H \\ O \end{bmatrix}$	Н	Ē				
	* * * * * * *		32	74	<i>38</i>	Silty GRAVEL (GM) — Gray, moist, medium dense to dense, with sand. Covered by 2 inches of asphlatic concrete over 6 inches of base course.
— <i>5</i> —			66	72	30	6 inches of base course. WEATHERED ROCK (WH-WC) — Mottled brown, moist, medium dense to dense, highly to completely weathered. Dense to medium hard from 4 feet.

Hard	from	13	feet.	

End boring at 15 feet.

Noither	ara, n du,	tor nor	0000000	wator	encountei	rad

25		
— <i>30</i> —		Plate A4.2

		<i>B0</i>	RING LOG	W.	0. <u>07–4430</u>
BORING NO	<i>B3</i>	_ DRIVING WT	140 lb.	START DATE	4/24/07
SURFACE ELEV	1113.5±	_ <i>DROP</i>	30 in.	END DATE	4/24/07
D G A M P I	BLOWS DRY PER DENSI FOOT (PCF	TY CONT.		DESCRIPTION	

			· ·		
D G E R P A T P H H	P	BLOWS PER FOOT	DRY DENSITY (PCF)	MOIST. CONT. (%)	DESCRIPTION
		18	80	17	Silty GRAVEL (GM) — Gray, slightly moist, medium dense, with sand. Covered by 2 inches of asphaltic concrete over 3.5 inches of base course.
 	#	16	67	25	
_ 5 _		8	37	113	Clayey SILT (MH) — Brown, moist, medium stiff. (Volcanic Ash)
					WEATHERED ROCK (WH-WC) — Mottled brown, moist, medium dense, highly to completely weathered.
- 10-		12	75	41	
					Dense to medium hard from 11 feet.
- 15		10/No Pe	netration		
		50/4"	102	12	
					End boring at 18.5 feet.
- 20					
-25					Neither groundwater nor seepage water encountered.
					Training ground action from Soupergo water encountered.
- 30-					Plate A4.3

LICENSED PROFESSIONAL ENGINEER

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BORING LOGS

HONOKAA BASEYARD IMPROVEMENTS

Project No. HWY-H-05-06

Date: May 2008 Scale: As Noted SHEET No. B-3 OF B-4 SHEETS

FED. ROAD DIST. NO. STATE FED. AID PROJ. NO. FISCAL SHEET NO. SHEE

BORING NO. ___ DRIVING WT. _____140 lb. START DATE _____4/23/07 SURFACE ELEV. _ *1111.5±* DROP_ END DATE 4/23/07 BLOWS PER FOOT DRY DENSITY (PCF) MOIST. CONT. (%) DESCRIPTION Silty GRAVEL (GM) — Gray, slightly moist, medium dense to dense, with sand. Covered by 1 inch of asphaltic concrete over 12 inches of base course. WEATHERED ROCK (WH—WC) — Mottled brown, moist, medium dense, highly to completely weathered. *60* 79 *30* Dense to medium hard from 7 feet. 27/6" 107 50/No Penetration □ 31/6" 109 50/No Penetration 20 End boring at 15 feet. Neither groundwater nor seepage water encountered.

BORING LOG

W.O. <u>07-4430</u>

Plate A4.4_

LICENSED PROFESSIONAL ENGINEER
No. 5299-C

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

BORING LOGS

HONOKAA BASEYARD IMPROVEMENTS

Project No. HWY-H-05-06

Scale: As Noted

Date: May 2008

SHEET No. B-4 OF B-4 SHEETS

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HIRATA & ASSOCIATES

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