STATE	PROJECT	SHEET NO.	TOTAL			
HI	HI A-AD 6(7)	B6	B29			

	Roadway Excavation			Adjustments To Excavation					Roadway E	mbankment	Adjustments to Embankment					Mass Haul			77 70 70	
Pay Item Station to Station																20420-0000			62407-0000	
	Roadway Prism	Approach Roads	Roadway Excavation	(+) Structure Excavation (Underpass)	(-) Pavement Removal in Cuts	(-) Topsoil Stripping In Cuts	(+) Over Excavation (In Cuts Sections)	Average Shrink/ Swell Factor <sup>(4)</sup>	Total Excavation Available for Fills	Roadway Prism	Approach Roads	(+) Structural Backfill (Underpass)	(+) Backfill for Pavement Removal Under Fill	(+) Topsoil Removal & Replacement Under Fill	(+) Over Excavation (in Cuts Sections)	Total Embankment	Excavation - Embankment	Mass Ordinate	Conserved Topsoil	Embankme Constructio
Definition	(BCY)	(BCY)	(BCY)	(BCY)	(BCY)	(BCY)	(BCY)		(CCY)	(CCY)	(CCY)	(CCY)	(CCY)	(CCY)	(CCY)	(CCY)	(CCY)	(CCY)	(yd3)	
Mamalahoa Hwy (SR190)																				
763+62.54/1 - 795+11.02/1	0	8,288	8,288	0	41	0	316	0.95	8,135	0	6,251	0	1,025	0	316	7,592	543	543	0	
MSR Road	0.044		0.041	1,709	159	0	162	0.80	8,603	1,236	0	1,749	111	0	162	3,258	5,344	5,887	0	
91+00.00/1 101+50.00/1 646+50.00/1 648+50.00/1	9,041	0	9,041	0	0	0	0	0.80	0	8,267	0	0	32	229	0	8,528	-8,528	-2,641	229	
646+50.00/1 648+50.00/1	0	0	0	U	U	U	0	0.00	0	0,207	0	0	32	225	0	6,326	0,520	2,041	223	
Saddle Road/Lightning Trail																				
Stockpile from HI A-AD 6(6) Project								1.00	16,000								16,000	13,359		
707+00.00/1 - 712+00.00/1	721	6,003	6,724	0	0	1,290	656	0.80	4,872	4,277	7,809	0	0	2,706	656	15,448	-10,576	2,783	3,995	
712+00.00/1 - 726+00.00/1	3,360	4	3,364	0	324	269	1,066	0.80	3,069	1,858	2,069	0	59	1,242	1,066	6,294	-3,224	-441	1,511	
726+00.00/1 - 740+00.00/1	3,273	0	3,273	0	263	0	754	0.80	3,011	3,028	1,359	0	257	800	754	6,198	-3,187	-3,628	800	
740+00.00/1 - 744+89.80/1	1,095	208	1,303	0	265	0	762	0.80	1,440	169	1,284	0	731	495	762	3,441	-2,001	-5,629	495	
		7,036	7,036					0.80	5,629								5,629	0		0
Earthwork Balance, Location to be Field Determined (See SCR's, Section 204)		7,036	7,030					0.00	3,023											
													A		35					
Totals	17,490	21,539	39,029	1,709	1,052	1,559	3,716		50,759	18,835	18,772	1,749	2,215	5,472	3,716	50,759			7,030	0

## NOTES:

- 1. BCY = Bank Cubic Yard = One cubic yard of material as it lies in natural bank state.
- 2. CCY = Compacted Cubic Yard = One cubic yard of material after it has been compacted to specification density.
- 3. The quantities shown herein are approximations. Payment will be made for the actual quantities of work performed and accepted.
- 4. The average shrink/swell factor shown is computed by taking an average of values over the specified station range. Recommended shrink/swell factors are used in the calculations. See Geotech Report for recommended shrink/swell values.
- 5. The above Grading Summary is based on generic shrink/swell factors and does not include all minor quantities and adjustments, therefore, it is not an exact representation of the earthwork to be constructed.

THE SHRINK/SWELL FACTORS ARE GENERIC, BASELINE ASSUMPTIONS MADE SOLEY FOR DESIGN PURPOSES. THE GOVERNMENT IS MAKING NO EXPRESS OR IMPLICIT REPRESENTATIONS AS TO SHRINK/SWELL FACTORS OR OTHER SUBSURFACE PHYSICAL CONDITIONS ON THE PROJECT.

ACTUAL SHRINK/SWELL FACTORS SHOULD BE EXPECTED TO VARY SIGNIFICANTLY DUE TO THE HIGHLY VARIABLE GEOLOGY OF LAVA FLOWS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY INCREASED COSTS RESULTING FROM ACTUAL SUBSURFACE CONDITIONS ENCOUNTERED WHICH

DIFFER FROM ANY SUCH CONDITIONS IT MAY HAVE ANTICIPATED IN ITS BID. IT IS ANTICIPATED THAT ONE OR MORE DESIGN ADJUSTMENTS WILL BE NEEDED TO BALANCE THE EARTHWORK. SEE SECTION 204 OF THE SPECIAL CONTRACT REQUIREMENTS FOR

DESIGN ADJUSTMENT PROCEDURES AND METHODS OF MEASUREMENT AND PAYMENT.

THE SHRINK/SWELL FACTORS ARE NOT INTENDED AND SHOULD NOT BE USED TO ESTIMATE VOLUMES OF SUBSURFACE MATERIAL TYPES, INCLUDING A'A CINDER, PA'HOEHOE, HARD BASALT, VOLCANIC ASH, OR TOPSOIL, ALL OF WHICH CAN BE EXPECTED TO BE ENCOUNTERED. THE GOVERNMENT HAS NOT ATTEMPTED TO ESTIMATE THE VOLUMES OR DIFFICULTY OF EXCAVATION, HANDLING, PROCESSING AND PLACEMENT FOR THE VARIOUS MATERIAL TYPES. THE GEOTECHNICAL DATA REPORT (GDR), INCLUDING BORING LOGS, WILL BE PROVIDED UPON REQUEST, SOLEY FOR THE PURPOSE OF SHARING SUBSURFACE INFORMATION OBTAINED BY THE GOVERNMENT. THE LATERAL CONTINUITY OF BORING LOG DATA PROVIDED IN THE GDR IS UNKNOWN. THE GDR IS UNKNOWN. THE GDR IS UNKNOWN. OF THE GDR BEYOND THE SPECIFIC INFORMATION PROVIDED THERIN.

details shown on this sheet renect the dimensions and details and specifications as constructed in the field.

**GRADING SUMMARY** 

GOODFELLOW BROS., INC.
Contractor a Name:

Va.
V2/14
Signature
Date

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