

STATE	SADDLE ROAD PROJECT	SHEET NO.	TOTAL SHEETS
HI	HI A-AD/STP 6(3) & 200(1)	C4	C23

1. BCY = Bank Cubic Yard = One cubic yard of material as it lies in the natural bank state.
CCY = Compacted Cubic Yard = One cubic yard of material after it has been compacted to the specification density.

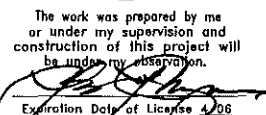
2. About 12 inches of material loss due to compaction. Accounted for in roadway cross-sectioning.
* 100 cubic yards added for grading to drainage ditch.

3. Recycled asphalt concrete pavement from roadway obliteration material suitable for roadway embankment (assume 4" depth removed from surface).

4. Depth assumed for topsoil stripping and backfill = 6 inches (use to cover slopes and revegetate).

5. Material set aside along the project to dress 2:1 slopes that do not blend with the natural surroundings.

SPECIAL METHODS AND EQUIPMENT WILL BE NECESSARY TO EXCAVATE AND EMBANK MATERIALS CONSISTING OF ROCK. REMOVE SUCH MATERIAL TO THE LINES AND GRADES INDICATED REGARDLESS OF HARDNESS OR QUANTITY. REMOVAL OF SUCH MATERIAL TO THE LINES AND GRADES INDICATED SHALL NOT GIVE CAUSE FOR A CLAIM FOR ADDITIONAL COMPENSATION REGARDLESS OF HARDNESS OR DIFFICULTY IN REMOVING. CONSIDER THE EXCAVATED ROCK MATERIALS USABLE WHEN THE EXCAVATED ROCK MATERIALS ARE PROCESSED TO THE MAXIMUM PARTICLE SIZE AND GRADATION INDICATED IN THE SPECIFICATIONS.



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GRADING SUMMARY (Sheet 2 of 3)															STATE	SADDLE ROAD PROJECT	SHEET NO.	TOTAL SHEETS
															HI	HI A-AD/STP 6(3) & 200(1)	C5	C23
STATION TO STATION			ROADWAY EXCAVATION			ADJUSTMENTS TO EXCAVATION					Total Excavation Available for Fills (CCY) ¹	ROADWAY EMB		ADJ TO EMB		Total Embankment (CCY)	Mass Ordinate	
			(+) Roadway Prism (BCY) ¹	(+) Approach Roads (BCY)	Subtotal	(-) Basalt Clinker Volume Loss ² (BCY)	20401 Total Excavation Material (BCY)	Shrink/Swell Factor	(+) Roadway Obliteration Material ³ (BCY)	(-) Topsoil Stripping in Cuts ⁴ (BCY)		(+) Roadway Prism (CCY)	(+) Approach Roads (CCY)	(+) Backfill Topsoil Stripping Under Fills ⁴ (CCY)	(+) Basalt Clinker Volume Loss ² (BCY)			
843+50	to	852+00	10969		10969	2894	8075	0.75			6056	18			0	18	-13196	
852+00	to	852+50	327		327	162	165	0.85			141	162			0	162	-13217	
852+50	to	856+50	2091		2091	529	1562	0.75			1172	4535			957	5492	-17537	
856+50	to	867+00	19375		19375	3578	15797	0.85			13427	98			105	203	-4313	
867+00	to	869+00	4763		4763	802	3961	0.80			3169	0			0	0	-1144	
869+00	to	909+50	25579	48	25627	7298	18329	0.85			15580	32371	4		5730	38105	-23669	
909+50	to	919+50	11333	890	12223	2779	9444	0.75	17		7100	1139	0		637	1776	-18345	
919+50	to	927+00	541		541	252	289	0.85			246	18399			2760	21159	-39258	
927+00	to	929+00	3626		3626	589	3037	0.75			2278	36			78	114	-37094	
929+00	to	929+50	1397		1397	179	1218	0.85			1035	22			0	22	-36081	
929+50	to	934+00	17160		17160	1826	15334	0.80			12267	0			0	0	-23814	
934+00	to	934+50	2383		2383	229	2154	0.85			1831	0			0	0	-21983	
934+50	to	939+00	28012		28012	2036	25976	0.90			23379	0			0	0	1396	
939+00	to	940+50	3704		3704	422	3282	0.80			2626	171			96	267	3755	
940+50	to	941+00	243		243	44	199	0.85			169	266			90	356	3568	
941+00	to	943+00	950		950	405	545	0.75	27		436	524			209	733	3271	
943+00	to	945+00	283		283	115	168	0.85			143	2272			438	2710	704	
945+00	to	950+50	920	24	944	377	567	0.80			454	3341	874		1471	5686	-4528	
950+50	to	951+00	269		269	53	216	0.85	35		219	2			99	101	-4410	
951+00	to	953+00	2261		2261	755	1506	0.75			1129	0			0	0	-3281	
953+00	to	960+50	33034		33034	3084	29950	0.85			25457	0			0	0	22176	
960+50	to	965+00	27479		27479	2198	25281	0.90	152		22905	65			0	65	45016	
965+00	to	965+50	1140		1140	212	928	0.85			788	0			0	0	45804	
965+50	to	966+50	716		716	300	416	0.75			312	162			61	223	45893	
966+50	to	990+50	8273	380	8653	1845	6808	0.85	2		5789	60003	0		7117	67120	-15438	
990+50	to	993+50	2014		2014	769	1245	0.75			934	291			153	444	-14948	
993+50	to	1016+50	6063	309	6372	1336	5036	0.85			4280	50897	30		6467	57394	-68062	
SUBTOTAL			214907	1651	216558	35068	181490		234	0	153322	174774	908	0	26468	202150	-68062	
1. BCY = Bank Cubic Yard = One cubic yard of material as it lies in the natural bank state. CCY = Compacted Cubic Yard = One cubic yard of material after it has been compacted to the specification density. 2. About 12 inches of material loss due to compaction. Accounted for in roadway cross-sectioning. 3. Recycled asphalt concrete pavement from roadway obliteration material suitable for roadway embankment (assume 4" depth removed from surface). 4. Depth assumed for topsoil stripping and backfill = 6 inches (use to cover slopes and revegetate). 5. Material set aside along the project to dress 2:1 slopes that do not blend with the natural surroundings.																		
DO NOT ASSUME THAT THE SHRINK/SWELL FACTORS INDICATED ON THE PLAN SHEETS INDIRECTLY INDICATE THE AMOUNT OF ROCK OR DEPTH TO ROCK TO BE EXPECTED IN THE SPECIFIC CUT OR EXCAVATION. MORE OR LESS ROCK MAY BE ENCOUNTERED IN THE EXCAVATIONS THAN INFERRED FROM THE SHRINK/SWELL FACTORS SHOWN ON THE PLAN SHEETS. FOR SUBSURFACE INFORMATION, REFER TO THE PROJECT GEOTECHNICAL REPORT.															BRUCE K MEYERS Licensed Professional Engineer No. 8336-C HAWAII, U.S.A. The work was prepared by me or under my supervision and construction of this project will be under my observation. Expiration Date of License 4/06			
SPECIAL METHODS AND EQUIPMENT WILL BE NECESSARY TO EXCAVATE AND EMBANK MATERIALS CONSISTING OF ROCK. REMOVE SUCH MATERIAL TO THE LINES AND GRADES INDICATED REGARDLESS OF HARDNESS OR QUANTITY. REMOVAL OF SUCH MATERIAL TO THE LINES AND GRADES INDICATED SHALL NOT GIVE CAUSE FOR A CLAIM FOR ADDITIONAL COMPENSATION REGARDLESS OF HARDNESS OR DIFFICULTY IN REMOVING. CONSIDER THE EXCAVATED ROCK MATERIALS USABLE WHEN THE EXCAVATED ROCK MATERIALS ARE PROCESSED TO THE MAXIMUM PARTICLE SIZE AND GRADATION INDICATED IN THE SPECIFICATIONS.																		

GRADING SUMMARY (Sheet 3 of 3)															STATE	SADDLE ROAD PROJECT	SHEET NO.	TOTAL SHEETS
															HI	HI A-AD/STP 6(3) & 200(1)	C6	C23
STATION TO STATION			ROADWAY EXCAVATION			ADJUSTMENTS TO EXCAVATION					Total Excavation Available for Fills (CCY) ¹	ROADWAY EMB		ADJ TO EMB		Total Embankment (CCY)	Mass Ordinate	
			(+) Roadway Prism (BCY) ¹	(+) Approach Roads (BCY)	Subtotal	(-) Basalt Clinker Volume Loss ² (BCY)	20401 Total Excavation Material (BCY)	Shrink/Swell Factor	(+) Roadway Obliteration Material ³ (BCY)	(-) Topsoil Stripping in Cuts ⁴ (BCY)		(+) Roadway Prism (CCY)	(+) Approach Roads (CCY)	(+) Backfill Topsoil Stripping Under Fills ⁴ (CCY)	(+) Basalt Clinker Volume Loss ² (BCY)			
1016+50	to	1022+50	12070	2407	14477	1924	12553	0.75			9415	7232	1		984	8217	-66864	
1022+50	to	1023+00	874		874	215	659	0.85	11		572	0			0	0	-66292	
1023+00	to	1024+50	842		842	543	299	0.75			224	84			0	84	-66152	
1024+50	to	1026+00	271		271	391	-120	0.85			-102	345			109	454	-66708	
1026+00	to	1027+50	918		918	542	376	0.75			282	341			62	403	-66829	
1027+50	to	1030+00	2225		2225	946	1279	0.85			1087	5123			375	5498	-71240	
1030+00	to	1036+50	26587		26587	3309	23278	0.80			18622	0			0	0	-52618	
1036+50	to	1037+00	1621		1621	249	1372	0.85			1166	0			0	0	-51452	
1037+00	to	1042+50	11824		11824	2521	9303	0.75			6977	0			0	0	-44475	
1042+50	to	1049+00	706	859	1565	357	1208	0.85			1027	14665	11		2662	17339	-60787	
1049+00	to	1052+00	10424		10424	1570	8854	0.85	167		7693	32			0	32	-53126	
1052+00	to	1052+50	3432		3432	268	3164	0.85			2689	0			0	0	-50437	
1052+50	to	1055+50	26719		26719	1620	25099	0.95			23844	0			0	0	-26593	
1055+50	to	1068+50	20201		20201	3065	17136	0.85			14566	3381			1044	4425	-16452	
1068+50	to	1071+00	8399		8399	1251	7148	0.90			6433	0			0	0	-10019	
1071+00	to	1135+50	75229	1097	76326	14758	61568	0.85			52333	27278	15		6285	33578	8736	
1135+50	to	1136+50	2032		2032	402	1630	0.95			1549	0			0	0	10285	
1136+50	to	1148+50	1295		1295	1001	294	0.85			250	10146			2459	12605	-2070	
1148+50	to	1151+50	6920		6920	1135	5785	0.95			5496	70			0	70	3356	
1151+50	to	1165+00	7891		7891	2365	5526	0.85			4697	4467			1566	6033	2020	
SUBTOTAL			220481	4363	224844	38432	186412		178	0	158820	73165	27	0	15546	88738	2020	
TOTAL			542686	13359	556045	93829	462216		925	1104	390695	328247	2432	1644	56349	388672	2020	

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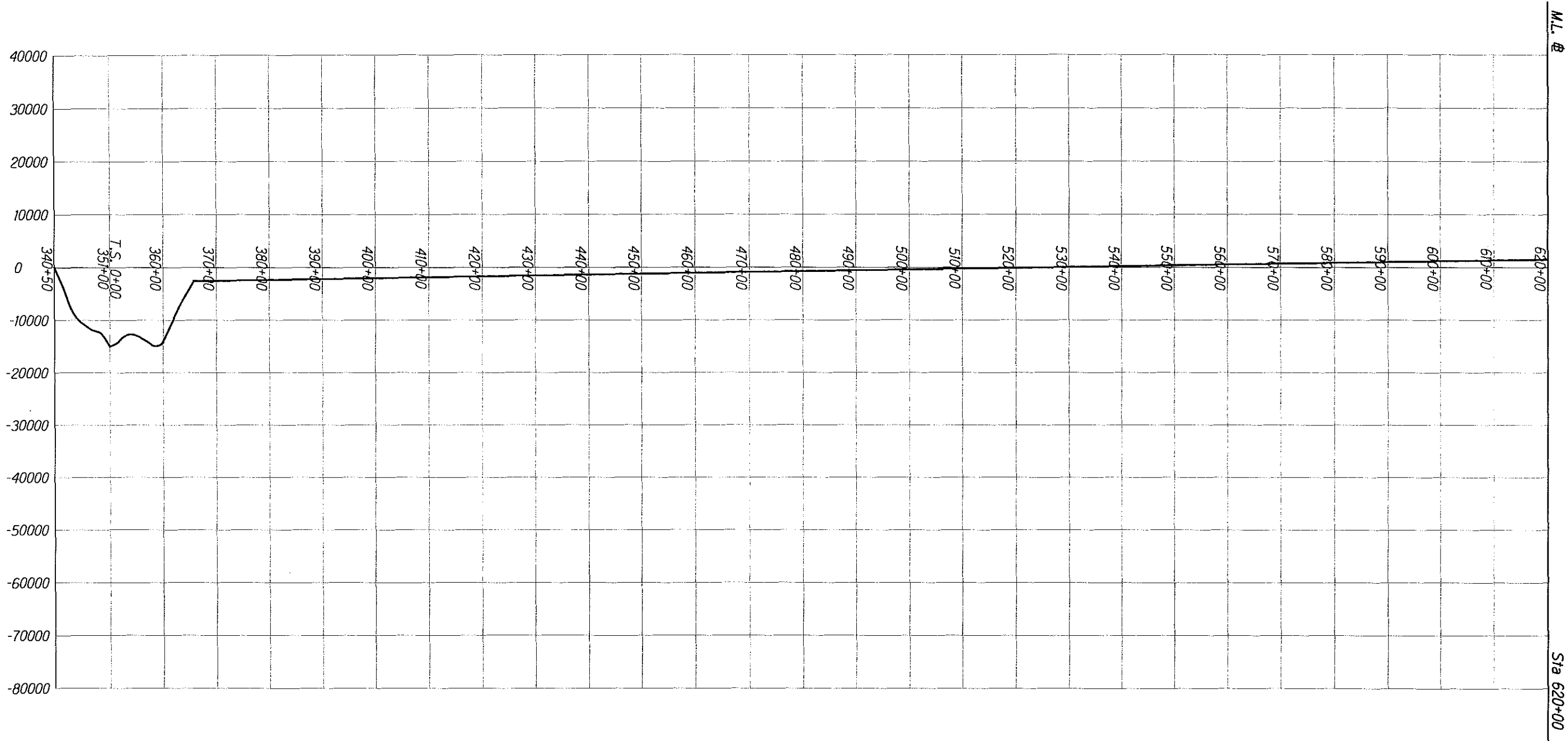
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BRUCE K MEYERS
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No. 8336-C
HAWAII, U.S.A.

The work was prepared by me or under my supervision and construction of this project will be under my observation.
Expiration Date of License 4/06

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STATE	SADDLE ROAD PROJECT	SHEET NO.	TOTAL SHEETS
HI	HI A-AD/STP 6(3) # 200(1)	C7	C22



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[Signature]

Expiration Date of License 4/06

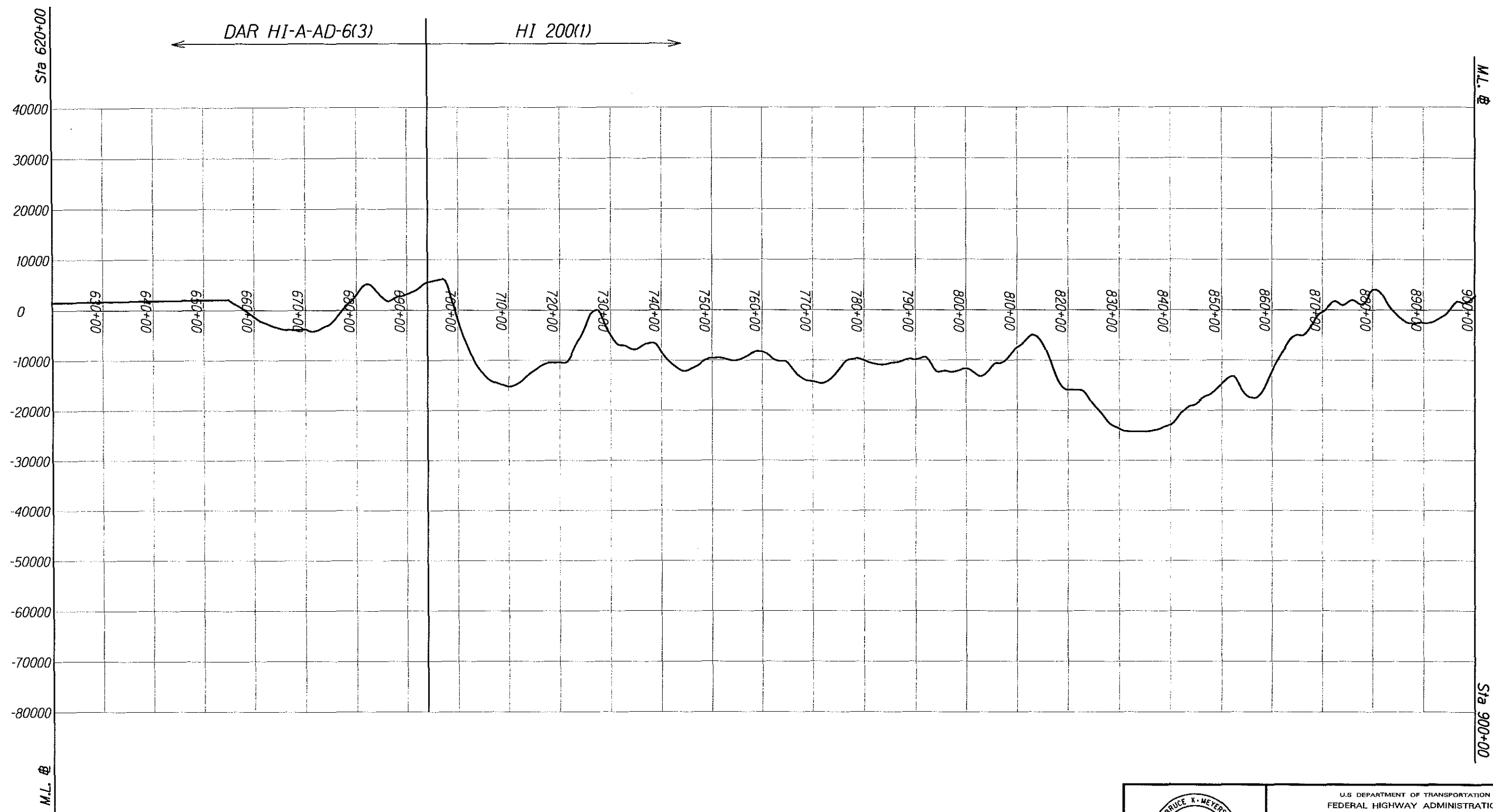
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

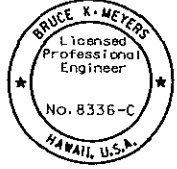
MASS HAUL DIAGRAM
STA 340+50 - 620+00

Scale: 1"=2000' Date: December 5, 2005

SHEET No. 1 OF 3

STATE	SADDLE ROAD PROJECT	SHEET NO.	TOTAL SHEETS
HI	HI A-AD/STP 6(3) # 200(1)	C8	C22





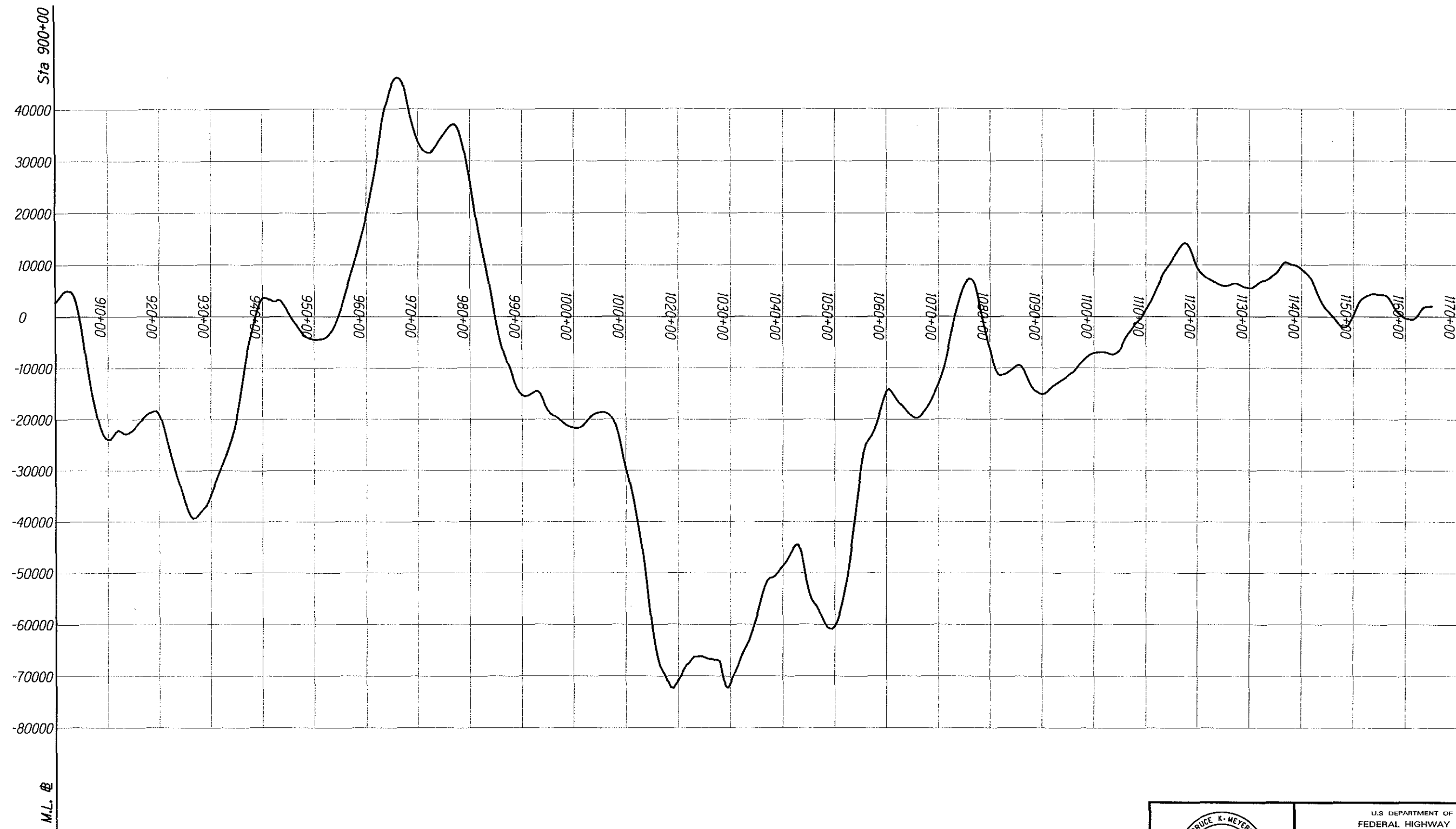
U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

MASS HAUL DIAGRAM
STA 620+00 - 900+00

Scale: 1"=2000' Date: December 5, 2005

SHEET No. 2 OF 3

STATE	SADDLE ROAD PROJECT	SHEET NO.	TOTAL SHEETS
HI	HI A-AD/STP 6(3) # 200(1)	C9	C22



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No. 8336-C
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The work was prepared by me or under my supervision and construction of this project will be under my supervision.

[Signature]
Expiration Date of License 3/08.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

MASS HAUL DIAGRAM
STA 900+00 - 1165+00

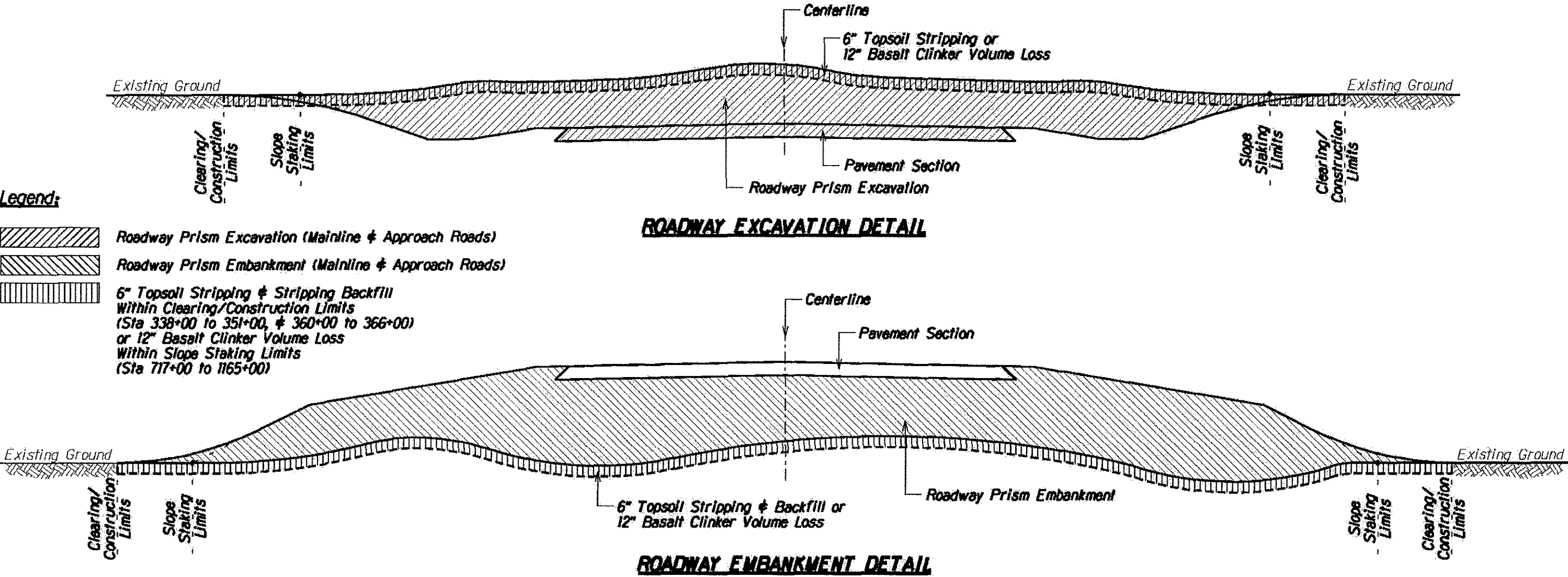
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SHEET No. 3 OF 3

TYPICAL GRADING DETAIL

STATE	SADDLE ROAD PROJECT	SHEET NO.	TOTAL SHEETS
HI	HI A-AD/STP 6(3) & 200(1)	C10	C23

STATION TO STATION	ROADWAY EXCAVATION			ADJUSTMENTS TO EXCAVATION						Total Excavation Available for Fills (CCY) ¹	ROADWAY EMB		ADJ TO EMB		Total Embankment (CCY)	Mass Ordinate
	(+) Roadway Prism (BCY) ¹	(+) Approach Roads (BCY)	Subtotal	(-) Basalt Clinker Volume Loss ² (BCY)	20401 Total Excavation Material (BCY)	Shrink/Swell Factor	(+) Roadway Obliteration Material ³ (BCY)	(-) Topsoil Stripping in Cuts ⁴ (BCY)	(-) Conserved Lava for Slope Finish ⁵ (BCY)		(+) Roadway Prism (CCY)	(+) Approach Roads (CCY)	(+) Backfill Topsoil Stripping Under Fills ⁴ (CCY)	(+) Basalt Clinker Volume Loss ² (BCY)		



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The work was prepared by me or under my supervision and construction of this project will be under my observation.

Expiration Date of License 4/08