

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-02-21	2022	25	25

MAJOR DIVISIONS			GROUP DIVISIONS	TYPICAL NAMES
COARSE GRAINED SOILS (More than 50% of the material is LARGER than No. 200 sieve size.)	GRAVELS (More than 50% of coarse fraction is LARGER than the No. 4 sieve size.)	CLEAN GRAVELS (Little or no fines.)	GW	Well graded gravels, gravel-sand mixtures, little or no fines.
			GP	Poorly graded gravels or gravel-sand mixtures, little or no fines.
		GRAVELS WITH FINES (Appreciable amt. of fines.)	GM	Silty gravels, gravel-sand-silt mixtures.
	SANDS (More than 50% of coarse fraction is SMALLER than the No. 4 sieve size.)	CLEAN SANDS (Little or no fines.)	SW	Well graded sands, gravelly sands, little or no fines.
			SP	Poorly graded sands or gravelly sands, little or no fines.
		SANDS WITH FINES (Appreciable amt. of fines.)	SM	Silty sands, sand-silt mixtures.
FINE GRAINED SOILS (More than 50% of the material is SMALLER than No. 200 sieve size.)	SILTS AND CLAYS (Liquid limit LESS than 50.)		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.
			CL	Inorganic clays of high plasticity, lean clays.
	SILTS AND CLAYS (Liquid limit GREATER than 50.)		OL	Organic silts and organic silty clays of low plasticity.
			MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays.
HIGHLY ORGANIC SOILS		OH	Organic clays of medium to high plasticity, organic silts.	
		PT	Peat and other highly organic silts.	
FORMATIONS				FRESH TO MODERATELY WEATHERED BASALT
				VOLCANIC TUFF / HIGHLY TO COMPLETELY WEATHERED BASALT
				CORAL

SAMPLE DEFINITION		
2" O.D. Standard Split Spoon Sampler	Shelby Tube	RQD: Rock Quality Designation
3" O.D. Split Tube Sampler	Core Sample	Water Table

	HIRATA & ASSOCIATES, INC. Geotechnical Engineering W.O. 21-6595	BORING LOG LEGEND	Plate A3.1
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PLASTICITY CHART

GRADATION CHART

COMPONENT DEFINITIONS BY GRADATION	
COMPONENT	SIZE RANGE
Boulders	Above 12 in.
Cobbles	3 in. to 12 in.
Gravel	3 in. to No. 4 (4.76 mm)
Coarse	3 in. to 3/4 in.
Fine Gravel	3/4 in. to No. 4 (4.76 mm)
Sand	No. 4 (4.76 mm) to No. 200 (0.074mm)
Coarse Sand	No. 4 (4.76 mm) to No. 10 (2.0 mm)
Medium Sand	No. 10 (2.0 mm) to No. 40 (0.42 mm)
Fine Sand	No. 40 (0.42 mm) to No. 200 (0.074 mm)
Silt and Clay	Smaller than No. 200 (0.074 mm)

	HIRATA & ASSOCIATES, INC. Geotechnical Engineering W.O. 21-6595	UNIFIED SOIL CLASSIFICATION SYSTEM	Plate A3.2
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Boring No. B1

PROJECT NAME: HDOT Kakoi and Keehi Baseyard Improvements
WORK ORDER NO.: 21-6595 DRIVING WT.: 140 lb. START DATE: 2/1/21
SURFACE ELEV.: 4 ±" DROP: 30 in. END DATE: 2/1/21

REMARKS/ SAMPLE NO.	CORE RECOVERY (%)	ROD (%)	BLOWS PER FOOT (pcf)	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	DEPTH (ft)	GRAPHIC LOG	SAMPLE	MATERIAL DESCRIPTION
			4/6" 50/5"	106	23	23			Silty GRAVEL (GM) - Brown, moist, medium dense, with sand and AC fragments. (Fill) Covered by 3 inches of AC over 5 inches of base material. Groundwater encountered at 2.9 feet on 2/1/21 at 10:50 am.
			33	116	15	5			Silty Coralline GRAVEL (GM) - Tan, medium dense, with sand.
			23	106	21	10			End boring at 9.5 feet.
* Elevation based on topographic survey maps provided by The Limtiaco Consulting Group on 1/22/2021.									

Plate A4.1

Note:
Boring log data included for information only

Boring No. B2

PROJECT NAME: HDOT Kakoi and Keehi Baseyard Improvements
WORK ORDER NO.: 21-6595 DRIVING WT.: 140 lb. START DATE: 2/2/21
SURFACE ELEV.: 3.5 ± DROP: 30 in. END DATE: 2/2/21

REMARKS/ SAMPLE NO.	CORE RECOVERY (%)	ROD (%)	BLOWS PER FOOT (pcf)	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	DEPTH (ft)	GRAPHIC LOG	SAMPLE	MATERIAL DESCRIPTION
Lost Recovery			33	103	20	5			Silty GRAVEL (GM) - Dark brown, moist, medium dense, with sand. (Fill) Covered by 2 inches of AC over 3.5 inches of base material. Metal shards at 1 foot. Cobble at 3 feet.
			40	110	16	5			Silty Coralline GRAVEL (GM) - Tan, medium dense to dense, with sand. Groundwater encountered at 3.2 feet on 2/2/21 at 11:00 am.
			54	94	38	10			End boring at 10.5 feet.

Plate A4.2

Boring No. B3

PROJECT NAME: HDOT Kakoi and Keehi Baseyard Improvements
WORK ORDER NO.: 21-6595 DRIVING WT.: 140 lb. START DATE: 2/2/21
SURFACE ELEV.: 4 ± DROP: 30 in. END DATE: 2/2/21

REMARKS/ SAMPLE NO.	CORE RECOVERY (%)	ROD (%)	BLOWS PER FOOT (pcf)	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	DEPTH (ft)	GRAPHIC LOG	SAMPLE	MATERIAL DESCRIPTION
			104/8"	116	14	5			Clayey GRAVEL (GC) - Dark brown, moist, dense, with sand. (Fill) Covered by 3 inches of AC over 3 inches of base material.
			23	105	21	5			Groundwater encountered at 4.6 feet on 2/1/21 at 9:20 am.
			24	100	25	10			Silty Coralline GRAVEL (GM) - Tan, medium dense, with sand.
						10			End boring at 10.5 feet.

Plate A4.3

Boring No. B4

PROJECT NAME: HDOT Kakoi and Keehi Baseyard Improvements
WORK ORDER NO.: 21-6595 DRIVING WT.: 140 lb. START DATE: 2/1/21
SURFACE ELEV.: 3.5 ± DROP: 30 in. END DATE: 2/1/21

REMARKS/ SAMPLE NO.	CORE RECOVERY (%)	ROD (%)	BLOWS PER FOOT (pcf)	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	DEPTH (ft)	GRAPHIC LOG	SAMPLE	MATERIAL DESCRIPTION
NP = No Penetration			10/NP	10/NP		5			Clayey GRAVEL (GC) - Dark brown, moist, dense, with sand. (Fill) Covered by 3 inches of AC over 5 inches of base material.
			29/6" 50/3"	98	22	5			Silty Coralline GRAVEL (GM) - Tan, dense, with sand. Groundwater encountered at 2.9 feet on 2/1/21 at 9:10 am.
			38	114	17	10			End boring at 10.5 feet.

Plate A4.4

SURVEY PLOTTED BY: _____ DATE: _____
DRAWN BY: _____
DESIGNED BY: _____
NOTE BOOK QUANTITIES BY: _____
CHECKED BY: _____
N: _____

BORING LOGS.DWG 2/28/2022 12:55:23 PM

	STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION BORING LOGS EROSION CONTROL AND BEST MANAGEMENT PRACTICES FOR STORM WATER PERMIT COMPLIANCE PHASE 2 Project No. HWY-O-02-21 Scale: None Date: April 2022
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