

S:\Temp\proj\100013746-SR\HW\Des\Construction\Bld_Package_1\Earthwork\Earthwork-SR -Revised-Existing-Ground_Revised-Profile.xls\Summary

REVISION 02 - 02/10/2012 - GROUND SURFACE & PROFILE																			STATE	PROJECT	SHEET NO.	TOTAL SHEETS
																			HI	HI A-AD 6(6)	B9, B11	B24
	Roadway Excavation			Adjustments To Excavation						Roadway Embankment		Adjustments to Embankment					Mass Haul					
Pay Item			20401-0000				20401-0000									20420-0000			62407-0000			
Station to Station	Roadway Prism	Approach Roads	Roadway Excavation	(+) Structure Excavation	(-) Pavement Removal in Cuts	(-) Topsoil Stripping In Cuts	(+) Over Excavation (in Cuts Sections)	Average Shrink/ Swell Factor ⁽⁴⁾	Total Excavation Available for Fills	Roadway Prism	Approach Roads	(+) Structural Backfill	(+) Backfill for Pavement Removal Under Fill	(+) Topsoil Removal & Replacement Under Fill	(+) Over Excavation (in Cuts Sections)	Total Embankment	Excavation - Embankment	Mass Ordinate	Conserved Topsoil	Embankment Construction		
Definition	(BCY)	(BCY)	(BCY)	(BCY)	(BCY)	(BCY)	(BCY)		(CCY)	(CCY)	(CCY)	(CCY)	(CCY)	(CCY)	(CCY)	(CCY)	(CCY)	(CCY)	(yd3)			
201+00.00/1 - 208+00.00/1	110,513	16,895	127,408	0	0	0	1,352	0.95	122,322	0	1,332	0	0	0	1,352	2,684	119,638	119,638	0			
208+00.00/1 - 222+00.00/1	194,910	0	194,910	0	0	0	1,509	0.95	186,598	0	0	0	0	0	1,509	1,509	185,089	304,727	0			
222+00.00/1 - 236+00.00/1	26,192	0	26,192	0	0	0	821	0.95	25,662	17,834	209	0	0	0	821	18,864	6,798	311,525	0			
236+00.00/1 - 250+00.00/1	2,119	0	2,119	0	0	0	48	0.95	2,059	62,940	0	0	0	0	48	62,988	-60,929	250,596	0			
250+00.00/1 - 264+00.00/1	43,635	0	43,635	0	0	0	700	0.95	42,119	21,433	0	0	0	0	700	22,133	19,985	270,581	0			
264+00.00/1 - 278+00.00/1	3,997	0	3,997	0	0	0	264	0.95	4,048	56,025	0	0	0	0	264	56,289	-52,241	218,340	0			
278+00.00/1 - 292+00.00/1	2,624	0	2,624	0	0	0	343	0.90	2,671	40,461	603	0	0	0	343	41,407	-38,737	179,603	0			
292+00.00/1 - 306+00.00/1	274	0	274	0	0	0	30	0.90	273	61,789	460	0	0	0	30	62,279	-62,005	117,598	0			
306+00.00/1 - 320+00.00/1	39,899	0	39,899	0	0	0	688	0.90	36,529	24,450	0	0	0	0	688	25,138	11,390	128,988	0			
320+00.00/1 - 334+00.00/1	29,550	0	29,550	0	0	0	660	0.90	27,189	17,348	0	0	0	0	660	18,008	9,181	138,169	0			
334+00.00/1 - 348+00.00/1	11,510	0	11,510	0	0	0	906	0.90	11,174	7,561	0	0	0	0	906	8,467	2,707	140,877	0			
348+00.00/1 - 362+00.00/1	48,156	0	48,156	0	0	0	1,373	0.90	44,576	407	0	0	0	0	1,373	1,780	42,796	183,673	0			
362+00.00/1 - 376+00.00/1	8,464	0	8,464	0	0	0	480	0.90	8,050	73,418	0	0	0	0	480	73,898	-65,848	117,824	0			
376+00.00/1 - 390+00.00/1	1,250	0	1,250	0	0	0	127	0.90	1,239	52,944	2,127	0	0	0	127	55,198	-53,959	63,866	0			
390+00.00/1 - 404+00.00/1	118,638	0	118,638	0	0	0	1,091	0.90	107,756	9,987	0	0	0	0	1,091	11,078	96,678	160,544	0			
404+00.00/1 - 418+00.00/1	39,287	0	39,287	0	0	0	1,031	0.90	36,287	9,906	0	0	0	0	1,031	10,937	25,349	185,893	0			
418+00.00/1 - 432+00.00/1	4,173	0	4,173	0	0	0	334	0.90	4,056	29,555	0	0	0	0	334	29,889	-25,833	160,060	0			
432+00.00/1 - 446+00.00/1	2,433	0	2,433	0	0	0	296	0.90	2,456	52,751	0	0	0	0	296	53,047	-50,591	109,469	0			
446+00.00/1 - 460+00.00/1	1,513	0	1,513	0	0	0	120	0.90	1,470	75,789	0	0	0	0	120	75,909	-74,439	35,030	0			
460+00.00/1 - 474+00.00/1	46,199	0	46,199	0	0	0	1,019	0.90	42,496	9,285	0	0	0	0	1,019	10,304	32,192	67,222	0			
474+00.00/1 - 488+00.00/1	19,984	0	19,984	0	0	0	732	0.90	18,645	16,765	0	0	0	0	732	17,497	1,147	68,370	0			
488+00.00/1 - 502+00.00/1	1,461	11	1,472	0	0	0	77	0.90	1,394	85,399	4,752	0	0	0	77	90,228	-88,834	-20,464	0			
502+00.00/1 - 516+00.00/1	18,918	0	18,918	0	0	0	962	0.90	17,892	10,904	0	0	0	0	962	11,866	6,026	-14,438	0			
516+00.00/1 - 530+00.00/1	20,095	0	20,095	0	0	0	766	0.90	18,775	8,818	0	0	0	0	766	9,584	9,191	-5,247	0			
530+00.00/1 - 544+00.00/1	12,660	0	12,660	0	0	0	441	0.90	11,791	32,938	0	0	0	0	441	33,379	-21,588	-26,835	0			
544+00.00/1 - 558+00.00/1	36,179	0	36,179	0	0	0	1,033	0.90	33,491	24,105	0	0	0	0	1,033	25,138	8,353	-18,482	0			
558+00.00/1 - 572+00.00/1	83,114	0	83,114	0	0	0	1,419	0.90	76,080	240	0	0	0	0	1,419	1,659	74,421	55,938	0			
572+00.00/1 - 586+00.00/1	94,419	0	94,419	0	0	0	1,457	0.90	85,998	0	0	0	0	0	1,457	1,457	84,541	140,479	0			
586+00.00/1 - 600+00.00/1	3,748	0	3,748	0	0	0	430	0.80	3,342	24,925	0	0	0	0	430	25,355	-22,013	118,466	0			
600+00.00/1 - 614+00.00/1	0	0	0	0	0	0	0	0.80	0	118,003	0	0	0	0	0	118,003	-118,003	463	0			
614+00.00/1 - 628+00.00/1	49,499	0	49,499	0	0	0	1,037	0.80	40,429	7,274	0	0	0	0	1,037	8,311	32,118	32,581	0			
628+00.00/1 - 642+00.00/1	7,534	0	7,534	0	0	0	758	0.80	6,633	5,735	0	0	0	0	758	6,493	141	32,722	0			
642+00.00/1 - 656+00.00/1	59	0	59	0	0	0	20	0.81	64	50,783	0	0	0	0	20	50,803	-50,740	-18,018	0			
656+00.00/1 - 670+00.00/1	22,866	0	22,866	0	0	0	699	0.80	18,852	9,155	0	0	0	0	699	9,854	8,998	-9,020	0			
670+00.00/1 - 684+00.00/1	63,460	0	63,460	0	0	0	1,033	0.80	51,594	3,676	0	0	0	0	1,033	4,709	46,885	37,865	0			
684+00.00/1 - 698+00.00/1	12,268	0	12,268	0	0	0	473	0.80	10,193	13,308	0	0	0	0	473	13,781	-3,588	34,277	0			
698+00.00/1 - 707+00.00/1	23	0	23	0	0	0	19	0.80	34	17,531	16,000	0	0	0	19	33,550	-33,516	761	0			
Totals	1,181,623	16,906	1,198,529	0	0	*	24,548		1,104,237	1,053,442	25,483	0	*	0	24,548	1,103,473			*	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. Over excavation (in cut sections) as required in Subsection 204.07 shall be paid for as "Roadway Excavation" (Item no. 20401-0000).
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.

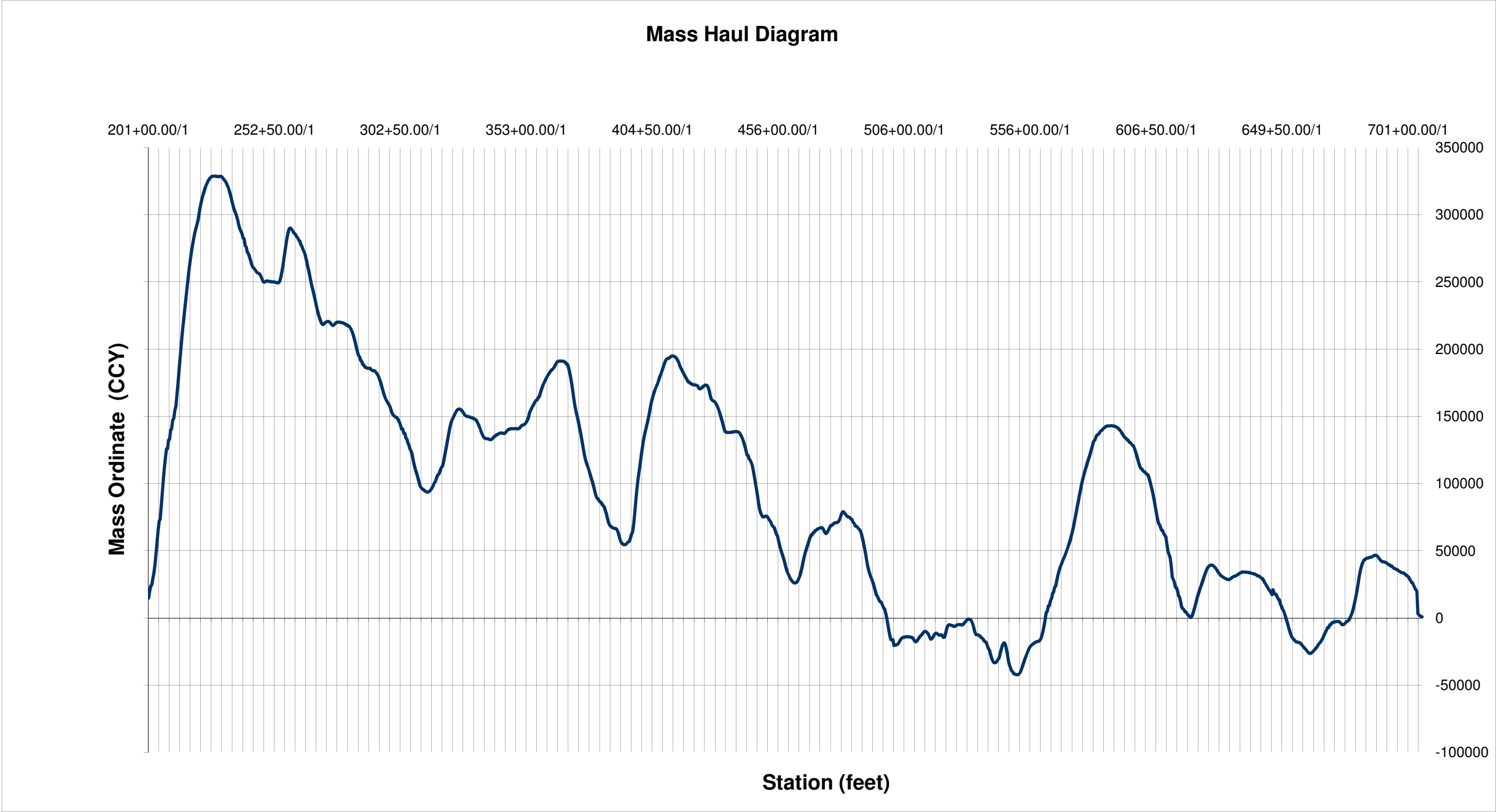
THE SHRINK/SWELL FACTORS ARE NOT INTENDED AND SHOULD NOT BE USED TO ESTIMATE VOLUMES OF SUBSURFACE MATERIAL TYPES, INCLUDING A'A CINDER, PA'HOEHOE, HARD BASALT, VOLCANIC ASH, OR TOPSOIL, ALL OF WHICH CAN BE EXPECTED TO BE ENCOUNTERED. THE GOVERNMENT HAS NOT ATTEMPTED TO ESTIMATE THE VOLUMES OR DIFFICULTY 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 NOT INTENDED TO DEPICT THE ESTIMATED 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 CONTRACTOR IS FULLY RESPONSIBLE FOR ANY INTERPRETATION OF THE GDR BEYOND THE SPECIFIC INFORMATION PROVIDED THERIN.

*THE REVISED EXISTING GROUND SURFACE IS CONDITION AFTER THE COMPLETION OF TOPSOIL STRIPPING AND CLEARING AND GRUBBING. THEREFORE, THIS SUMMARY DOES NOT REFLECT ANY TOPSOIL QUANTITIES AS THE TOPSOIL WAS PREVIOUSLY STRIPPED AND CONSERVED BY THE CONTRACTOR. THE REVISED EXISTING GROUND AS SHOWN IN THE REVISED CROSS SECTIONS ARE AS SURVEYED BY THE CONTRACTOR AND ALL EARTHWORK CALCULATIONS ARE BASED ON THIS REVISED EXISTING GROUND.
**EARTHWORK QUANTITIES WERE RECALCULATED BASED ON REVISED TERRAIN DATA FOR SR 190 (MAMALAHOA HWY.) BUT WERE NOT RECALCULATED FOR THE APPROACH ROADS.
***FOR THE GRADING SUMMARY, NO DEDUCTION IN QUANTITIES HAVE BEEN MADE FOR THE NO WORK AREA AT STA. 646+95 TO 647+80.

REVISION 02
GRADING SUMMARY
SCHEDULE B & OPTION X

REVISION 02 - 02/10/2012 - GROUND SURFACE & PROFILE

STATE	PROJECT	SHEET NO.	TOTAL SHEET
HI	HI A-AD 6(6)	B10, B12	B24



NOTES:
1. At station 201+00 the ordinate starts above 0 because the earthwork for Hwy 190 (Mamalahoa Highway) is included.

REVISION 02

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION
**MASS HAUL DIAGRAM
SCHEDULE B & OPTION X**