APPENDIX A

APPENDIX A

Field Exploration

We explored the subsurface conditions by drilling and sampling five borings, designated as Boring Nos. 1 through 5, to depths of about 15.5 to 21.5 feet below the existing ground surface at the approximate locations shown on the Site Plans, Plates 2.1 through 2.5. We used a truck-mounted drill rig equipped with solid-stem augers and rotary coring tools.

Our geologists classified the materials encountered in the borings by visual and textural examination in the field in general accordance with ASTM D2488, Standard Practice for Description and Identification of Soils, and monitored the drilling operations on a near-continuous (full-time) basis. These classifications were further reviewed visually and by testing in the laboratory. Soils were classified in general accordance with ASTM D2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System), as shown on the Soil Log Legend, Plate A-0.1. Deviations made to the soil classification in accordance with ASTM D2487 are described on the Soil Classification Log Key, Plate A-0.2. Graphic representations of the materials encountered are presented on the Logs of Borings, Plates A-1 through A-5.

Relatively "undisturbed" soil samples were obtained in general accordance with ASTM D3550, Ring-Lined Barrel Sampling of Soils, by driving a 3-inch OD Modified California sampler with a 140-pound hammer falling 30 inches. In addition, some samples were obtained from the drilled borings in general accordance with ASTM D1586, Penetration Test and Split-Barrel Sampling of Soils, by driving a 2-inch OD standard penetration sampler using the same hammer and drop. The blow counts needed to drive the sampler the second and third 6 inches of an 18-inch drive are shown as the "Penetration Resistance" on the Logs of Borings at the appropriate sample depths. The penetration resistance shown on the Logs of Borings indicates the number of blows required for the specific sampler type used. The blow counts may need to be factored to obtain the Standard Penetration Test (SPT) blow counts.

Pocket penetrometer tests were performed on selected cohesive soil samples in the field. The pocket penetrometer test provides an indication of the unconfined compressive strength of the sample. Pocket penetrometer tests results are summarized on the Logs of Borings at the appropriate sample depths.

Core samples of the rock materials encountered at the project sites were obtained by using diamond core drilling techniques in general accordance with ASTM D2113, Diamond Core Drilling for Site Investigation. Core drilling is a rotary drilling method that uses a hollow bit to cut into the rock formation. The rock material left in the hollow core of the bit is mechanically recovered for examination and description. Rock cores were described in general accordance with the Rock Description System, as shown on the Rock Log Legend, Plate A-0.3. The Rock Description System is based on the publication "Suggested Methods for the Quantitative Description of Discontinuities in Rock Masses" by the International Society for Rock Mechanics (March 1977).

Recovery (REC) is used as a subjective guide to the interpretation of the relative quality of rock masses. Recovery is defined as the actual length of material recovered from a coring attempt versus the length of the core attempt. For example, if 4 feet of material is recovered from a 5-foot core run, the recovery would be 80 percent and would be shown on the Logs of Borings as REC = 80%.

The Rock Quality Designation (RQD) is also a subjective guide to the relative quality of rock masses. RQD is defined as the percentage of the core run in rock that is sound material in excess of 4 inches in length without any discontinuities, discounting any drilling-induced fractures or breaks. If 2.5 feet of sound material is recovered from a 5-foot core run in rock, the RQD would be 50 percent and would be shown on the Logs of Borings as RQD = 50%. Generally, the following is used to describe the relative quality of the rock, based on the "Practical Handbook of Physical Properties of Rocks and Minerals."

Rock Quality	<u>RQD</u> (%)
Very Poor	0 – 25
Poor	25 – 50
Fair	50 – 75
Good	75 – 90
Excellent	90 - 100

The excavation characteristic of a rock mass is a function of the relative hardness of the rock, its relative quality, brittleness, and fissile characteristics. A dense rock formation with a high RQD value would be very difficult to rip and would probably require more arduous methods of excavation.



Geotechnical Engineering

Soil Log Legend

	MAJOR DIVISION	IS	US	CS	TYPICAL DESCRIPTIONS
	GRAVELS	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
COARSE-	GRAVELS	LESS THAN 5% FINES	0000	GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
GRAINED SOILS	MORE THAN 50% OF COARSE	GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
	FRACTION RETAINED ON NO. 4 SIEVE	MORE THAN 12% FINES		GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SANDS	CLEAN SANDS	0	SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
MORE THAN 50% OF MATERIAL	SANDS	LESS THAN 5% FINES		SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
RETAINED ON NO. 200 SIEVE	50% OR MORE OF COARSE FRACTION PASSING	SANDS WITH FINES		SM	SILTY SANDS, SAND-SILT MIXTURES
	THROUGH NO. 4 SIEVE	MORE THAN 12% FINES		SC	CLAYEY SANDS, SAND-CLAY MIXTURES
	0.11 TO			ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
FINE- GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
00120				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
				МН	INORGANIC SILT, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
50% OR MORE OF /ATERIAL PASSING THROUGH NO. 200 SIEVE	SILTS AND CLAYS	LIQUID LIMIT 50 OR MORE		СН	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HI	GHLY ORGANIC S	DILS	<u></u>	РТ	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

(2-INCH) O.D. STANDARD PENETRATION TEST LL LIQUID LIMIT (NP=NON-PLASTIC) (3-INCH) O.D. MODIFIED CALIFORNIA SAMPLE PLASTICITY INDEX (NP=NON-PLASTIC) ΡI X SHELBY TUBE SAMPLE ΤV TORVANE SHEAR (tsf) G GRAB SAMPLE UC UNCONFINED COMPRESSION OR UNIAXIAL COMPRESSIVE STRENGTH Π CORE SAMPLE TXUU UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION (ksf) $\overline{\nabla}$ WATER LEVEL OBSERVED IN BORING AT TIME OF DRILLING Ţ WATER LEVEL OBSERVED IN BORING AFTER DRILLING Ţ WATER LEVEL OBSERVED IN BORING OVERNIGHT

A-0.1

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Soil Classification Log Key (with deviations from ASTM D2488)

GEOLABS, INC. CLASSIFICATION*											
GRANULAR SOIL (- #200 <50%)	COHESIVE SOIL (- #200 ≥ 50%)										
 PRIMARY constituents are composed of the largest percent of the soil mass. Primary constituents are capitalized and bold (i.e., GRAVEL, SAND) 	 PRIMARY constituents are based on plasticity. Primary constituents are capitalized and bold (i.e., CLAY, SILT) 										
• SECONDARY constituents are composed of a percentage less than the primary constituent. If the soil mass consists of 12 percent or more fines content, a cohesive constituent is used (SILTY or CLAYEY); otherwise, a granular constituent is used (GRAVELLY or SANDY) provided that the secondary constituent consists of 20 percent or more of the soil mass. Secondary constituents are capitalized and bold (i.e., SANDY GRAVEL, CLAYEY SAND) and precede the primary constituent.	 SECONDARY constituents are composed of a percentage less than the primary constituent, but more than 20 percent of the soil mass. Secondary constituents are capitalized and bold (i.e., SANDY CLAY, SILTY CLAY, CLAYEY SILT) and precede the primary constituent. 										
 accessory descriptions compose of the following: with some: >12% with a little: 5 - 12% with traces of: <5% accessory descriptions are lower cased and follow the Primary and Secondary Constituents (i.e., SILTY GRAVEL with a little sand) 	• accessory descriptions compose of the following: with some: >12% with a little: 5 - 12% with traces of: <5% accessory descriptions are lower cased and follow the Primary and Secondary Constituents (i.e., SILTY CLAY with some sand)										

EXAMPLE: Soil Containing 60% Gravel, 25% Sand, 15% Fines. Described as: SILTY GRAVEL with some sand

RELATIVE DENSITY / CONSISTENCY

	Granular Soils		Cohesive Soils						
N-Value (E SPT	N-Value (Blows/Foot) SPT MCS		N-Value (E SPT	Blows/Foot) MCS	PP Readings (tsf)	Consistency			
0 - 4	0 - 7	Very Loose	0 - 2	0 - 4		Very Soft			
4 - 10	7 - 18	Loose	2 - 4	4 - 7	< 0.5	Soft			
10 - 30	18 - 55	Medium Dense	4 - 8	7 - 15	0.5 - 1.0	Medium Stiff			
30 - 50	55 - 91	Dense	8 - 15	15 - 27	1.0 - 2.0	Stiff			
> 50	> 91	Very Dense	15 - 30	27 - 55	2.0 - 4.0	Very Stiff			
			> 30	> 55	> 4.0	Hard			

MOISTURE CONTENT DEFINITIONS

- Dry: Absence of moisture, dry to the touch
- Moist: Damp but no visible water
- Wet: Visible free water

ABBREVIATIONS

WOH: Weight of Hammer

WOR: Weight of Drill Rods

SPT: Standard Penetration Test Split-Spoon Sampler

MCS: Modified California Sampler

PP: Pocket Penetrometer

GRAIN SIZE DEFINITION

Description	Sieve Number and / or Size
Boulders	> 12 inches (305-mm)
Cobbles	3 to 12 inches (75-mm to 305-mm)
Gravel	3-inch to #4 (75-mm to 4.75-mm)
Coarse Gravel	3-inch to 3/4-inch (75-mm to 19-mm)
Fine Gravel	3/4-inch to #4 (19-mm to 4.75-mm)
Sand	#4 to #200 (4.75-mm to 0.075-mm)
Coarse Sand	#4 to #10 (4.75-mm to 2-mm)
Medium Sand	#10 to #40 (2-mm to 0.425-mm)
Fine Sand	#40 to #200 (0.425-mm to 0.075-mm)

Plate

*Soil descriptions are based on ASTM D2488-09a, Visual-Manual Procedure, with the above modifications by Geolabs, Inc. to the Unified Soil Classification System (USCS). A-0.2



ROCK DESCRIPTIONS

	BASALT		CONGLOMERATE
22	BOULDERS		LIMESTONE
	BRECCIA		SANDSTONE
×o × × × × × ×	CLINKER	× × × × × × × × × × × ×	SILTSTONE
	COBBLES		TUFF
	CORAL		VOID/CAVITY

ROCK DESCRIPTION SYSTEM

ROCK FRACTURE CHARACTERISTICS

The following terms describe general fracture spacing of a rock:

Massive:	Greater than 24 inches apart
Slightly Fractured:	12 to 24 inches apart
Moderately Fractured:	6 to 12 inches apart
Closely Fractured:	3 to 6 inches apart
Severely Fractured:	Less than 3 inches apart

DEGREE OF WEATHERING

The following terms describe the chemical weathering of a rock:

Unweathered:	Rock shows no sign of discoloration or loss of strength.
Slightly Weathered:	Slight discoloration inwards from open fractures.
Moderately Weathered:	Discoloration throughout and noticeably weakened though not able to break by hand.
Highly Weathered:	Most minerals decomposed with some corestones present in residual soil mass. Can be broken by hand.
Extremely Weathered:	Saprolite. Mineral residue completely decomposed to soil but fabric and structure preserved.

HARDNESS

The following terms describe the resistance of a rock to indentation or scratching:

Very Hard:	Specimen breaks with difficulty after several "pinging" hammer blows. Example: Dense, fine grain volcanic rock	
Hard:	Specimen breaks with some difficulty after several hammer blows. Example: Vesicular, vugular, coarse-grained rock	
Medium Hard:	Specimen can be broked by one hammer blow. Cannot be scraped by knife. SPT may penetrate by ~25 blows per inch with bounce. Example: Porous rock such as clinker, cinder, and coral reef	
Soft:	Can be indented by one hammer blow. Can be scraped or peeled by knife. SPT can penetrate by ~100 blows per foot. Example: Weathered rock, chalk-like coral reef	
Very Soft:	Crumbles under hammer blow. Can be peeled and carved by knife. Can be indented by finger pressure. Example: Saprolite	Plate A-0.3

FREEWAY MANAGEMENT SYSTEM PHASE 3, UNITS 1 AND 2, IM-0300(152) INTERSTATE ROUTES H-1 AND H-2 FREEWAYS DISTRICTS OF HONOLULU AND EWA, OAHU, HAWAII

Log of Boring

1

Geotechnical Engineering

Lab	oratory			F	ield						Annovimento Cround Surface	
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	ple	hic	S	Approximate Ground Surface Elevation (feet): 168 *	
Othe	Mois Cont	Dry [(pcf)	Core Recc	RQD	Pene Resi (blow	Pock (tsf)	Dept	Sample	Graphic	NSCS	Description	
Direct Shear LL=71 PI=42	23 20	69			36 18	4.5	-			CH	Reddish brown SILTY CLAY , very stiff, moist (residual soil)	-
Sieve - #200 = 31.6%	35	80			10		5 - -			SM	Brownish gray BOULDERS (BASALTIC) Reddish brown with gray mottling SILTY SANE (BASALTIC) with a little gravel (basaltic), loos moist (saprolite)	
UC= 3710 psi	3		100	100	20/2"		- - 10 -				Gray BASALT , closely to slightly fractured, moderately to slightly weathered, hard to ver hard (basalt formation)	y -
UC= 2910 psi			100	80			- 15 - -	-			grades to moderately to severely fractured	-
							- 20 -				Boring terminated at 20 feet	
							-	-				-
							25 - - -	-				-
171017							- - 30					-
							-	-				-
							35-					
Date Star			ember			Nater I	eve	1: 1	LN	lot E	ncountered	
Date Con	•					Drill Rig	л.		-		45C TRUCK	;
Logged E		20 fe	remmi	iger		Drilling	lid-Stem Auger & PQ Coring A -	1				
Work Ord			-30(A)			Driving	D. wt., 30 in. drop	'				
			(, 1)					3)			,	

BORING_LOG 6891-30A&B.GPJ GEOLABS.GDT 2/9/21

FREEWAY MANAGEMENT SYSTEM PHASE 3, UNITS 1 AND 2, IM-0300(152) INTERSTATE ROUTES H-1 AND H-2 FREEWAYS DISTRICTS OF HONOLULU AND EWA, OAHU, HAWAII

Log of Boring

2

Lab	ield						I				
	oratory	ty	(%)	F		Ľ.	et)				Approximate Ground Surface Elevation (feet): 117 *
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	NSCS	Description
ŧ	°õg	(DC)	Co Re	RQ	(blc	(tsf	De	Sal	Ŭ	SU NS	Description Reddish brown SANDY SILT with a little gravel
Direct	19	67			38	4.5	-		Ш		(basaltic), very stiff, moist (fill)
Shear	22				26		-		Ш		
							-		Ш		
Direct Shear	18	66			12		5-	X	ļļ	SC	grades to medium stiff Reddish brown CLAYEY SAND with some
							-			00	gravel, loose, moist (fill)
							-				
LL=57	30				10		10-				
PI=29							-				
							-				
	35	79			13	2.0	- 15-		Ŵ	MH	Reddish brown with gray mottling CLAYEY SILT with some sand, medium stiff, moist (residual
	35	79			13	2.0	-	X			soil)
							-				
							-				
	39				4		20-			MH	Brown CLAYEY SILT with some sand, soft, wet (residual soil)
							-				Boring terminated at 21.5 feet
							-				
							25 -				
							-				
							-	$\left \right $			
							- 30 -				
							-				
							-				
							-	$\left \right $			
Date Star	rted:	Sent	ember	1 202	<u> </u>	Nater I	35-	 • 👅	/ N	Not F	ncountered
L	Date Started:September 1, 2020Date Completed:September 1, 2020							· <u>4</u>	- 1		Plate
Logged E Total Dep		Drill Riq	-	b c c'			45C TRUCK				
Vork Orc		I	Drilling Method: 4" Solid-Stem Auger A - 2 Driving Energy: 140 lb. wt., 30 in. drop								

FREEWAY MANAGEMENT SYSTEM PHASE 3, UNITS 1 AND 2, IM-0300(152) INTERSTATE ROUTES H-1 AND H-2 FREEWAYS DISTRICTS OF HONOLULU AND EWA, OAHU, HAWAII

Log of Boring

3

Labo	F	ield	<u>.</u>									
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	ple	hic	S	Approximate Ground Surf Elevation (feet): 296 *	ace
Othe	Mois Cont	Dry [(pcf)	Core Recc	RQD	Pene Resi (blow	Pock (tsf)	Dept	Sample	Graphic	NSCS	Description	
LL=63 PI=41	18	85			50	4.5	-	N		СН	Reddish brown SILTY CLAY with sor (basaltic), very stiff, dry (fill)	ne gravel
	8		100	16	50/4"		-	Ì			Gray BASALT , severely to moderate moderately to slightly weathered, h hard (basalt formation)	ly fractured, ard to very
UC= 13160 psi			100	23			5					
UC= 29720 psi			83	0			- 10 - -					
							- 15 -				Boring terminated at 15.5 feet	
							-	-				
							20	-				
							- - 25	-				
							-	-				
							- - 30	-				
							-					
Date Star							- 35 -					
Date Star Date Com			ember ember			Vater I	_eve	l: I	N	lot E	ncountered	Plate
Logged B	y:	D. G	remmi		[Drill Riq	-				45C TRUCK	
Total Dep Work Ord		15.5 6891	feet -30(A)			Drilling Driving					lid-Stem Auger & PQ Coring . wt., 30 in. drop	A - 3

FREEWAY MANAGEMENT SYSTEM PHASE 3, UNITS 1 AND 2, IM-0300(152) INTERSTATE ROUTES H-1 AND H-2 FREEWAYS DISTRICTS OF HONOLULU AND EWA, OAHU, HAWAII

Log of Boring

4

Ē	Laboratory			Field										
	Labo	bratory			F							Approximate Ground Surface		
	Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Elevation (feet): 195 *		
	Otl	ĕΰ	D d)	ပီမီ	RC	Pe (ble	Po (tsi	De	Sa	Ū	SU	Description		
	TXUU LL=53	27 26	96			41 25	4.5	-			GP- GM MH	3-inch ASPHALTIC CONCRETE Reddish gray SANDY GRAVEL (BASALTIC) with a little silt, dry (fill) Reddish brown CLAYEY SILT with some sand		
	PI=24							-				and gravel, very stiff, dry (fill)		
		25	76			65	4.5	5-	X			grades to hard		
		17				22		- - 10 -			GM	Grayish brown SILTY GRAVEL (BASALTIC) with some sand and a little clay, medium dense, dry (residual soil)		
	UC= 9790 psi			43				- - - 15-				Brownish gray COBBLY BOULDERS (BASALTIC) with some clay seams, very dense, dry (residual soil)		
				70				-						
						20/0" Ref.		- 20 -				Boring terminated at 20.5 feet		
								- 25 - -	-					
9/21								- - 30 -	-					
30A&B.GPJ GEOLABS.GDT 2/9/21								- -	-					
BPJ G								-	1					
∆&B.G	Det: Of	0.000		A/	35-	' I								
6891.		pleted	l: Sept	September 2, 2020 September 2, 2020				Water Level: 🗴 Not Encountered						
G_LOG	Logged B Total Dep		D. Gremminger 20.5 feet				Drill Rig:CME-45C TRUCKDrilling Method:4" Solid-Stem Auger & PQ CoringA - 4							
BORING	Work Ord		6891-30(A)				Driving Energy: 140 lb. wt., 30 in. drop							
ш							3	-	55					

FREEWAY MANAGEMENT SYSTEM PHASE 3, UNITS 1 AND 2, IM-0300(152) INTERSTATE ROUTES H-1 AND H-2 FREEWAYS DISTRICTS OF HONOLULU AND EWA, OAHU, HAWAII

Log of Boring

5

Laboratory Field ag ag bg bg <th>Ē</th> <th>Lab</th> <th colspan="2"></th> <th></th> <th></th> <th>:</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th colspan="2"></th>	Ē	Lab					:							
grad grad <thgrad< th=""> grad grad</thgrad<>		Labo	bratory			F							Approximate Ground Surface	
TXUU 15 106 22 Sieve 9 25 15.3% Direct 22 Direct 22 74 18 14 19 14 10 10 16 90 16 90 16 90 11 34 12 74 14 10 15 10 16 90 16 90 11 34 12 5 13 14 14 10 15 5 16 90 16 90 16 90 11 34 12 5M Brownish gray SILTY SAND (BASALTIC) with some gravel (basaltic), medium dense, moist (colluvium) 11 34 11 34 12 5M Brownish gray SILTY SAND (BASALTIC) with some gravel (basaltic), medium dense, moist (colluvium) 11 34 12 5M 130 14 14 14 15 5M 16 90 17 5M		s	(%)	≥	(%)		ΞωŦ	Ċ.	it)				Elevation (feet): 62 *	
TXUU 15 106 22 Sieve 9 25 25 Direct 22 74 36 Direct 22 74 36 18 14 10 grades with some silty Clay grades with a little cobbles (coralline) grades with a little cobbles (coralline) 18 14 10 16 90 64 11 34 20 20 5 5 20 5 6 11 34 20 20 5 5 20 5 6 11 34 20 20 5 6 20 5 6 20 5 6 20 5 6 20 5 6 20 5 6 20 5 6 20 5 6 20 5 6 20 5 6 20 5 <		Tes	re (%	susi	ery	(%	atio anc	t Pe	(fee	e	<u>0</u>			
TXUU 15 106 22 Sieve 9 25 25 Direct 22 74 36 Shear 22 74 36 18 14 10 grades with some silty Clay 18 14 10 grades with a little cobbles (coralline) 18 14 10 grades to wet 18 14 10 grades to wet 16 90 64 15 6M 11 34 20 5 5 20 5 5 6M Brownish gray SLTY SAND (BASALTIC) with a little silt, dense, moist (colluvium) 16 90 64 15 5 6M 20 15 5 6M Brownish gray SLTY SAND (BASALTIC) with some gravel (basaltic), medium dense, moist (colluvium) 20 15 5 6M 10 10 20 15 5 6M Brownish gray SLTY SAND (BASALTIC) with some gravel (basaltic), medium dense, moist (colluvium) 10 20 16 90 64 10 10 10		her	istu	D D D D D D D D D D D D D D D D D D D	e co) D	netr sist	Cke	pth	ldm	aph	CS	Description	
TXUU 15 106 22 22 25 and the set of the set		Ofl	≚ပိ	<u> </u>	ပိမိ	RC	Pe (ble	(tsi	De	Sa	ō		-	
Sieve #200 = 15.3% Drect Shear 9 25 36 5 Image: second se		T \/1.11.1		100					-			SM		_/
- #200 9 22 74 36 5 (fill) grades with some silty clay grades with a little cobbles (coralline) 18 14 10 grades to wet 9 16 90 64 15 64 15 11 34 34 15 64 15 64 11 34 36 5 64 15 64 11 34 36 5 64 15 64 11 34 36 5 64 64 64 11 34 36 5 64 6		TXUU	15	106			22		-	M		•	some gravel (coralline), medium dense, moist	-
15.3% Direct 22 74 36 5 grades with a little cobbles (coralline) 18 14 10 grades to wet grades to wet 16 90 64 15 60 Brownish gray SANDY GRAVEL (BASALTIC) with a little silt, dense, moist (colluvium) 16 90 64 15 60 Brownish gray SLTY SAND (BASALTIC) with a little silt, dense, moist (colluvium) 11 34 20 5 5 60 Brownish gray SLTY SAND (BASALTIC) with a little silt, dense, moist (colluvium) 20 5 5 5 6 6 6 20 5 5 5 6 6 6 20 5 5 5 6 6 6 20 5 5 5 6 6 6 20 5 5 5 6 6 6 20 5 5 5 6 6 6 25 5 5 6 6 6 6 26 5 5 5 6 6 <td></td> <td></td> <td>9</td> <td></td> <td></td> <td></td> <td>25</td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td>(fill)</td> <td>-</td>			9				25		-				(fill)	-
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