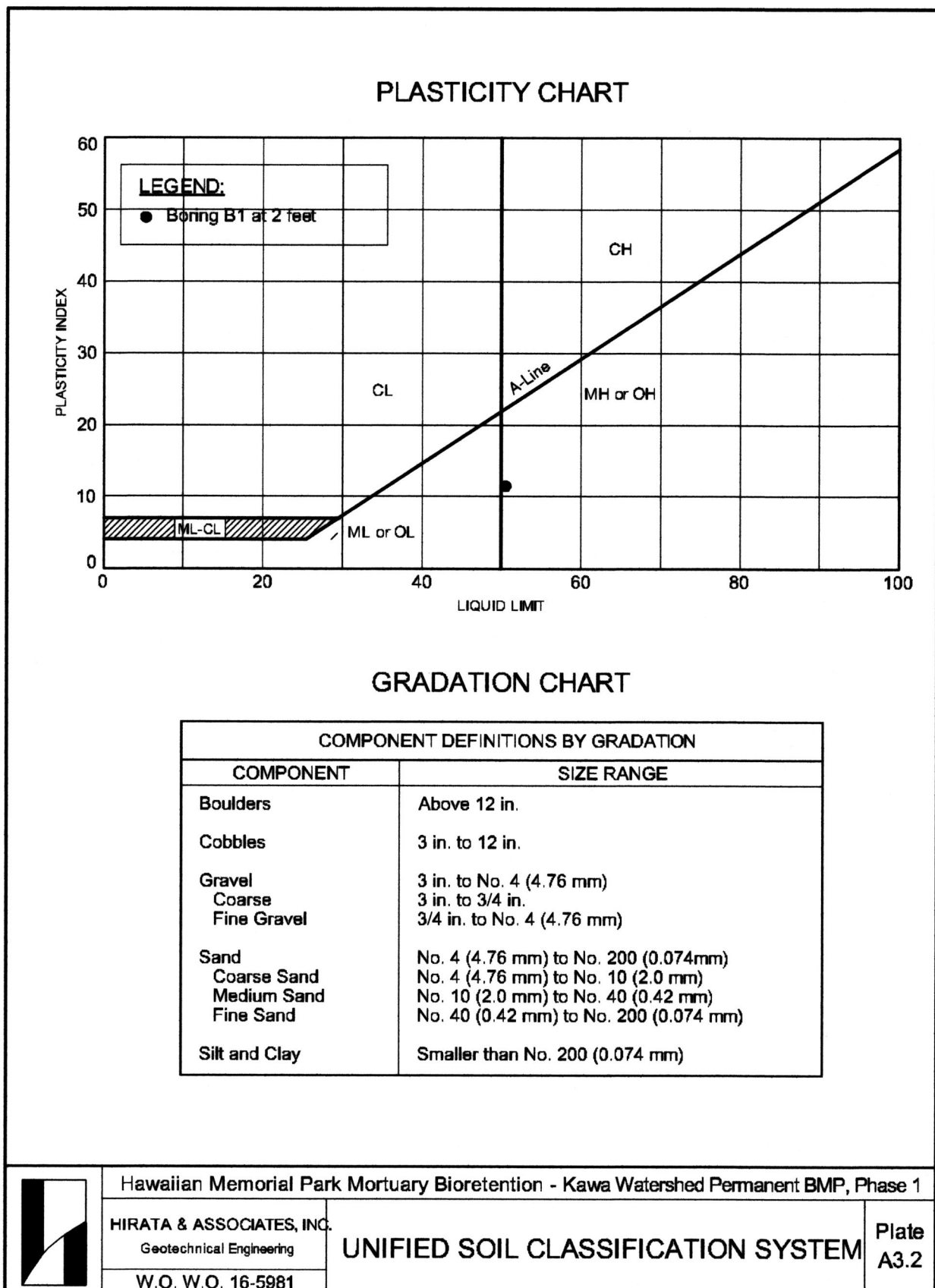


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83G-01-17M	2017	25	48

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.		
		GM Silty gravels, gravel-sand-silt mixtures.		
		GC Clayey gravels, gravel-sand-clay mixtures.		
		SW Well graded sands, gravelly sands, little or no fines.		
	SANDS (More than 50% of coarse fraction is smaller than the No. 4 sieve size.)	CLEAN SANDS (Little or no fines.)	SP Poorly graded sands or gravelly sands, little or no fines.	
		SM Silty sands, sand-silt mixtures.		
		SC Clayey sands, sand-clay 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.)	CL Inorganic clays of high plasticity, lean clays.
				OL Organic silts and organic silty clays of low plasticity.
SILTS AND CLAYS (Liquid limit GREATER than 50.)	MH Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.			
	CH Inorganic clays of high plasticity, fat clays.			
HIGHLY ORGANIC SOILS	PT Peat and other highly organic silts.			
	FORMATIONS	FRESH TO MODERATELY WEATHERED BASALT		
VOLCANIC TUFF / HIGHLY TO COMPLETELY WEATHERED BASALT				
CORAL				

SAMPLE DEFINITION			
<input checked="" type="checkbox"/> 2" O.D. Standard Split Spoon Sampler	<input checked="" type="checkbox"/> Shelby Tube	RQD: Rock Quality Designation	
<input type="checkbox"/> 3" O.D. Split Tube Sampler	<input type="checkbox"/> Core Sample	<input type="checkbox"/> Water Table	

	Hirata & Associates, Inc. Geotechnical Engineering W.O. W.O. 16-5981	BORING LOG LEGEND	Plate A3.1
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Boring No. B1

Hirata & Associates, Inc.  
GEOTECHNICAL ENGINEERING

BORING LOG

PROJECT NAME: Hawaiian Memorial Park Mortuary Bioretention - Kawa Watershed Permanent BMP, Phase 1  
WORK ORDER NO. W.O. 16-5981 DRIVING WT. 140 lb. START DATE 8/22/16  
SURFACE ELEV. 268.5 ± DROP 30 in. END DATE 8/22/16

REMARKS/ OTHER TESTS	CORE RECOVERY (%)	RQD (%)	BLOWS PER FOOT	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	DEPTH (ft)	GRAPHIC LOG	SAMPLE	MATERIAL DESCRIPTION
			43	75	42	1			Clayey SILT (MH) - Brown, moist, stiff
			42	69	49	5			
			32	64	57	10			
			24	68	55	15			
			34	66	52	20			
			23	61	59	25			WEATHERED ROCK (WC) - Mottled brown, moist, medium stiff, completely weathered. (Clayey Silt with Weathered Rock Fragments)
			18	59	48	30			End boring at 26.5 feet.
						35			Neither groundwater nor seepage water encountered.

\* Elevation based on topographic survey map provided by The Limbaco Consulting Group on July 27, 2016. Plate A4.1

Boring No. B2

Hirata & Associates, Inc.  
GEOTECHNICAL ENGINEERING

BORING LOG

PROJECT NAME: Hawaiian Memorial Park Mortuary Bioretention - Kawa Watershed Permanent BMP, Phase 1  
WORK ORDER NO. W.O. 16-5981 DRIVING WT. 140 lb. START DATE 8/23/16  
SURFACE ELEV. 267 ± DROP 30 in. END DATE 8/23/16

REMARKS/ OTHER TESTS	CORE RECOVERY (%)	RQD (%)	BLOWS PER FOOT	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	DEPTH (ft)	GRAPHIC LOG	SAMPLE	MATERIAL DESCRIPTION
			31	69	54	1			Clayey SILT (MH) - Brown, moist, stiff
			29	70	54	5			
			22	76	45	10			Medium stiff from 9 feet
			10	64	62	15			
			8	57	63	20			End boring at 15.5 feet.
						25			Neither groundwater nor seepage water encountered.

Plate A4.2

Boring No. B3

Hirata & Associates, Inc.  
GEOTECHNICAL ENGINEERING

BORING LOG

PROJECT NAME: Hawaiian Memorial Park Mortuary Bioretention - Kawa Watershed Permanent BMP, Phase 1  
WORK ORDER NO. W.O. 16-5981 DRIVING WT. 140 lb. START DATE 8/23/16  
SURFACE ELEV. 262 ± DROP 30 in. END DATE 8/23/16

REMARKS/ OTHER TESTS	CORE RECOVERY (%)	RQD (%)	BLOWS PER FOOT	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	DEPTH (ft)	GRAPHIC LOG	SAMPLE	MATERIAL DESCRIPTION
			9	75	40	1			Clayey SILT (MH) - Brown, moist, medium stiff to stiff
			10	62	59	5			Medium stiff from 2 feet
			10	58	53	10			WEATHERED ROCK (WC) - Mottled brown, moist, medium stiff, completely weathered. (Clayey Silt with Weathered Rock Fragments)
			6	56	54	15			Firm at 9 feet
			14	57	54	20			End boring at 15.5 feet.
						25			Neither groundwater nor seepage water encountered.

Plate A4.3

Note:  
Boring log data included for information only.

	STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION <b>BORING LOGS</b> KAWA WATERSHED STORM WATER BEST MANAGEMENT PRACTICES ON OAHU, PHASE 1 Project No. 83G-01-17M Scale: Not to Scale Date: April 2017 SHEET No. EC-14 OF 20 SHEETS
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