NPS Form 10-900 (Rev. 10-90) OMB No. 1024-0018

United States Department of the Interior National Park Service

State or Federal agency and bureau

NATIONAL REGISTER OF HISTORIC PLACES REGISTRATION FORM

W/A 2 20

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in How to Complete the National Register of Historic Places Registration Form (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property historic name Hana Belt Road other names/site number Belt Road, Hāna Road, Hāna Highway, Pi ilani Highway 2. Location street & number Hāna Highway (State Rte. 360), Pi'ilani Highway (Rte. 31) not for publication ____ city or town Makawao District to Hāna District vicinity Haʻikū, Keʻanae, Nāhiku, Hāna, Kīpahulu state Hawai'i code HI county Maui code 009 zip code 3. State/Federal Agency Certification As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this ____ nomination ____ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion. the property ____ meets ____ does not meet the National Register Criteria. I recommend that this property be considered significant ___ nationally \checkmark statewide ___ locally. (___ See continuation sheet for additional comments.) Signature of certifying official State or Federal agency and bureau In my opinion, the property ____ meets ____ does not meet the National Register criteria. (____ See continuation sheet for additional comments.) Signature of commenting or other official Date

Hawai'i - Hāna Belt Road, Maui County 4. National Park Service Certification Signature of Keeper I, hereby certify that this property is: Date of Action ventered in the National Register See continuation sheet. ____ determined eligible for the National Register __ See continuation sheet. ____ ___ determined not eligible for the National Register __ removed from the National Register ___ other (explain): _____ 5. Classification Ownership of Property (Check as many boxes as apply) ___ private x public-local x public-State ___ public-Federal Category of Property (Check only one box) ___ building(s) _x_ district ___ site ___ structure ___ object Name of related multiple property listing

(Enter "N/A" if property is not part of a multiple property listing.)

N/A

Number of Resources within Property Contributing Noncontributing ____ buildings ____ sites ____ objects 73 ____1 Total Number of contributing resources previously listed in the National Register N/A 6. Function or Use Historic Functions (Enter categories from instructions) Cat: Transportation Sub: road-related Current Functions (Enter categories from instructions) Cat: Transportation Sub: road-related 7. Description **Architectural Classification** (Enter categories from instructions) Other: OTHER: roadways; bridges: reinforced concrete, girder, flat slab, masonry (basalt or lava rock) Materials (Enter categories from instructions) foundation _____ roof other asphalt, concrete, masonry (lava rock)

8. Statement of Significance

	< "x	le National Register Criteria ' in one or more boxes for the criteria qualifying the property for National Register
		Property is associated with events that have made a significant contribution to the tterns of our history.
	В	Property is associated with the lives of persons significant in our past.
const	truc	Property embodies the distinctive characteristics of a type, period, or method of tion or represents the work of a master, or possesses high artistic values, or represents and distinguishable entity whose components lack individual distinction.
	D	Property has yielded, or is likely to yield information important in prehistory or history.
Crite	ria (Considerations
(Mari	k "X	" in all the boxes that apply.)
Prop	erty	is:
	Α	owned by a religious institution or used for religious purposes.
	В	removed from its original location.
	С	a birthplace or a grave.
	D	a cemetery.
	E	a reconstructed building, object, or structure.
	F	a commemorative property.
	G	less than 50 years of age or achieved significance within the past 50 years.
		Significance ategories from instructions)
<u>Engi</u>	neer	ring
<u>Socia</u>	lН	istory
Tran	spo:	rtation
Com	mer	rre

а

Hawai'i - Hāna Belt Road, Maui County Period of Significance circa 1900 to 1947 Significant Dates circa 1900 to 1947 Significant Person (Complete if Criterion B is marked above) Cultural Affiliation Architect/Builder County engineers, including Hugh Howell, Paul Low, and A. H. Wong; builders were county employees, prison labor, and private contractors. Private contractors included Wilson and McCandless, Hugh Howell Engineering Company, and Moses Akiona, Ltd. Designers also included William D'Esmond, architect; Joseph Matson, and D. Kapohakimohewa. 9. Major Bibliographical References Bibliography (Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.) Previous documentation on file (NPS) ____ preliminary determination of individual listing (36 CFR 67) has been requested ___ previously listed in the National Register previously determined eligible by the National Register designated a National Historic Landmark ____ recorded by Historic American Buildings Survey ____ recorded by Historic American Engineering Record # _____

NPS Form 10-900-aOMB No. 1024-0018

NPS Form 10-900-aOMB No. 1024-0018 Hawai'i - Hāna Belt Road, Maui County Primary Location of Additional Data ____ State Historic Preservation Office X_ Other State agency ___ Federal agency ___ Local government ___ University

Name of repository:

___ Other

State of Hawai'i Department of Transportation

10. Geographical Data Acreage of Property ______

UTM References

(Place additional UTM references on a continuation sheet)

Zone Easting Northing	Zone Easting Northing
1 04 787810 2314160	3 04 789510 2312640
2 04 788850 2313440	4 04 789860 2312530

X See continuation sheet.

Verbal Boundary Description

(Describe the boundaries of the property on a continuation sheet.)

The boundaries of the nominated district are delineated by the course of the Hāna Belt Road. The right-of-way is approximately 40′ wide and is variable along the entire length of the road. The historic district begins .2 miles west of Mile Marker 3 on the Hāna Highway, State Route 360, near Huelo, and ends on the south end of Koukou'ai Bridge near Kīpahulu on Route 31.

Boundary Justification

(Explain why the boundaries were selected on a continuation sheet.)

The boundaries are coterminus with the Hāna Belt Road's historic right-of-way. The beginning and end points were selected to encompass the portion of the Hāna Belt Road that retains the greatest historic integrity and character. This section of roadway is relatively unaltered and is the most spectacular portion of Maui's historic belt road system, both in its scenery and its historic character. The boundaries include the highest concentration of stylistically consistent historic bridges in the State of Hawai'i.

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United States Department of the Interior National Park Service

	INUATION SHE		J PLACES
Sectio	n 10 <u>Geograp</u>	hical Data Pa	age2
Name	of property Hān	a Belt Road	
Count	y and State <u>Ma</u>	aui County, Ha	wai'i
		·	
UTMs	continued:		
	zone/easting	northing	points 1-4: Haʻikū, Hawaiʻi quad
5	04/790890	2311540	
6	04/791260	2311740	
7	04/791400	2311610	
8	04/792250	2310930	
9	04/793400	2310360	
10	04/793620	2310280	points 5-17: Ke'anae, Hawai'i quad
11	04/794270	2309800	•
12	04/794310	2309020	
13	04/795250	2309060	
14	04/796560	2309440	
15	04/796790	2309280	
16	04/797770	2308430	
17	04/797540	2306640	
18	04/797580	2305320	
19	04/797800	2305090	
20	04/798000	2304760	
21	04/798680	2304860	
22	04/798890	2304800	
23	04/799550	2304630	points 18-32: Nāhiku, Hawai'i quad
24	04/799760	2304420	•
25	04/799920	2304330	
26	04/800000	2304410	
27	04/800520	2304260	
28	04/800880	2304190	
29	04/801930	2303950	
30	04/802190	23033830	
31	04/		

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Section 10 <u>Geographical Data</u> Page <u>3</u>				
of property Hāna	Belt Road			
		Hawai'i		
-	,			
continued:				
zone/easting	northing			
04/902910	2202440			
•				
•		points 33-47: Hāna, Hawai'i quad		
•		points 55, 47, Fland, Flawai Fqua		
•				
	2295650			
,				
04/811030	2290640			
04/810240	2290700			
04/809900	2290260			
04/809480	2290260			
04/809190	2290300			
04/809070	2290210	points 48-60: Kīpahulu, Hawai'i quad		
04/808730	2289420			
04/808500	2289330			
04/808210	2289200			
04/808000	2289200			
04/807770	2288590			
04/807680	2288060			
	of property Hand and State Marcontinued: zone/easting 04/803810 04/803910 04/804900 04/804290 04/804290 04/805350 04/805650 04/805650 04/807160 04/807160 04/807630 04/812440 04/812960 04/812960 04/812580 04/81030 04/812580 04/81030 04/809900 04/809900 04/809480 04/809190 04/80970 04/808730 04/808210 04/808000 04/8087770	of property Hāna Belt Road and State Maui County, I continued: zone/easting northing 04/803810 2303440 04/803910 2303270 04/804000 2303160 04/804170 2303130 04/804290 2303000 04/804500 2303020 04/805350 2303020 04/805650 2302900 04/807160 2302510 04/807160 2302510 04/807160 2302510 04/812960 2295650 04/812960 2293760 04/812960 2293760 04/812580 2292900 04/811030 2290640 04/810240 2290700 04/809900 2290260 04/809480 2290260 04/809190 2290260 04/809190 2290260 04/80970 2290210 04/808730 2289420 04/808700 2289330 04/808210 2289200 04/8087770 2288590		

11. Form Prepared By	
name/title Dawn E. Duensing, historian	
organization Maui County Cultural Resources Commission date 1/13/01	
street & number P.O. Box 888 telephone (808)572-6583	
city or town Makawao state HI zip code 96768	_
Additional Documentation. Submit the following items with the completed form:	
Continuation Sheets	
Maps	
A USGS map (7.5 or 15 minute series) indicating the property's location.	
A sketch map for historic districts and properties having large acreage or numerous resources.	
Photographs	
Representative black and white photographs of the property.	
Additional items (Check with the SHPO or FPO for any additional items)	
Property Owner(Complete this item at the request of the SHPO or FPO.)	
name State of Hawai'i, Department of Transportation	
street & number 869 Punchbowl Street telephone (808)587-2150	
city or town <u>Honolulu</u> state <u>Hawai'i</u> zip code <u>96813</u>	
name County of Maui, Department of Public Works & Waste Managementstreet & number200 S. High Street telephone(808)270-7845	
city or town Wailuku state Hawai'i zip code 96793	

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NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

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Name of property <u>I</u>	<u> Hāna Belt Road</u>	
County and State	Maui County, Hawai'i	

Narrative Description

(Describe the historic and current condition of the property on one or more continuation sheets.)

The Hāna Belt Road is coterminous with its historic right-of-way. The Hāna Highway portion of the "belt road" traverses approximately fifty-one miles along Maui's north and east coast from Kahului in central Maui to the remote East Maui community of Hāna. After Hāna, the road continues as the Pi'ilani Highway and circles back around East Maui's south side, a distance of thirty-seven miles. Together, these East Maui roads were part of Maui's "belt" road system around the entire island. The proposed historic district includes approximately forty-two miles of road from .2 miles west of Mile Marker 3 on the Hāna Highway near Huelo to Koukou'ai Bridge on Pi'ilani Highway near the Kīpahulu section of Haleakalā National Park. The narrow road winds around more than 600 curves and over fifty-nine bridges. The Hana Belt Road is famous for its one-lane bridges with sharp approaches and encompasses the highest concentration of unaltered and stylistically consistent historic bridges in Hawai'i. The Belt Road to Hāna is notable for its breathtaking scenery as it passes waterfalls, v-shaped valleys, and small villages, often hugging the precipitous sea cliffs on Maui's rugged coastline. The roadway width varies from less than 16' wide along the sea cliffs and other rugged terrain to approximately 22' wide through level topography and residential areas. Along most of the roadway, there is no shoulder or a very narrow shoulder. The road's alignment dates to its construction in the 1920s. The Belt Road is the only overland automobile route that connects East Maui communities with the rest of the island. The period of significance is circa 1900 when Mauians began calling for an improved road and a rudimentary wagon road was constructed near Nāhiku, to 1947 when the last bridge was built to service the Hāna Belt Road.

TOPOGRAPHY AND EARLY ROAD

The Hāna Belt Road traverses through some of Hawai'i's most rugged topography and rainiest climate. The island of Maui is comprised of two shield volcanoes joined by an isthmus, which constitutes east and west Maui. East Maui, where the Hāna Belt Road is located, is the immense Haleakalā, a dormant volcano more than 10,000' in elevation. In earlier times, lava flows poured into the ocean to create the jagged coastline along which the road is aligned. Centuries of stream erosion from the wet, tradewind climate on Haleakalā's windward (northeastern) slope cut a rugged terrain of great sea cliffs and v-shaped valleys. The wet climate allowed

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Name of property]	- <u>Iāna Belt Road</u>	
County and State	Maui County, Hawai'i	

Narrative Description (continued)

dense forests to grow over the rough terrain and helped make the Hāna District in East Maui one of Hawai'i's most isolated and inaccessible areas.

Prior to 1450 A.D., Maui was divided into two separate kingdoms, one with a court at Lahaina, the other with a court in Hāna. The East Maui coastal area was well populated in ancient times, but had little contact with the rest of Maui due to its isolated location. Traditionally, Hawaiians preferred to rely on their highly-developed navigational skills and traveled by canoe. As a result, Hāna was often politically tied to the more accessible communities across the channel on the island of Hawai'i. In the sixteenth century, Maui's King Pi'ilani conquered East Maui and pulled Hāna into his political sphere. Pi'ilani was notable for his public works projects, including the *Alaloa*, or main road, which began in West Maui.¹

The predecessor trail to the Hāna Belt Road was built by Pi'ilani's son, Kihapi'ilani, in the sixteenth century. The trail was paved with hand-fitted basalt (lava) rocks. The 1848 account of Moses Manu noted, "This road was treacherous and difficult for the stranger, but when it was paved by Kihapi'ilani this road became a fine thing." When completed, the road was 4' to 6' wide, 138 miles long, and encircled the entire island. With the completion of Kihapi'ilani's East Maui trail, known as the King's Highway, Maui became the only island in the Hawaiian chain to have a "belt" road that completely encircled it. In 1828, missionaries noted that the trail was "paved" and extended over thirty miles. They reported that it was a great help in ascending and descending the steep mountains and cliffs in the area. The early trail's switchbacks over the mountains near Honomanū were still visible in the 1940s. Today, intact portions of the King's Highway remain, although most of the road has been obliterated by agriculture or paved over by modern roadways, including the Hāna Belt Road.

¹ Gail Bartholomew, *Maui Remembers: A Local History*. (Honolulu: Mutual Publishing), 1994, 2.

² Bartholomew, *Maui Remembers*, 2; Trust for Public Land and Bay Pacific Consulting, *East Maui Resource Inventory*, Prepared for the Rivers, Trails, and Conservation Assistance Program, National Park Service, U.S. Department of the Interior (Honolulu: 1998), 9.

³ E. E. Pleasant, "Maui 100 Years Ago: The Old Trail to Hāna." *The Maui News*, June 13, 1942.

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Hawai'i - Hāna Belt Road, Maui County

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Name of property Hāna Belt Road
County and State Maui County, Hawai'i

Narrative Description (continued)

THE HANA BELT ROAD

The modern history of the Hāna Belt Road began in the 1870s when fifteen miles of unpaved road was built from central Maui into East Maui's rain forest to facilitate the construction of the Hāmākua Ditch, which was completed in 1878. The ditch was an extraordinary nineteenth century engineering marvel built to ensure the economic success of sugar by bringing water from rainy East Maui to central Maui's arid plantations. In 1900, Mauians began considering the necessity of extending a good wagon road through to Hāna, which would be part of the island's "belt" (around-the-island) road system. That year, a rudimentary road was built from Ke'anae to Nāhiku to service the Nāhiku Rubber Company. Construction through this country was difficult due to the terrain and climate. The road was surfaced with cinder, but was not adequate for automobile traffic. In 1905, the Superintendent of Public Works reported that the road in East Maui traversed through very rough country and as a result, was built "as narrow as possible in order to construct, with the money available, the maximum length of road." Overland travel continued by horse and many travelers followed the trails along the irrigation ditches. Steamer remained the preferred mode of transportation for travel along the Hāna Coast. 5

By the early 1900s, Maui leaders began planning for an improved route to Hāna. Beginning in 1908 and reaching a peak in 1911, numerous concrete bridges were built along the Hāna Coast in anticipation of road improvements. In 1914, the Maui County Board of Supervisors lobbied the Territory of Hawai'i Legislature for funding to extend the road from Kailua to Ke'anae. Territorial Governor Pinkham was adamantly opposed to the Hāna Belt Road and blocked most of its funding. Despite the governor's opposition, money was appropriated and the Wilson and McCandless firm completed a "several-mile" section of road between Ke'anae and Nāhiku in

⁴ Bartholomew, *Maui Remembers*, 161; Spencer Mason Architects, *State of Hawai'i Historic Bridge Inventory and Evaluation*, prepared for the State of Hawai'i, Department of Transportation, Highways Division. Draft. (Honolulu), 1996, IV 12.

⁵ "Raymond Adds Ginger To Loan Fund Meeting," *The Maui News*, May 23, 1914.

⁶ Spencer Mason Architects, State of Hawai'i Historic Bridge Inventory and Evaluation, IV 12.

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Narrative Description (continued)

1914. *The Maui News* reported that this "fine piece of road" was of "practically no benefit" since it ended in a forest reserve miles from any habitation. The newspaper noted that one section of road closely traversed along the mountainside a few thousand feet above sea level, with other sections following the Koʻolau Ditch. The road was praised for passing through some of the most spectacular scenery in the islands. Although money had been pledged to carry the road all the way into Keʻanae, Governor Pinkham refused to approve the appropriation and Maui was left with an inaccessible stretch of road.⁷

By 1920, the belt road from central Maui to Kailua was suitable for modern automobile traffic. Parts of the road were paved with macadam to ensure that it was passable during the rainy season. Keeping the road open was essential as it was the primary transportation route into Maui's pineapple country and muddy roads had periodically shut down pineapple operations. Maui County stretched funding as far as it could by using convict labor on the belt road projects. Territorial funding to extend and complete the coastal highway to Hāna, however, continued to be a problem and was not resolved until Wallace Farrington became governor. Major sections of the Hāna Coast remained inaccessible to automobile traffic, namely the region between Kailua and Nāhiku, the area with the most challenging topography. With Governor Farrington's strong backing, the major portion of today's Hāna Highway was constructed in two separate construction projects between 1923 and 1926. The road between Kailua and Ke'anae was built from 1923 to 1925. Immediately thereafter, a road between Wailua and Nāhiku that connected with the route into Hāna was constructed and opened to the public in 1926.

⁷ "Raymond Adds Ginger To Loan Fund Meeting," *The Maui News*, May 23, 1914; "Belt Road Or Nothing Says Board," *The Maui News*, June 20, 1914; "Let's Have The Belt Road Money," *The Maui News*, June 20, 1914; "No Ke'anae Highway Says Governor," *The Maui News*, July 18, 1914; "Road Pau on Nāhiku Part Belt Road," *The Maui News*, November 14, 1914.

⁸ "No Money For Belt Road For Two Years," *The Maui News*, May 7, 1920; "Convict Labor to Work on Belt Road," *The Maui News*, September 17, 1920.

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County and State Maui County, Hawai'i	

Narrative Description (continued)

Maui County Engineer Paul Low was credited with supervising "one of the most difficult and at the same time finest pieces of road engineering" on Maui. In January 1923, Low presented his estimates to complete the Hāna road as two projects, the first of which was the roadway extension from Kailua to Ke'anae, a distance of 11.67 miles, which would require the excavation of 273,000 cubic yards of earth. The second phase of the project extended the road from Ke'anae to Wailuaiki near Nāhiku, a distance of 5.67 miles that called for almost 30,000 cubic yards of earth to be excavated. Low used earlier survey work done by engineers of the Maui Loan Fund Commission, which had been created by the Territorial Legislature to oversee special funds for Hawai'i's belt road systems. Low credited engineers Harvey and Howell with designing the original plans. (Hugh Howell also served as Maui County engineer between 1906 and 1914.) In addition to the earlier surveys, Low and a team of county surveyors scouted the route for the Hāna Belt Road, took field notes, and prepared plans and specifications. Low's 1923 estimates included engineering costs, excavation, fill, retaining walls, culverts, bridges, macadam pavement, and tunnels to relocate some ditches. The new road was to be built on a 16'-wide bench, with a pavement width of 12'-0".

The Kailua to Ke'anae section of the belt road took two years to build. Crews worked from both ends of the project and met in May 1925. The road opened to the public on June 11, 1925. The new section of road was described as "serpentine" as it passed through a dozen gulches and wound around "mountain sides that dip into the ocean." Although the distance between the two communities was only four miles as the crow flies, the mileage needed to complete the road around the difficult topography was nearly twelve miles. In order to build the new road, workers were lowered by rope over the steep cliffs and gulches to dig a footing, set their drills, bore holes, and set the powder and fuses that would blast the new roadbed. The most spectacular piece of the road was also considered its most impressive engineering feat. This portion of road traversed down the mountainside (west) to the bottom of Honomanū Gulch,

⁹ "Steam Shovels Meet Next Week," *The Maui News*, July 31, 1926.

¹⁰ "Itemized Costs Proposed Belt Road Presented," *The Maui News*, January 19, 1923; "Estimate Made Belt Road Cost By Way Kailua," *The Maui News*, January 13, 1923; "Magnificent Scenery Unfolds Before Eyes of Travelers On Motor Trip Over New Road Leading To Hāna," *The Maui News*, December 22, 1926.

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County and State	Maui County, Hawai'i

Narrative Description (continued)

where it crossed a bridge and proceeded up the other mountainside (east side of the gulch) to a peak on the Ke'anae side. Motorists had impressive views from both sides of the gulch, including a view of the road on the other side. Governor Farrington described the scene as a "gorgeous spectacle [with] the blue sea in many places hundreds of feet below you, the white surf beating against the shore line and these wonderful green hills, the many gulches and every playing light, shade and color on the sides of beautiful and majestic Haleakalā." *The Maui News* noted that the road was still rough in many places, unsurfaced, and in need of widening so that cars could pass each other at any point. The article pointed out the road opened up "marvelously beautiful scenery" that most Maui residents had never seen. As a piece of engineering, the editor claimed that there was nothing in the Territory of Hawai'i or perhaps the world quite like the new road to Ke'anae. A Los Angeles-based writer admired the landscape features, including bamboo thickets, mountain apple, and native kukui trees. 11

Work began immediately on the final link of the Hāna Belt Road project. In 1925, Maui's road program received a substantial boost when President Calvin Coolidge approved a bond issue for the Territory of Hawai'i that included \$150,000 to continue construction of the Hāna Belt Road. County Engineer Low reported that finishing work was being done on the newly completed section to Ke'anae, including top-dressing the road, finishing culverts, and improving bridge approaches. Stone masons were building wing walls on the bridges and retaining walls in the valleys. Crews with forty men each had started to build the last link of the road from both the Hāna and Ke'anae sides, which was a length of 3.5 miles. This section was benched at 16'-0" wide, although plans called for the road to eventually be widened to 20'-0" after it had settled. Several bridges near Wailua were also built during this phase, including the Waikani Bridge and the bridge at West Wailuanui. Construction of the last link of road was difficult as

[&]quot;First Car Runs Over Belt Road Kailua-Ke'anae," *The Maui News*, May 23, 1925; "Dream Of Thirty Years Ago About To Be Realized," *The Maui News*, June 6, 1925; "Hundreds Motor to Ke'anae: Maui Turns Out To See Opening Of Scenic Road," *The Maui News*, June 13, 1925; "Magnificent Scenery Unfolds Before Eyes of Travelers On Motor Trip Over New Road Leading To Hāna," *The Maui News*, December 22, 1926; "Maui's New Road," editorial, *The Maui News*, June 17, 1925; "Wonder And Charm Of Maui Scenery To Be Pictured And Told Hundreds Of Thousands Readers On Mainland," *The Maui News*, August 15, 1925.

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County a	nd State	Maui C	County, I	Iawai'i_	_	

Narrative Description (continued)

much of the work consisted of blasting the solid rock in the area. Shovels on both sides of the project failed due to the stresses of working on solid rock cuts and the necessity of removing hundreds of tons of rock along the right-of-way. At times, the steam shovels could not do the work without considerable blasting and hand work. Heavy rains disrupted the project as well, causing floods and undermining embankments. In November 1926, a flood in the Wailuanui Valley caused a landslide over the road, washed out the scaffolding on the Waikani Bridge, and carried away 600 bags of cement to be used on the bridge. 12

The Hāna Belt Road was opened to the public on December 18, 1926. *Honiron*, a publication of Honolulu Iron Works, described the road as "spectacularly chiseled out of abrupt cliffs and precipitous valleys." It noted that miles of the roadway were nothing more than a 16'-wide shelf cut into the mountainside, with towering masses of rock above and sheer drops measuring hundreds of feet to the ocean below. When asked how the scenery of the new section of road compared to the Kailua-Ke'anae section, Low commented that there was no comparison. He admired the section of road above the Wailua Valley that traveled along a narrow ledge for about a mile and provided a lovely panorama of *taro* patches and rice fields in the quaint village of Wailua below. *The Maui News* noted that the newly completed Hāna Belt Road was the "great road making achievement in the Islands, fraught with tremendous difficulties in engineering and construction work" and completed by "dare-devil exploits." The paper claimed the road was the most scenic driveway in the world, with vistas of lofty mountains, the Pacific Ocean, wild canyons, cataracts, waterfalls, and luxurious tropical vegetation. Signs marked "bad turn" and "go slow" were installed to mark dangerous curves and other points in the road. The average speed for driving the Hāna Belt Road was 20 m.p.h. Although Low's

[&]quot;Coolidge Approves Proposed \$2,590,000 Hawai'i Bond Issue," The Maui News, August 22, 1925; "Kailua-Köpili'ula Road Work Making Headway, Says Low," The Maui News, March 13, 1926; "Workers Blast Tons Of Rock On Belt Road," The Maui News, May 15, 1926; "Builders Progress In Construction Of Belt Road Project," The Maui News, April 17, 1926; "Flood Threatens Belt Road Bridge," The Maui News, November 17, 1926.

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1923 estimates to complete the road to Hāna included pavement, the road was not paved when it was opened in 1926. 13

Approximately six miles west of Hāna, near Upper Nāhiku, the Hāna Belt Road enters a coastal plain, which permits the alignment to run in a relatively straight path. The road passes over some minor gulches via a number of culverts and several bridges. Approximately four miles south of Hāna, the coastal plain ends and the road again passes through East Maui's challenging terrain. South of Ala'ala'ula Bridge, the road traverses through a series of rugged gulches similar to those near Ke'anae. South of Waikakoi Bridge, the road is benched into the high cliffs, around steep mountains and into the deep valley of Wailua Cove, before climbing back out of the valley. This portion of road is similar to the road near Honomanū Gulch near Ke'anae. Near Kīpahulu, the Hāna Belt Road passes through the scenic 'Ohe'o Gulch and Koukou'ai Gulch, which were spanned by concrete arch bridges in 1916 and 1911 respectively. It is uncertain when the belt road between Hāna and Kīpahulu was built, although it was being used for automobile traffic by the time the belt road was completed between Kailua and Hāna in 1926. ¹⁴

BRIDGES and CULVERTS

The Hāna Belt Road includes fifty-nine bridges and numerous culverts constructed between 1908 and 1947. Sixteen of these bridges are located on the Hāna Belt Road south of Hāna (Pi'ilani Highway, Route 31) and forty-three on the Hāna Belt Road between Hāna and Huelo

¹³ "Magnificent Scenery Unfolds Before Eyes of Travelers On Motor Trip Over New Road Leading To Hāna," *The Maui News*, December 22, 1926; "Honiron Tells Of Maui Road To Hāna," *The Maui News*, March 5, 1927; "Linking Up Maui," *The Maui News*, editorial, December 18, 1926; "Celebration Typical Of Maui," editorial, *The Maui News*, December 22, 1926.

[&]quot;Magnificent Scenery Unfolds Before Eyes of Travelers On Motor Trip Over New Road Leading To Hāna," *The Maui News*, December 22, 1926; "Maui Belt Road Circled," *The Maui News*, January 15, 1927.

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(Hāna Highway, Route 360). The narrowest bridges are approximately 12'-6" wide and the widest bridge is approximately 20'-6". More than half of the bridges are single span.

The majority of bridges in the district were constructed of reinforced cast-in-place concrete. County and territorial engineers utilized structural systems typical for the early twentieth century, including concrete arch, flat slab, girder, and simple tee-beam spans. Eighty percent of the concrete bridges were constructed between 1908 and 1929. Two unique bridges in the proposed historic district are rare surviving examples of masonry arch construction with basalt (lava rock). Many of the bridges have wingwalls, abutments, and piers constructed of concrete rubble masonry with basalt.

The majority of bridges featured two styles of parapet construction. Twenty-four bridges built between 1908 and 1915 had a solid-paneled, reinforced-concrete parapet with a peaked concrete rail cap. From 1916 to 1929, thirty-one bridges were built with a reinforced-concrete parapet of simple vertical concrete balusters and a square concrete rail cap. The Pu'uhaoa Bridge, built in 1910, and the Waiokamilo Bridge, built in 1921, featured a more ornate open-rail parapet. Two bridges constructed in 1947, Kawaipapa and Wailua, are unique along the corridor, with concrete post-and-beam railings. Some of the bridges have construction dates inscribed on the parapets.

Masonry Arch Bridges

Two masonry arch bridges are located on the Hāna Belt Road south of Hāna, the Hāhālawe Bridge and Wai'ele Bridge. Constructed in 1910, both bridges utilized cut basalt blocks to build the abutments and arch rings. The bridges feature solid reinforced-concrete parapets with rail caps. "A.D. 1910" is inscribed on the outer parapet of each bridge. The bridge walls and rock abutments may date to different construction periods, with the concrete parapets being from a later date. The bridges retain their historic integrity, and feature fine craftsmanship and uncommon materials. ¹⁶

¹⁵ Spencer Mason Architects, State of Hawai'i Historic Bridge Inventory and Evaluation, VI 191.

¹⁶ Spencer Mason Architects, State of Hawai'i Historic Bridge Inventory and Evaluation, VI 192.

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Concrete Arch Bridges

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After 1904, concrete arch bridges were built in Hawai'i, often using standardized plans. Two types of concrete arch bridges were constructed in Hawai'i, solid and open spandrel. The solid-spandrel bridges were generally arch-deck bridges in which the traffic deck rested upon the arch. Between 1916 and 1926, several bridges of this type were built on Maui, including three bridges built along the Hāna Coast: 'Ohe'o Bridge, Hanawī Bridge, and Kūhiwa Bridge. The 'Ohe'o Bridge spans the scenic 'Ohe'o Gulch in Haleakalā National Park.

The open-spandrel concrete arch bridges demonstrated sophisticated engineering for their day and marked the evolution of concrete technology toward lighter, yet larger structures. Koukou'ai Bridge was the first open-spandrel arch bridge on Maui and is an excellent example of early twentieth century bridge construction in the Hawaiian Islands. Built in 1911, it spans a deep gorge just south of Haleakalā National Park. The other open-spandrel concrete arch bridge on the Hāna Coast is the Waikani Bridge, built in 1926 by the Akiona Contracting Company and designed by local architect William D'Esmond. The bridge dramatically crosses a deep gorge at the end of a long valley and is perhaps the most aesthetically pleasing bridge along the Hāna Belt Road.¹⁷

Concrete Deck Girder and Flat Slab Bridges

Concrete deck girder, including tee-beam spans and simple deck girder, were the most common types of bridge built along the Hāna Belt Road. Territorial and county engineers realized that these structures were both economical and strong over short spans. As a result, the government began using concrete deck bridges rather than arch or timber bridges after 1911. The majority of these bridges were built between 1911 and 1928. The 1912 Waikamoi Bridge is one of the earliest remaining examples of a concrete slab bridge in Hawai'i. Concrete slab bridges were cast on site using formwork built by local carpenters. The earlier bridges featured a solid-

¹⁷ Spencer Mason Architects, *State of Hawai'i Historic Bridge Inventory and Evaluation*, VI 192-194.

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paneled reinforced-concrete parapet, with the later bridges utilizing simple vertical concrete balusters and a square concrete rail cap. ¹⁸ Three bridges date to the 1930s and two were built in 1947. The bridges constructed in 1947 utilized a post-and-beam design that is unique in the Hāna Belt Road corridor.

Culverts

Honolulu Iron Work's publication *Honiron* reported that numerous culverts along the Hāna Belt Road were necessary due to the to the demanding topography. During the 1920s, Calco Corrugated Culverts manufactured from Armco Ingot Iron were used in road construction. Today, there are also culverts constructed of basalt, which are visible from the road. Many of the culverts are topped by lava rock walls on the road. Numerous culverts are not visible from the road and are covered by dense vegetation, which makes it difficult to establish an accurate count of culverts, both contributing and non contributing, along the Hāna Belt Road.

Many culverts along the Hāna Belt Road were built using concrete abutments, concrete slabs, and small concrete parapets. Example of this type of structure include: Culvert #1 between Nā'ili'ilihā'ele Bridge and 'O'opuola Bridge; Culverts #2, #3, and #4 near Ke'anae between Palauhulu Bridge and Waiokamilo Bridge; Culverts #9 and #10 located in the town of Hāna, south of Kawaipapa Bridge near the Hāna Fire Station; and Kalena Culvert north of Koukou'ai Bridge.

Four distinctive culverts (Culverts #5, #6, #7, and #8) constructed of concrete abutments, concrete slabs, and open parapets with simple vertical concrete balusters and concrete rail caps are located west of Hāna and east of Honomā'ele Bridge. These structures vary in span length from 5'-5" to 14'-7". Another distinctive culvert is located adjacent to (east of) Waiokamilo Bridge and spans the Hāna Highway at the "Y" intersection with Wailua Road. Its parapets were built to match those of the Waiokamilo Bridge. Two culverts with concrete abutments,

¹⁸ Spencer Mason Architects, *State of Hawai'i Historic Bridge Inventory and Evaluation*, VI 195-198.

¹⁹ "Honiron Tells Of Maui Road To Hāna," *The Maui News*, March 5, 1927.

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concrete slabs, and solid parapets are Mo'omonui Culvert and Maluhiana'iwi Culvert. The construction dates are inscribed on each of these culverts.

To most observers, many of these culverts would be regarded as bridges, even though they are considered to be culverts by the State Department of Transportation. The State of Hawai'i Department of Transportation (DOT) considers a culvert to have a span of less than 10′-0″ in accordance with Federal Highway Administration guidelines. Some of these structures measured longer than 10′.

VISTAS and VIEWS

There is hardly a place along the Hāna Belt Road where motorists are not rewarded with a variety of scenic views, including the ocean, mountains, sea cliffs, waterfalls, small villages, native and exotic vegetation, and traditional landscapes.

Although it is sometimes difficult to find pullouts along the narrow road, viewpoints are scattered throughout the Hāna Belt Road corridor. At most of the bridges, motorists can park on either side to view waterfalls and valleys. The most impressive waterfalls are located at the Waikani Bridge, 'Ohe'o Bridge, and Wailua Bridge. The Kīpahulu District of Haleakalā National Park includes the picturesque 'Ohe'o Gulch; its pools are a popular swimming spot. Elements of the East Maui Irrigation Company ditchworks can be seen at numerous bridges along the road, including the Kōpili'ula Bridge. Just after the Kōpili'ula Bridge, the Hāna Belt Road runs parallel to the irrigation ditch for a short distance. Scenic views are provided at Kaumahina State Wayside near Ke'anae and Wailua Valley Lookout Park above the village of Wailua. Pua'a Ka'a State Park is directly adjacent to the road near Nāhiku. Traditional cultural landscapes of taro patches are viewed in the villages of Ke'anae and Wailua. Native vegetation along the Hāna Belt Road includes hapu'u fern, ko'a, kukui, and pandanus forests. Most of the vegetation along the road, however, is exotic, with species such as bamboo and ginger impacting the landscape. On the coastal plain near the town of Hāna are large ranching areas that were formerly used for sugar cane cultivation.

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ALTERATIONS

Maintaining the Hāna Belt Road over the years has been no easy task. Since the earliest days, highway crews have struggled to keep up with damage caused by landslides, rocks, vegetation, downed trees, and floods. A journalist driving the road in 1940 referred to it as a "paved trail following the line of the ditch through the wild jungle." The road was not completely paved until 1962. Over the years, lava-rock retaining walls and guardwalls were constructed in various locations along the road. These walls complement the historic character of the Hāna Belt Road.

In 1969, the State of Hawai'i transferred jurisdiction over the portion of the Hāna Belt Road between Hāna and Kīpahulu, which is now known as the Pi'ilani Highway, to the County of Maui. The Hāna Belt Road between Huelo and Hāna remained under the jurisdiction of the State of Hawai'i. The manner in which the road is maintained and preserved is significantly different between the two government agencies.

Although the state's portion of the Hāna Belt Road (Hāna Highway) between Huelo and Hāna retains its historic character and integrity, there have been alterations along the roadway. The most noticeable change to the state section of the Hāna Belt Road is the addition of w-beam and thrie-beam steel guardrails. It is unknown when the first guardrails were installed along the Hāna Belt Road. Concrete posts from earlier guardrails are still present along the roadside in some areas. Another change over the years has been road widening. There are still many segments of the road that are close to the original 16' width (especially on the cliffs near Ke'anae) and too narrow for cars to pass each other without yielding. The road, however, has been widened in most areas. In a few places where there is a more level topography, as through villages and near the beginning of the road near Huelo, the pavement is up to 22'-0" wide. In several locations, the Department of Transportation has used the new layers of asphalt during

²⁰ Spencer Mason Architects, State of Hawai'i Historic Bridge Inventory and Evaluation, IV 14.

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repaving projects to super-elevate curves, particularly in the area east of Wailua. On many bridges, added layers of asphalt have significantly shortened the height of the bridge parapets and asphalt often fills part of the openings between bridge railings. Other changes along the road include painting some bridges and lava rock walls white to increase nighttime visibility, installation of numerous cautionary signs ("one-lane bridge," "narrow road"), reflector signs, and reflectors in the pavement. There have been a few jersey barriers added to the road, usually in places where the roadbed is being undermined alongside a steep cliff.

In the mid 1990s, the road west of Ke'anae that traverses the steep mountainside on the east side of Honomanū Gulch was widened. Work included blasting and removing a large section of the mountain near the road's summit to relocate the damaged road (which was collapsing into the ocean) away from the cliff. A rock wall which does not match the character of the typical basalt parapets seen along the Hāna Belt Road was built between the mountain and the road to catch falling rocks. Concrete gutters were installed and wide shoulders were added. The state Department of Transportation has installed concrete gutters and new culverts in other locations along the road, especially in the area between Wailua and Nāhiku.

The bridges along the Hāna Belt Road retain their historic character. One notable exception is Kawaipapa Bridge. Constructed in 1947, the bridge was altered in 1991 when a new bridge was added to the to the west end of the original structure. The 1991 bridge expansion was modeled on the original bridge, with replications of the post-and-beam bridge walls. The consequence of the expanded bridge was that the original bridge lost its historic integrity and is a non-contributing structure.

The County of Maui section of the Hāna Belt Road, now called the Pi'ilani Highway, has been subjected to fewer changes than the state-maintained portion of the belt road. The county has widened the road in a few locations, but for the most part, the pavement is no widr than 18'-0" and often averages 15' to 16' wide. Some guardrails have been added, but not to the same extent as the state-maintained section of the Hāna Belt Road.

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Although the Hāna Belt Road has been improved over the years, many of the bridges along the road have suffered from a lack of maintenance. Many of the bridge walls originally averaged 34" high. The walls are now shorter due to repeated layers of asphalt. In many cases, the additional asphalt is approximately 12" deep. The majority of the bridges in the Hāna corridor have weeds and vegetation growing in the concrete joints. A few bridge walls have been damaged by accidents. Many of the damaged walls were repaired to match the original design, although in a few cases, damage was not repaired neatly or was repaired with a non-matching element. An example of repaired bridge wall is the Waikani Bridge balustrades, which were severely damaged on the west end. Rather than restoring the end of the bridge wall, the repair consisted of building a rock wall in place of the balustrades. Another example of a bridge alteration that does not match the original structure is Nua'ailua Bridge. Altered in 1940, the *mauka* (mountain side) parapet was replaced with a non-matching concrete wall, most likely as a result of road widening.

The Hāna Belt Road retains its historic character and integrity. For the most part, the road is relatively unaltered. The road's alignment has not been changed since it was completed in 1926, although sections of the road on sea cliffs have collapsed into the ocean and necessitated reconstruction. The road retains its historic character and integrity in its rural location and narrow lanes. The bridges retain historic integrity with sharp and narrow approaches, original materials, and original design. Although a majority of the bridges are quite simple in appearance, several bridges are more elaborate and were designed and built by masters. The bridge designs and materials survive intact, with a few minor exceptions.

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(Describe the historic and current condition of the property on one or more continuation sheets.)

Inventory of Contributing Bridges & Significant Culverts

Listed in geographical order east from Huelo:

<u>Hōlua Bridge</u>: constructed 1929; concrete tee-beam; one span, 48′-0″; total length 49′-0″; bridge width 16′-7″; approximate height above stream 28′-0″.

<u>Kailua Bridge</u>: constructed 1929; concrete tee-beam; one span, 39'-0"; total length 40'-0"; bridge width 20'-6"; approximate height above stream 18'-0".

<u>Nā'ili'ilihā'ele Bridge</u>: constructed 1930; concrete tee-beam; three spans, 21′-6″; total length 64′-0″; bridge width 20′-3″; approximate height above stream 20′-6″. Designer: County Engineer Office.

Culvert #1: concrete, one span, approximate length 9'-0".

'Oʻopuola Bridge: constructed 1925, altered 1931; concrete tee-beam; one span, 29′-0″; total length 30′-0″; bridge width 19′-8″; approximate height above stream 18′-6″. Designer: County Engineer Office.

<u>Makanali Bridge</u>: constructed 1928; concrete slab; one span, 18′-0″; total length 18′-0″; bridge width 16′-6″. Designer/builder: Department of Public Works.

<u>Ka'aiea Bridge</u>: constructed 1928; concrete tee-beam; one span, 20′-0″; total length 22′-0″; bridge width 16′-6″; approximate height above stream 15′-0″. Designer/Builder: Department of Public Works.

<u>Waikamoi Bridge</u>: constructed 1912; concrete slab; two spans, 19′-0″; total length 41′-0″; bridge width 12′-9″; approximate height above stream 17′-0″. Designer/Builder: Hugh Howell, Senior Engineer.

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<u>Puohokamoa Bridge</u>: constructed 1912; concrete tee-beam; two spans, 25′-0″; total length 56′-4″; bridge width 15′-3″, approximate height above stream 13′-0″.

<u>Haipua'ena Bridge</u>: constructed 1912; concrete slab; two spans, 16'-0"; total length 34'-6"; bridge width 12'-9"; approximate height above stream 11'-0". Designer/Builder: Hugh Howell, Senior Engineer.

<u>Kōlea (Punala) Bridge</u>: constructed 1911; concrete tee-beam; one span, 30′-0″; total length 34′-0″; bridge width 12′-8″; approximate height above stream 13′-0″. Designer/Builder: Hugh Howell, Senior Engineer.

<u>Honomanū Bridge</u>: constructed 1911; concrete tee-beam; two spans, 23'-0"; total length 48'-0"; bridge width 12'-8"; approximate height above stream 15'-0". Designer/Builder: Hugh Howell, Senior Engineer.

<u>Nua'ailua Bridge</u>: constructed 1911/altered 1940; concrete tee-beam; one span, 22'-0"; total length 35'-0"; bridge width 24'-0"; approximate height above stream 13'-0". Designer/Builder: Joseph Matson, Senior Engineer.

<u>Pi'ina'au Bridge</u>: constructed 1916; concrete tee-beam; one span, 27'-0"; total length 28'-5"; bridge width 19'-0"; approximate height above stream 19'-0".

<u>Palauhulu Bridge</u>: constructed 1916; concrete tee-beam; one span, 30′-0″; total length 31′-0″; bridge width 19′-10″; approximate height above stream 20′-6″.

Culvert #2: concrete, one span, approximate length 10'-0".

Culvert #3: concrete, one span, approximate length 15'-0".

Culvert #4: concrete, one span, approximate length 13'-0".

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<u>Waiokamilo Bridge</u>: constructed 1921, altered 1937; concrete tee-beam; one span, 20'-0"; total length 24'-0"; bridge width 22'-1"; approximate height above stream 11'-0". Designer: D. K. Kapohakimohewa.

Waiokamilo Culvert: concrete, one span, approximate length 10'-3".

<u>Waikani Bridge</u>: constructed 1926; concrete arch, open spandrel; one span, 82′-6″; total length 108′-0″; bridge width 17′-7″; approximate height above stream 32′-0″. Designer: William D'Esmond. Builder: Moses Akiona.

<u>West Wailuaiki Bridge</u>: constructed 1926, altered 1937; concrete tee-beam; three spans, 24'-6"; total length 62'-6"; bridge width 19'-7"; approximate height above stream 15'-0". Designer: A. H. Wong.

<u>East Wailuaiki Bridge</u>: constructed 1926; concrete tee-beam; one span, 31'-0"; total length 34'-5"; bridge width 18'-4"; approximate height above stream 16'-0". Designer/builder: A. P. Low, County Engineer.

<u>Kōpili'ula Bridge</u>: constructed 1926; concrete tee-beam; two spans, 34'-2"; total length 76'-7"; bridge width 14'-4"; approximate height above stream 6'-0".

<u>Pua'aka'a (Waiohue)</u> <u>Bridge</u>: constructed 1926; concrete tee-beam; one span, 19′-6″; total length 20′-2″; bridge width 22′-0″; approximate height above stream 7′-8″.

<u>Waiohue Bridge</u>: constructed 1926, altered 1937; concrete tee-beam; two spans, 16'-7"; total length 40'-0"; bridge width 13'-2"; approximate height above stream 10'-0".

<u>Waiohuolua Bridge</u>: constructed 1920, altered 1970; concrete tee-beam; one span, 15′-0″; total length 19′-0″; bridge width 12′-9″; approximate height above stream 8′-0″. One bridge wall was replaced by w-beam guardrail; the original bridge wall is in the stream below.

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Bridge #2: constructed 1920; concrete tee-beam; one span, 16'-7"; total length 20'-0"; bridge width 12'-6"; approximate height above stream 8'-0".

<u>Pa'akea Bridge</u>: constructed 1920, altered 1937; concrete tee-beam; two spans, 16'-0"; total length 40'-0"; bridge width 12'-9"; approximate height above stream 8'-0".

<u>Kapā'ula Bridge</u>: constructed 1926; concrete tee-beam; two spans, 21′-0″; total length 49′-0″; bridge width 16′-0″; approximate height above stream 51′-0″.

<u>Hanawī Bridge</u>: constructed 1926; concrete arch, solid spandrel; one span, 36′-0″; total length 61′-0″; bridge width 20′-4″; approximate height above stream 19′-0″.

East Hanawī Bridge: constructed 1926; concrete tee-beam; one span, 18'-5"; total length 22'-10"; bridge width 15'-11"; approximate height above stream 15'-0".

East Hanawī Culvert: concrete, one span, approximate length 11'-8".

<u>Makapipi Bridge</u>: constructed 1926; concrete tee-beam; two spans, 22′-5″; total length 39′-10″; bridge width 16′-0″; approximate height above stream 12′-0″.

Kūhiwa Bridge: constructed 1926; concrete arch, solid spandrel; one span, 36′-6″; total length 60′-0″; bridge width 16′-4″; approximate height above stream 35′-0″. Builder: County Engineer's Office.

<u>Kupukoi Bridge</u>: constructed 1926; concrete tee-beam; one span, 21'-5"; total length 24'-7"; bridge width 16'-0"; approximate height above stream 15'-0".

<u>Kahalaowaka Bridge</u>: constructed 1926; concrete tee-beam; one span, 22'-4"; total length 24'-5"; bridge width 15'-0"; approximate height above stream 9'-0".

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<u>Pupape-Manawaikeae Bridge</u>: constructed 1926; concrete tee-beam; one span, 20'-8"; total length 24'-4"; bridge width 16'-2"; approximate height above stream 16'-0".

<u>Kahawaihapapa Bridge</u>: constructed 1922; concrete tee-beam; three spans, 17′-0″; total length 60′-0″; bridge width 16′-0″; approximate height above stream 15′-0″. Builder: County Engineer's Office.

<u>Kea'ā'iki Bridge</u>: constructed 1921; concrete tee-beam; one span, 20'-10"; total length 22'-10"; bridge width 16'-1"; approximate height above stream 27'-0". Builder: County Engineer's Office.

West Waioni Bridge: constructed 1920; concrete tee-beam; one span, 24′-5″; total length 29′-5″; bridge width 16′-6″; approximate height above stream 15′-0″.

<u>Waioni Bridge</u>: constructed 1920; concrete tee-beam; one span, 20′-7″; total length 24′-5″; bridge width 15′-11″; approximate height above stream 10′-0″.

<u>Lanikele Bridge</u>: constructed 1917; concrete tee-beam; two spans, 22′-4″; total length 51′-6″; bridge width 16′-0″; approximate height above stream 13′-0″.

Helele'ike'ōhā Bridge: constructed 1917; concrete tee-beam; one span, 23'-7"; total length 28'-6"; bridge width 16'-1"; approximate height above stream 12'-0".

'<u>Ula'ino Bridge</u>: constructed 1914; concrete tee-beam; two spans, 18'-10"; total length 39'-7"; bridge width 16'-0"; approximate height above stream 12'-0".

Mokulehua Bridge: constructed 1908; concrete tee-beam; three spans, 14′-0″; total length 48′-7″; bridge width 13′-11″; approximate height above stream 21′-0″.

Oilowai Bridge: constructed 1914; concrete tee-beam; one span, 20'-7"; total length 22'-10"; bridge width 16'-2"; approximate height above stream 22'-0". Builders: Wilson & McCandless.

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<u>Honomā'ele Bridge</u>: constructed 1924; concrete tee-beam; two spans, 20'-4"; total length 38'-10"; bridge width 16'-1"; approximate height above stream 14'-0". Builders: County Engineer's Office.

Culvert #5: concrete, one span, approximate length 17'-6".

Culvert #6: concrete, one span, approximate length 12'-0".

Culvert #7: concrete, one span, approximate length 5'5".

Culvert #8: concrete, one span, approximate length 13'-0".

Culvert #9: concrete, one span, approximate length 14'-7".

Culvert #10: concrete, one span, approximate length 14'-0".

Mo'omonui Culvert: constructed 1911, concrete, one span approximate length 8'-3".

<u>Haneo'o (Kaholopo) Bridge</u>: constructed 1900, altered 1917; concrete slab; two spans, 10′-0″; total length 22′-6″; bridge width 15′-1″.

<u>Kapi'a (Kahawaiokapia)</u> <u>Bridge</u>: constructed 1915, altered 1931; concrete slab; three spans, 17'-6"; total length 58'-4"; bridge width 14'-4"; approximate height above stream 17'-0". Designer/Builder: Wilson and McCandless.

<u>Waiohonu Bridge</u>: constructed 1915; concrete tee-beam; five spans, 18'-6"; total length 97'-6"; bridge width 15'-0"; approximate height above stream 14'-0". Designer/Builder: Wilson and McCandless.

Narrative Description (continued)

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<u>Papa'ahawahawa Bridge</u>: constructed 1913; concrete tee-beam and concrete slab; two spans, 22'-0"; total length 40'-4"; bridge width 14'-5"; approximate height above stream 9'-0". Designer/Builder: County Engineer's Office.

Ala'ala'ula Bridge: constructed 1915; concrete slab; one span, 30'-0"; total length 54'-0"; bridge width 12'-6"; approximate height above stream 22'-0".

<u>Waikakoi Bridge</u>: constructed 1911; concrete slab; two spans, 14′-0″; total length 33′-6″; bridge width 15′-4″; approximate height above stream 18′-0″.

<u>Pa'ihi Bridge</u>: constructed 1911; concrete slab; one span, 36'-6"; total length 42'-4"; bridge width 13'-9"; approximate height above stream 10'-0".

<u>Wailua Bridge</u>: constructed 1947; concrete tee-beam; one span, 60′-0″; total length 66′-1″; bridge width 14′-0″; approximate height above stream 17′-0″.

<u>South Wailua (Honolewa) Bridge</u>: constructed 1911; concrete slab; two spans, 25′-0″; total length 57′-0″; bridge width 15′-2″; approximate height above stream 26′-0″.

<u>Pu'uhoao Bridge</u>: constructed 1910; concrete tee-beam; one span, 20′-0″; total length 23′-2″; bridge width 12′-9″; approximate height above stream 13′-0″.

Waiele (Paehala) Bridge: constructed 1910; masonry arch; one span, 20′-0″; total length 25′-0″; bridge width 12′-6″; approximate height above stream 7′-0″.

<u>Kakiweka (Mahalawa) Bridge</u>: constructed 1910; concrete slab; one span, 28′-6″; total length 30′-10″; bridge width 13′-10″; approximate height above stream 16′-0″.

<u>Hāhālawe Bridge</u>: constructed 1910; masonry arch; one span, 22′-0″; total length 25′-0″; bridge width 14′-9″; approximate height above stream 10′-0″.

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Narrative Description (continued)

Maluhiana'iwi Culvert: constructed 1910; concrete, one span, approximately 13'-9".

<u>Pua'alu'u Bridge</u>: constructed 1910; concrete slab; two spans, 15′-0″; total length 32′-10″; bridge width 14′-5″; approximate height above stream 10′-0″.

<u>'Ohe'o Bridge</u>: constructed 1916; concrete arch, solid spandrel; one span, 58′-0″; total length 77′-0″; bridge width 14′-5″; approximate height above stream 44′-0″.

Kalena Culvert: concrete, one span, approximate length 13'-5".

<u>Koukou'ai (Kaukau'ai) Bridge</u>: constructed 1911; concrete arch, open spandrel; one span, 31'-10"; total length 58'-0"; bridge width 15'-2"; approximate height above stream 34'-0". ²¹

²¹ Spencer Mason Architects, *State of Hawai'i Historic Bridge Inventory and Evaluation*, prepared for the State of Hawai'i, Department of Transportation, Highways Division. Draft. (Honolulu), 1996, VI 196-198. All bridge widths and culvert span lengths were measured by Dawn Duensing as part of field work in December 2000.

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Narrative Statement of Significance (Explain the significance of the property on one or more continuation sheets.)

The Hāna Belt Road achieves state and local significance in the areas of engineering, transportation, commerce, and social history under criteria A and C. The construction of bridges and a road to Hāna between 1900 and 1947 was a major engineering achievement, as the County of Maui and private contractors benched a road into precipitous mountainsides and through the wilderness of East Maui. Fifty-nine of the bridges built between 1908 and 1947 remain along the route as an example of bridge engineering and construction in Hawai'i during the early twentieth century. The completion of an automobile route to Hāna in 1926 ended that community's isolation from the rest of Maui. The road opened East Maui to settlement, agricultural enterprises, and tourism. The Hāna Belt Road is the best remaining intact example of the old belt road system in Hawai'i. The Hāna Belt Road retains historic integrity in its original road alignment, narrow lanes, bridges, and spectacular setting along Maui's northeast coast.

Engineering

A 1905 Superintendent of Public Works report noted that road construction in the Hāna District was through "very rough country." The plan for a belt road around East Maui was popular with Maui officials and businessmen, but took decades to complete due to high costs and construction difficulties. Building the Hāna Belt Road was an expensive and difficult proposition due to the challenging topography. Miles of road were blasted out of the mountainsides and numerous bridges were required to carry the road across streams and gulches. Construction was complicated by heavy vegetation, torrential rains, and landslides.

The majority of bridges in the Hāna District were built using construction methods and materials typical in Hawai'i during the early twentieth century. Most of the Hāna District bridges (eighty percent) were constructed prior to 1930. County and territorial engineers utilized common structural systems, including concrete arch, flat slab, girder, and simple teebeam spans. The majority of bridges along the Hāna Belt Road were simple but functional, constructed with tee-beam spans and simple deck girders. The 1912 Waikamoi Bridge is one of

²² Spencer Mason Architects, State of Hawai'i Historic Bridge Inventory and Evaluation, IV 12.

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Narrative Statement of Significance (continued)

the earliest remaining examples of a concrete slab bridge in Hawai'i. Reinforced concrete was the most prevalent construction material due to the corrosive nature of the Pacific Ocean's salt air and the presence of wood-boring insects that made the use of steel and timber bridges less practical in Hawai'i than in the mainland United States. The Loan Fund Commission, established in 1911 to oversee belt road projects, decided that concrete would be used on Hawai'i's bridges rather than steel. The Commission observed that the concrete was more expensive in the beginning, but realized that the increased cost was justified due to concrete's durability as well as lower maintenance and repair costs. The use of reinforced concrete was an indication of the commitment of the Territory of Hawai'i and Maui County governments to building permanent public works improvements.²³

Five concrete arch bridges on the Hāna Belt Road remain as excellent examples of early twentieth century bridge construction in the Hawaiian Islands. These bridges used the most modern engineering technology of their day. Today, the bridges make a significant statement regarding Maui's civic pride during the early twentieth century. The open-spandrel concrete arch bridges demonstrated sophisticated engineering and marked the evolution of concrete technology toward lighter yet larger structures. These bridges were constructed for their strength and permanence, although only a few remain in Hawai'i. Koukou'ai Bridge near Kīpahulu was the first open-spandrel arch bridge on Maui and one of the earliest to be built in Hawai'i. The 'Ohe'o Bridge, a solid spandrel concrete arch, spans the scenic 'Ohe'o Gulch in Haleakalā National Park and was declared eligible for the National Register of Historic Places in 1977 as part of the Kīpahulu Historic District (50-17-299). The open-spandrel Waikani Bridge was designed by Maui architect William D'Esmond and built by a well-known contractor, Moses Akiona. D'Esmond designed Maui's County Office Building, built in 1927;

²³ Spencer Mason Architects, *State of Hawai'i Historic Bridge Inventory and Evaluation*, VI 191, 195; V 10-12.

Spencer Mason Architects, State of Hawai'i Historic Bridge Inventory and Evaluation, VI 192-194.

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Pā'ia School, 1926; St. Anthony's School, 1925; and numerous residences on Maui. 25

Two unique bridges on the Hāna Belt Road are rare surviving examples of masonry arch construction with basalt, Hāhālawe Bridge and Wai'ele Bridge. Fewer than ten masonry arch bridges remain in the state of Hawai'i. Constructed in 1910, both bridges utilized cut basalt blocks for the abutments and arch rings. Basalt arch construction was common in Hawai'i prior to 1898. The bridge walls and rock abutments may date to different construction periods, with the concrete parapets being from a later date. The bridges retain their historic integrity, with each featuring fine craftsmanship and uncommon materials.²⁶

The bridges along the Hāna Belt Road present a visual record and timeline of bridge construction technology and innovation on Maui and in Hawai'i. Many bridges are unique due to the use of vernacular materials (basalt). In addition to the masonry arch bridges, a number of bridges used basalt for the construction of abutments, piers and wingwalls. The majority of bridges, however, were built with the latest in construction technology, reinforced concrete. The bridges were built during a period when formal engineering expertise in bridge building was first introduced in Hawai'i and are good examples of the Territory of Hawai'i's progressive highway system. Each county in the territory had a County Engineer's Office, within which was a bridge design office. Many of the bridges on the Belt Road were designed by the County Engineer's Office and the engineers proved themselves to be not only technologically skilled, but also sensitive to aesthetics. In many cases, the bridges also demonstrate the work of skilled builders. The masonry arch and concrete arch bridges show a high degree of detailing and workmanship. Together, the bridges played a integral role in the development of belt roads on

²⁵ The Maui News, December 4, 1926, section 8; "Drawings and Floor Plans of Proposed St. Anthony School Building," The Maui News, March 28, 1925; Dawn E. Duensing, Historic Architectural Survey of Wailuku, Maui, Hawai'i, prepared for the County of Maui Department of Planning, 1993, 20.

²⁶ Spencer Mason Architects, State of Hawai'i Historic Bridge Inventory and Evaluation, VI 192.

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Maui as well as on other Hawaiian Islands. Today, the Hāna Belt Road bridges remain as the highest concentration of unaltered and stylistically consistent historic bridges in Hawai'i. 27

Talented local engineers were responsible for the design and construction of the Hāna Belt Road. A substantial portion of the road and bridge design as well as the majority of engineering work was completed by County Engineer's Office. Hugh Howell, who was appointed Maui County engineer in 1906 and again in 1914, had served as an engineer with the Loan Fund Commission and participated in the early survey work for the Hāna Belt Road. He also designed several bridges on the Hana Belt Road while serving as a county engineer. The Hugh Howell Engineering Company worked on Hāna Belt Road contracts once construction began. Paul Low was Maui County Engineer from 1918 until 1928 and was responsible for supervising the two major phases of Hana Belt Road construction between 1923 and 1926. He and his county crews used Howell's earlier survey work as the basis for their road design and built the most spectacular sections of road between Kailua and Nahikū. During his tenure as county engineer, Low also supervised a number of Maui's other public works projects, including the County Office Building in 1924. A. H. Wong, who designed the West Wailuaiki Bridge, was appointed county engineer in 1928 to replace Low. After his service with the county, he worked on the construction of Haleakala Highway and became an engineering supervisor with the Works Progress Administration project building Maui Airport.²⁸

Notable local contractors built portions of the Hāna Belt Road and several bridges. The Honolulu firm Wilson and McCandless built the 1914 section of road near Nahikū and Oilowai Bridge. Another important local builder, Moses Akiona, was born in Ke'anae and established his contracting firm, Moses Akiona, Ltd., in 1920. In addition to Waikani bridge, Akiona's firm worked on other Maui projects, including Malulani Hospital, Kula Sanitarium, and the Lahaina

Low noted in *The Maui News*, February 15, 1918; October 3, 1928; in Duensing, *Historic Architectural Survey*, 35. Wong noted in *The Maui News*, October 17, 1928.

Spencer Mason Architects, State of Hawai'i Historic Bridge Inventory and Evaluation, IV 7-9.
 Howell noted in The Maui News, January 10, 1914; January 9, 1915; and February 4, 1916.

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Narrative Statement of Significance (continued)

Courthouse. His business eventually grew to become one of the largest contracting firms in the territory. In the 1960s, Akiona and his sons built a section of the H-1 freeway on Oʻahu. ²⁹

Transportation & Commerce

Belt road projects are a significant element in the transportation history of Maui. This road-building program was concurrent with the strategy of all the major Hawaiian Islands to develop belt road systems. By 1900, Mauians were concentrating on the Hāna section of the belt road, calling for a good wagon road to connect central Maui and Hāna. "What the Central Pacific was to California, and what the Panama Canal would be to the Islands," *The Maui News* emphasized in 1903, was "relatively what a good road all the way from Pā'ia to Hāna would mean to Maui." A road to Hāna was believed necessary for the economic development of East Maui and its success in sugar, minor industries, and small-scale farming. Prior to the completion of a road from central Maui to Hāna, travel to East Maui villages was by steamship or an unpaved wagon and horse trail. The route along the Hāna Coast was often impassable due to heavy rain. Various sections of the coastal road were built by 1914, but the lack of a continuous road to Hāna was considered a nuisance. One Maui legislator complained that Maui was "the only island on which you cannot traverse by road around it."

The improved transportation provided by the Hāna Belt Road was considered essential for Maui's commercial development. *Maui News* editorials noted that East Maui had plenty of fertile land and emphasized that a road to Hāna would open the area to settlement. Mauians predicted that a road through East Maui to Hāna would make homestead lands available and would also facilitate trade between East Maui and the rest of the island. Benefits to be obtained from improved transportation to Hāna included increased tax revenues, population, and

²⁹ Spencer Mason Architects, State of Hawai'i Historic Bridge Inventory and Evaluation, VI 191, V 14.

³⁰ The Maui News, editorial, April 25, 1903.

³¹ "Roads First Need View of Fassoth," *The Maui News*, February 11, 1921.

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production. Roads connecting the various parts of the island, including Hāna, were viewed as essential to Maui as arteries were to the human body. Some Mauians believed that the Hāna Belt Road project was the most needed road in the territory and noted that Maui was ten years behind the other islands in its belt road construction.³²

The opening of the Hāna Belt Road in 1926 was a major transportation milestone for Maui. *The Maui News* labeled it "the greatest road making achievement in the Island, one fraught with tremendous difficulties in engineering and construction work." The new road eliminated Hāna's reliance on the weekly steamer for its transportation and communication needs to the outside world. With the new road, the trip to Hāna could now be made overland on one's own timetable rather than by the schedule of a steamer or horse trip. Instead of a round-trip journey of a week, the trip was shortened to 3.5 hours each way.³³

Another significant commercial aspect of the Hāna Belt Road was tourism. By the 1920s, Maui's businessmen and civic leaders recognized the importance of scenic roads and considered them to be commercial enterprises, without which Maui could not develop its tourism industry. As early as 1912, the Hāna Belt Road, as well as a proposed route to the summit of Haleakalā, were planned as the centerpieces of Maui's road-building projects. Mauians realized that building a road to Hāna would open up some of the finest scenery in the Hawaiian Islands and put Maui "on the tourist map." One civic group claimed that a magnificent scenic highway could be one of Maui's greatest assets. Local businessmen argued that tourism would not thrive on Maui unless the island had good roads to accommodate its visitors. One Mauian claimed that the mere mention of the term "horseback ride" scared tourists from visiting Maui. A businessman pointed out that tourists expected to travel comfortably by automobile and were not always willing to climb into the saddle to go sightseeing. Mauians realized that more tourists visited

³² The Maui News, editorials, June 28, 1902; November 15, 1902; December 27, 1902; March 7, 1903; July 4, 1903; "Advocates Belt Road: Maui is Ten Years Behind in Road Matters," *The Maui News*, November 6, 1909.

³³ "Linking Up Maui," *The Maui News*, editorial, December 18, 1926; "Maui Takes Day Off for Road Opening," *The Maui News*, December 22, 1926.

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the Big Island of Hawai'i because that island's attractions, especially Kilauea Volcano, were accessible by automobile, while Maui's attractions remained almost inaccessible. The Hāna Belt Road was a significant piece of a road-building program that aimed to make Maui's scenic attractions easily available. Maui's plans to develop a tourist industry received a tremendous boost with the completion of the Hāna Belt Road in 1926 and the Haleakalā Highway in 1935. These two roads were Maui's crowning achievements in transportation public works projects during the twentieth century. Both highways were important commercial enterprises and remain the island's most popular scenic drives today. The Hāna Belt Road has become an attraction in itself, with tourists driving the route to experience the narrow road and its historic bridges, not just the scenery. Motorists appreciate this unique route that is relatively unchanged from the 1920s and provides an opportunity to visit a rural area that is uniquely Hawaiian.

Social History

The immediate impact of opening the Hāna Belt Road was to end East Maui's centuries of isolation from the rest of Maui. Prior to the belt road's construction, many on Maui maintained that Hāna might as well be on another island.³⁵ Indeed, in ancient times, Hāna was more connected to communities on the island of Hawai'i that were more easily accessible by canoe. Until the Hāna Belt Road was completed, many Mauians had never seen the 'other side' of Maui, whether they lived in West Maui or East Maui.

The completion of the Hāna Belt Road is a testament to civic pride on Maui during the early twentieth century. The County Act in 1905 authorized the establishment of local governments

³⁴ "No Ke'anae Highway Says Governor," *The Maui News*, July 18, 1914; "The Key to Progress," *The Maui News*, May 16, 1914; "Road to Ke'anae Now Maui's Best Bet To Draw Tourist Travel, *The Maui News*, October 7, 1925; Connect Maui Up," *The Maui News*, February 11, 1921; Duensing, Dawn E., *Haleakalā Highway*, *HAER No. HI-52*. [Washington D.C.], National Park Service, Historic American Engineering Record, 1999.

³⁵ "New Comer Doesn't Like Our Road Policy," *The Maui News*, August 14, 1915; "Connect Maui Up," *The Maui News*, February 11, 1921.

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on Hawai'i's four major islands. On Maui, numerous public works projects during the next thirty years demonstrated residents' keen sense of civic awareness. Substantial public buildings were constructed in the county seat of Wailuku, including the Wailuku Courthouse (built in 1907), County Office Building (1924), Wailuku Library (1928), and Territorial Building (1931). In the Lahaina District, the courthouse was renovated and the Pali Highway was improved in 1925. Prominent schools were built, including the Wailuku Public School in 1905 and Maui High School in 1921, both designed by well-known architect C. W. Dickey. Many of the structures built during this intense period of civil works projects were designed by prominent architects, including Dickey, H. L. Kerr, and William D'Esmond.³⁶

The Hāna Belt Road was part of this great, early twentieth century public works movement. First suggested in 1895, the Maui Board of Supervisors sought funding for the road as early as 1900. Although numerous bridges were constructed on the Hana Belt Road starting in 1908, little money was available for road construction or improvement. Mauians lobbied Hawai'i's governors and legislators for decades before receiving funding to build the dream of an automobile road to Hāna. A 1923 estimate of \$692,000 to complete the road was a substantial undertaking for an island with limited resources and a population of approximately 38,000, most of whom were agricultural laborers. Maui's leaders found ways to finance the Hāna Belt Road through the sale of territorial bonds and the savings gained from the use of public employees and prison labor rather than private contractors. In early 1923, the county government demonstrated its determination to go ahead with the project by purchasing a steam shovel and drill and assigning a gang of twenty men to begin work on the new road, even though the territorial legislature had not yet approved the sale of bonds for the project. The county established a prison camp in Kailua to house the fifty convicts expected to work on the road. Within months, leaders purchased another steam shovel and drill so that work could proceed from both ends of the road. Funding eventually was secured from the territorial and federal governments.37

³⁶ Duensing, *Historic Architectural Survey*, 5-12, 19-20.

³⁷ "Belt Road Plans Further Advanced," *The Maui News*, February 10, 1923; "Belt Road Funds Knotty Problem Chamber Finds," *The Maui News*, March 9, 1923; "Belt Road Work Will Be

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A number of bridges on the Hāna Belt Road were significant civic statements for Maui. Altogether, the concrete bridges along the road demonstrated the county's commitment to permanent and modern improvements. Several bridges were visually prominent both in style and location, and also demonstrated fine workmanship. Bridges such as Waikani, Koukou'ai, and 'Ohe'o indicated both the technical and aesthetic sophistication of the community in which they were built. Many of the bridges are examples of exceptional work by important local builders, including Johnny Wilson of Honolulu (in partnership with McCandless) and Moses Akiona. Waikani Bridge is one of the most aesthetically pleasing bridges along the road and was a collaboration of Akiona and D'Esmond. Many other bridges were not quite so grand, but also made pleasing visual statements, including Hanawī Bridge, Kūhiwa Bridge, Waiokamilo Bridge, and Pu'uhaoa Bridge.

The extent of economic development predicted by *Maui News* writers never happened, although many homes and small farms were built along the Hāna Belt Road corridor over the years as land became available and accessible. Census statistics indicate that the Hāna District was home to 3,100 residents in 1920 before the road opened. In 1930, population in the district declined to 2,436. Agriculture remained the dominant activity, with the communities of Ke'anae and Wailua noted for their production of *taro* and rice. Despite the improvements in transportation and the possibilities for more development, the Hāna District's population dwindled to 1,495 by 1950.³⁸

The lack of road improvements over the past seventy years has not only preserved the historic character of the Hāna Belt Road, but has also helped to maintain the historic rural character of the Hāna District itself. The absence of an easily-traveled, high-speed traffic artery has served to impede substantial development, which has subsequently allowed Hāna and other communities in East Maui to remain rural. There are no fast food chains, chain stores, strip malls or

Started By Maui County," *The Maui News*, March 10, 1923; "Belt Road Project Is To Go Forward At Once," *The Maui News*, May 26, 1923, Robert C. Schmitt, *Historical Statistics of Hawai'i*, Honolulu: The University Press of Hawai'i, 1977, 13.

³⁸ Robert C. Schmitt, *Historical Statistics of Hawai'i*, 13-14.

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sprawling subdivisions along the Hāna Belt Road. Travelers along the Hāna Coast are served by the occasional roadside stand and must drive all the way to Hāna for conveniences such as groceries, gas, and restaurants. With a sizable population of residents of Hawaiian ancestry, Hāna is often cited as Maui's "most Hawaiian community." The Hāna community has worked together to "Keep Hāna Hawaiian," as a bumper sticker urges, and preserve its rural lifestyle and values. In the 1990s, residents rallied against the approval of major developments such as a golf course and an adjacent residential community. Many Hāna residents believe that the narrow, winding, and slow Hāna Belt Road is a means to "Keep Hāna Hawaiian."

Today, a trip along the Hāna Belt Road allows a motorist to see much of what would have been viewed in 1926 when the road opened: a spectacular thoroughfare chiseled out of cliffs, passing through huge gullies and past waterfalls, while always presenting stunning views of the Pacific Ocean and East Maui's natural features. Ke'anae still practices traditional ways, with *taro* being farmed and a Hawaiian lifestyle. A three-room rural school is still in operation in Ke'anae. The section of road above the Wailua Valley, which was admired by Engineer Paul Low, still travels along a narrow ledge for a mile, providing a panoramic view of *taro* patches in the quaint village of Wailua below. Along the way motorists view the historic irrigation ditches, weirs, and intakes still used for Maui's sugar industry. The journey to Hāna provides an opportunity to experience a rural way of life that is uniquely Hawaiian and also a way of life that is becoming more rare in the Hawaiian Islands.

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Name of property Hāna Belt Road
County and State Maui County, Hawai'i
Major Bibliographical References
Bartholomew, Gail. <i>Maui Remembers: A Local History</i> . Honolulu: Mutual Publishing, 1994.
Duensing, Dawn E. <i>Haleakalā Highway, HAER No. HI-52.</i> [Washington D.C.]: National Park Service, Historic American Engineering Record, 1999.
Historic Architectural Survey of Wailuku, Maui, Hawai'i. [Wailuku, Hawai'i]: County of Maui, Department of Planning, 1993.
Hawai'i Heritage Center. <i>Historic Bridge Inventory and Evaluation, Islands of Maui and Molokai</i> . [Honolulu]: State of Hawai'i, Department of Transportation, Highways Division in cooperation with the U.S. Department of Transportation, Federal Highway Administration, 1990.
Robert C. Schmitt. <i>Historical Statistics of Hawai'i.</i> Honolulu: The University Press of Hawai'i

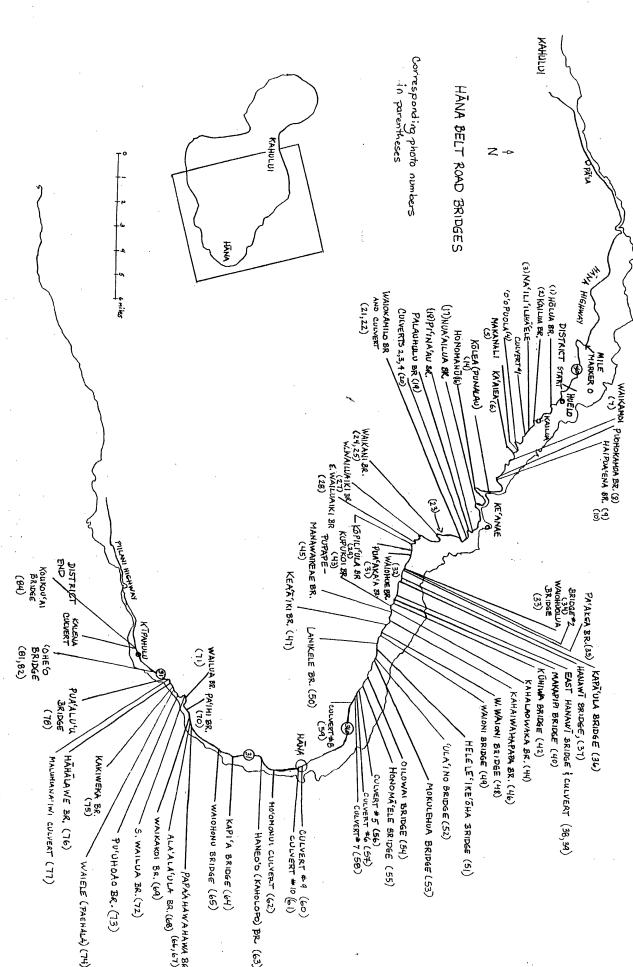
Spencer Mason Architects. *State of Hawai'i Historic Bridge Inventory and Evaluation*. Draft. [Honolulu]: State of Hawai'i, Department of Transportation, Highways Division, 1996.

Trust for Public Land and Bay Pacific Consulting. *East Maui Resource Inventory.* [Honolulu]: U.S. Department of the Interior, National Park Service, Rivers, Trails, and Conservation

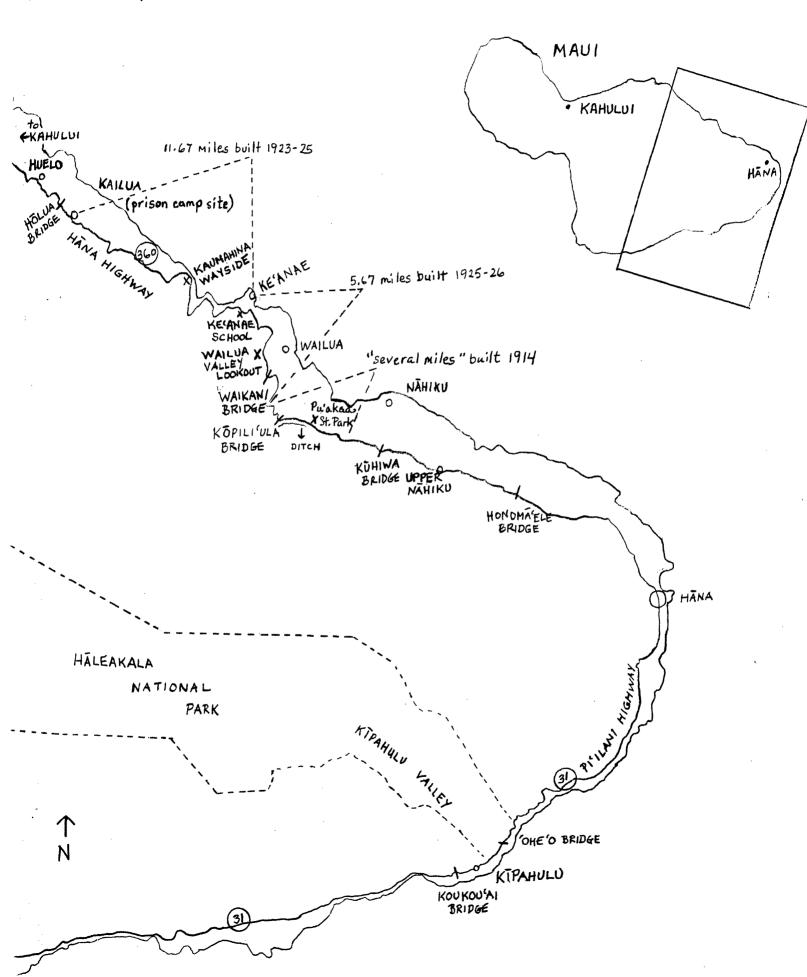
The Maui News, 1900-1950.

Assistance Program, 1998.

1977.



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National Register of Historic Places Continuation Sheet

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NDIC D.f	-	ARY LISTING RECORD	/01
NRIS Refere	nce Number: 01000615	Date Listed: 06/15/	701
Property Na	me: <u>Hana Belt Road</u>	County: <u>Maui</u>	State: HI
Multiple Na	ne: N/A		
nomination de	is listed in the National Registe ocumentation subject to the follong the National Park Service ce	owing exceptions, exclusion	s, or amendments,
Hara	a DiBbe	ري _	115/01
(by) Signature of	the Keener	Date of Act	ion

Amended Items in Nomination:

The following amendments are hereby made to the documentation and confirmed with the HI SHPO:

Section 5. Classification

The road itself, not just the bridges and culverts, should be counted as a contributing structure. Therefore, the total number of contributing structures is changed to 74. The one (1) non-contributing structure remains the same.

Section 10. Geographical Data

The acreage of the property was not provided. The correct acreage of the district is 153 acres.

DISTRIBUTION: National Register property file; Nominating Authority

Photograph #6

7.

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Section	Additional Documentation: Photographs Page 1
Name o	of property <u>Hāna Belt Road</u>
County	and State Maui County, Hawai'i
-	stographs, with the exception of photograph #84 (Koukou'ai Bridge), were taken by
	E. Duensing. Dawn E. Duensing has all negatives except for that for #84, which is located
at the S	tate of Hawai'i Department of Transportation.
1.	Hāna Belt Road
2.	Maui County, Hawai'i
3.	Dawn E. Duensing
4.	November 19, 2000
5.	Dawn E. Duensing
6.	Hōlua Bridge, view looking east
7.	Photograph #1
4.	November 19, 2000
6.	Kailua Bridge, view looking east
7.	Photograph #2
4.	November 19, 2000
6.	Nā'ili'ilihā'ele Bridge, view looking west
7.	Photograph #3
4.	November 19, 2000
6.	'O'opuola Bridge, view looking west
7.	Photograph #4
4.	November 19, 2000
6.	Makanali Bridge, view looking west
7.	Photograph #5
4.	November 19, 2000
6.	Ka'aiea Bridge, view looking west, with ditchworks in the background

Photograph #14

7.

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Section	Additional Documentation: Photographs Page 2
Name o	of property <u>Hāna Belt Road</u>
County	and State Maui County, Hawai'i
4.	November 19, 2000
6.	Waikamoi Bridge, view looking east
7.	Photograph #7
4.	November 19, 2000
6.	Puohokamoa Bridge, view looking makai (towards the ocean)
7.	Photograph #8
4.	November 19, 2000
6.	Haipua'ena Bridge, view looking mauka (toward the mountain or inland)
7.	Photograph #9
4.	November 19, 2000
6.	Haipua'ena Bridge, view looking east
7.	Photograph #10
4.	November 19, 2000
6.	View from road looking east, just east of Kaumahina State Wayside
7.	Photograph #11
4.	December 2, 2000
6.	Aerial view of road on west side of Honomanū Valley.
7.	Photograph #12
4.	November 26, 2000
6.	West side of Honomanū Valley portion of road as viewed from the road on Honomanū
	Valley's east side
7.	Photograph #13
4.	December 2, 2000
6.	Kōlea (Punala) Bridge, looking mauka

7.

Photograph #22

United States Department of the Interior National Park Service

Section	Additional Documentation: Photographs Page 3
Name o	of property <u>Hāna Belt Road</u>
	and State Maui County, Hawai'i
4.	November 26, 2000
6.	Hāna Belt Road through Honoman $\bar{\mathbf{u}}$ Gulch, between Kōlea Bridge and Honoman $\bar{\mathbf{u}}$
	Bridge, looking east
7.	Photograph #15
4.	November 26, 2000
6.	Honomanū Bridge, looking mauka
7.	Photograph #16
4.	November 26, 2000
6.	Nua'ailua Bridge, looking east
7.	Photograph #17
4.	November 26, 2000
6.	Pi'ina'au Bridge, looking west
7.	Photograph #18
4.	November 26, 2000
6.	Palauhulu Bridge, looking mauka
7.	Photograph #19
4.	November 26, 2000
6.	Culverts #2 & #3, looking west, culvert #4 is of similar construction.
7.	Photograph #20
4.	November 26, 2000
6.	Waiokamilo Bridge, looking west
7.	Photograph #21
4.	December 2, 2000
6.	Waiokamilo Bridge, <i>makai</i> wall. Waiokamilo Culvert, adjacent to bridge, has identical walls.

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NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Section	Additional Documentation: Photographs Page 4
Name o	of property <u>Hāna Belt Road</u>
	and State Maui County, Hawai'i
4.	November 26, 2000
6.	View of road on cliff's edge above Wailua Village, after Wailua Valley lookout, looking west
7.	Photograph #23
4.	December 3, 2000
6.	Waikani Bridge, looking mauka from west side of bridge
7.	Photograph #24
4.	November 26, 2000
6.	Road view of Waikani Bridge, looking west
7.	Photograph #25
4.	December 3, 2000
6.	View from road on east side of Wailuanui Valley, east of Waikani Bridge; overlooking Wailua Village, with Hāna Belt Road above Wailua visible on left
7.	Photograph #26
4.	November 26, 2000
6.	West Wailuaiki Bridge, looking mauka from east side of bridge
7.	Photograph #27
4.	November 26, 2000
6.	East Wailuaiki Bridge, looking east
7.	Photograph #28
4.	November 26, 2000
6.	Kōpili'ula Bridge, looking east
7.	Photograph #29
4.	November 26, 2000

Ditch running alongside Hāna Belt Road after Kōpili'ula Bridge

6. 7.

Photograph #30

United States Department of the Interior National Park Service

Section	Additional Documentation: Photographs Page 5
Name o	of property <u>Hāna Belt Road</u>
County	and State Maui County, Hawai'i
4.	November 26, 2000
6.	Pua'aka'a (Waiohue) Bridge, looking <i>mauka</i>
7.	Photograph #31
4.	November 26,2000
6.	Waiohue Bridge, looking east/makai
7.	Photograph #32
4.	November 26, 2000
6.	Waiohuolua Bridge, looking east
7.	Photograph #33
4.	November 26, 2000
6.	Bridge #2, looking east, Pa'akea Bridge is in background
7.	Photograph #34
4.	January 27, 2001
6.	Pa'akea Bridge, with Bridge #2 in background, looking west
7.	Photograph #35
4.	December 2, 2000
6.	Kapā'ula Bridge, looking west
7.	Photograph #36
4.	December 2, 2000
6.	Hanawī Bridge, from west side of bridge looking mauka
7.	Photograph #37
4.	December 2, 2000
6.	East Hanawī Bridge, looking east
7.	Photograph #38

7.

Photograph #46

United States Department of the Interior National Park Service

Secti	ion Additional Documentation: Photographs Page 6
Nam	e of property <u>Hāna Belt Road</u>
Cour	nty and State Maui County, Hawai'i
4.	December 2, 2000
т. 6.	East Hanawī Culvert, looking east / mauka
0. 7.	Photograph #39
,,	Thotograph #05
4.	December 2, 2000
6.	Makapipi Bridge, looking <i>mauka</i>
7.	Photograph #40
4.	December 2, 2000
6.	View of Hāna Belt Road east of Makapipi Bridge, looking east
7.	Photograph #41
4.	December 2, 2000
6.	Kūhiwa Bridge, looking east
7.	Photograph #42
4.	December 2, 2000
6.	Kupukoi Bridge, looking east
7.	Photograph #43
4 .	December 2, 2000
6.	Kahalaowaka Bridge, view looking mauka
7.	Photograph #44
4.	December 2, 2000
6.	Pupape-Manawaikeae Bridge, view looking east
7.	Photograph #45
4.	December 2, 2000
6.	Kahawaihapapa Bridge, looking east

6.

7.

Oilowai Bridge, looking east

Photograph #54

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Section	Additional Documentation: Photographs	Page _	7	
Name o	of property <u>Hāna Belt Road</u>			
	and State Maui County, Hawai'i			
County	and State Maur County, Hawaii	<u></u>		
4.	December 2, 2000			
6.	Kea'ā'iki Bridge, looking east			
7.	Photograph #47			
4.	December 2, 2000			
6.	West Waioni Bridge, looking east			
7.	Photograph #48			
4.	December 2, 2000			
6.	Waioni Bridge, looking east			
7.	Photograph #49			
4.	December 2, 2000			
6.	Lanikele Bridge, looking west			
7.	Photograph #50			
4.	December 2, 2000			
6.	Helele'ike'ōhā Bridge, looking east			
7.	Photograph #51			
4.	December 2, 2000			
6.	'Ula'ino Bridge, looking west			
7.	Photograph #52			
4.	December 3, 2000			
6.	Mokulehua Bridge, looking east			
7.	Photograph #53			
4.	December 3, 2000			

Photograph #62

7.

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Section	Additional Documentation: Photographs	Page _	8
	of property Hāna Belt Road		
County	and State Maui County, Hawai'i		
4.	December 3, 2000		
6.	Honomā'ele Bridge, looking west		
7.	Photograph #55		
4.	December 3, 2000		
6.	Culvert #5, looking west		
7.	Photograph #56		
4.	December 3, 2000		
6.	Culvert #6, looking makai		
7.	Photograph #57		
4.	December 3, 2000		
6.	Culvert #7, looking <i>makai</i>		
7.	Photograph #58		
4.	December 3, 2000		
6.	Culvert #8, looking west		
7.	Photograph #59		
4.	December 3, 2000		
6.	Culvert #9, looking mauka		
7.	Photograph #60		
4.	December 3, 2000		
6.	Culvert #10, looking west		
7.	Photograph #61		
4.	January 27, 2001		
6.	Mo'omonui Culvert, looking mauka		

7.

Photograph #70

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Section	Additional Documentation: Photographs Page 9
Name o	of property <u>Hāna Belt Road</u>
County	and State Maui County, Hawai'i
4.	December 3, 2000
6.	Haneo o (Kaholopo) Bridge, looking mauka
7.	Photograph #63
4.	December 3, 2000
6.	Kapi'a (Kahawaiokapia) Bridge, looking north
7.	Photograph #64
4.	December 3, 2000
6.	Waiohonu Bridge, looking south
7.	Photograph #65
4.	December 3, 2000
6.	Papa'ahawahawa Bridge, looking mauka
7.	Photograph #66
4.	December 3, 2000
6.	Papa'ahawahawa Bridge, road view looking north
7.	Photograph #67
4.	December 3, 2000
6.	Ala'ala'ula Bridge, looking <i>mauka</i>
7.	Photograph #68
4.	December 3, 2000
6.	Waikakoi Bridge, looking north
7.	Photograph #69
4.	December 3, 2000
6.	Pa'ihi Bridge, looking <i>mauka</i>

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Section	Additional Documentation: Photographs Page 10
Name (of property <u>Hāna Belt Road</u>
	and State Maui County, Hawai'i
County	and State Matti County, Hawai i
4.	December 3, 2000
6.	Wailua Bridge, looking north
7.	Photograph #71
4.	December 3, 2000
6.	South Wailua (Honolewa) Bridge, looking mauka
7.	Photograph #72
4.	December 3, 2000
6.	Pu'uhoao Bridge, looking north
7.	Photograph #73
4	December 2, 2000
4. 6.	December 3, 2000 Waisla (Packela) Bridge leaking north
	Waiele (Paehala) Bridge, looking north
7.	Photograph #74
4.	December 3, 2000
6.	Kakiweka Bridge, looking mauka
7.	Photograph #75
4.	December 3, 2000
6.	Hāhālawe Bridge, looking <i>mauka</i>
7.	Photograph #76
	5 1
4.	December 3, 2000
6.	Maluhiana'iwi Culvert, looking mauka
7.	Photograph #77
4.	December 3, 2000
6.	Pua'alu'u Bridge, looking mauka
7.	Photograph #78

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Section Additional Documentation: Photographs Page11
Name of property <u>Hāna Belt Road</u>
County and State Maui County, Hawai'i
4
4. December 3, 2000
6. Roadscape south of Pua'alu'u Bridge, looking north
7. Photograph #79
4. December 3, 2000
6. Roadscape north of 'Ohe'o Bridge, looking north
7. Photograph #80
7. 11010 3. up 1
4. December 3, 2000
6. 'Ohe'o Bridge, looking <i>makai</i>
7. Photograph #81
4. December 3, 2000
6. 'Ohe'o Bridge, looking <i>mauka</i>
7. Photograph #82
7. Thotograph #02
4. December 3, 2000
6. Roadscape south of 'Ohe'o Bridge in Haleakalā National Park, looking north
7. Photograph #83
3. August Riccio, Hawai'i Heritage Center
4. 1990
5. State of Hawai'i Department of Transportation
6. Koukou'ai (Kaukau'ai) Bridge, looking <i>mauka</i>
7. Photograph #84
7. Industraph #04