

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form*. 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.

1. Name of Property

Historic name: Queen Street Bridge

Other names/site number: Nuuanu Stream Bridge

Name of related multiple property listing:

N/A

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

N/A

2. Location

Street & number: Nimitz Highway westbound and Nuuanu Stream

City or town: Honolulu State: HI County: Honolulu 003

Not For Publication: ☐ Vicinity: ☐

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, 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 at the following level(s) of significance:

___national ___statewide ___local

Applicable National Register Criteria:

___A ___B ___C ___D

Signature of certifying official/Title:

Date

State or Federal agency/bureau or Tribal Government

In my opinion, the property ___ meets ___ does not meet the National Register criteria.

Signature of commenting official:

Date

Title :

State or Federal agency/bureau
or Tribal Government

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4. National Park Service Certification

I hereby certify that this property is:

- ☐ entered in the National Register
☐ determined eligible for the National Register
☐ determined not eligible for the National Register
☐ removed from the National Register
☐ other (explain:) _____

Signature of the Keeper

Date of Action

5. Classification

Ownership of Property

(Check as many boxes as apply.)

- Private: ☐
Public – Local ☐
Public – State ☒
Public – Federal ☐

Category of Property

(Check only **one** box.)

- Building(s) ☐
District ☐
Site ☐
Structure ☒
Object ☐

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Number of Resources within Property

(Do not include previously listed resources in the count)

Contributing	Noncontributing	
_____	_____	buildings
_____	_____	sites
_____ 1 _____	_____	structures
_____	_____	objects
_____ 1 _____	_____	Total

Number of contributing resources previously listed in the National Register _____

6. Function or Use

Historic Functions

(Enter categories from instructions.)

Transportation/ Road-related (vehicular)

Current Functions

(Enter categories from instructions.)

Transportation/ Road-related (vehicular)

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7. Description

Architectural Classification

(Enter categories from instructions.)

Other/ solid parapet bridge

Materials: (enter categories from instructions.)

Principal exterior materials of the property: Concrete

Narrative Description

(Describe the historic and current physical appearance and condition of the property. Describe contributing and noncontributing resources if applicable. Begin with a **summary paragraph** that briefly describes the general characteristics of the property, such as its location, type, style, method of construction, setting, size, and significant features. Indicate whether the property has historic integrity.)

Summary Paragraph

The Queen Street Bridge is a five-span reinforced concrete tee-beam bridge, 150' in length between abutments, that carries the north-bound lanes of Nimitz Highway over Nuuanu Stream. It is located just west of the downtown waterfront of Honolulu, adjacent to the mixed commercial and industrial area of Iwilei. Built in 1932, this bridge has a parapet design featuring a rounded top rail and a contoured end stanchion design, which is unique for concrete bridges on Oahu. However, its individual span length (of about 30') is not remarkably long for Oahu's tee-beam bridges. Alterations were made to the *makai*¹ parapet, including replacement of both end stanchions.

Narrative Description

The Queen Street Bridge is a reinforced concrete tee-beam bridge that carries the north-bound lanes of Nimitz Highway over Nuuanu Stream. It carries an asphalt surfaced roadway that is about 55' in width. At both sides of the roadway crossing the bridge are 6' wide concrete walkways set about 5" higher than the roadway, which form curbs. The bridge has five 30' spans. The length of the roadway crossing the bridge is about 150'. The *maka'i*² parapet is about 231' in length. The overall length of the *mauka* parapet is about 162' from end to end, which includes portions (approximately 10' to 12' long) at both ends that curve away from the roadway.

¹ Common Hawaiian term meaning "in the direction of the sea".

² Common Hawaiian term meaning "in the direction of the mountains".

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The bridge parapets are about 3'-2" high, measured from the top surface of the walkway. The parapets have a rounded design with a solid, un-perforated balustrade. On the roadway side, the bottom rail of the parapet is about 8" high and 1'-5" thick. Atop the bottom rail, a series of three small rectilinear moldings recede (about 4½" total) to transition the bottom rail to the solid panel of the parapet, which is 1'-7" high and about 8" thick. The transition from the top of the panel to the top rail consists of two small rectilinear moldings (about 3" total). The 1'-2" wide top rail is about 4" high with smooth, radiused sides from the moldings to its slightly rounded upper surface.

The end stanchions of the parapets are each about 4' long, and continue the same parapet pattern of rectilinear moldings, solid panel, and rounded top rail. The end stanchions widen slightly, with a top rail width of 1'-7" and a solid parapet thickness of about 1'-0". Typically, concrete bridges of this type and period have date and name inscriptions on their end stanchions, as is the case here. Each end stanchion on the *mauka* parapet is inscribed "Nuuanu Stream 1932" in 3"-high capital letters. (The end stanchions on the *makai* parapet have been left blank.)

On the *makai* parapet, about 22' from the north end stanchion, is one stanchion that is 3' long, with a 1'-7" wide top rail and a solid panel parapet about 10" thick. This stanchion follows the typical pattern of rounded top rail with rectilinear moldings of the bridge parapet. This is the only stanchion (besides the end stanchions) on the bridge and the remaining lengths of both parapets have no others.

The substructure of the Queen Street Bridge consists of two concrete abutments. The stream at the bridge is lined with vertical walls of concrete or quarry faced basalt lava rock masonry with concrete mortar joints. The south abutment has been constructed on top of a section of wall constructed of basalt masonry with concrete mortar. The four piers of the bridge are solid concrete members that span the width of the bridge and extend up from the streambed. These piers have angled vertical ends that help divert water flow and rounded moldings that extend horizontally around each pier near the water line. The piers support the longitudinal concrete beams of the superstructure.

In the 1950s, the *makai* parapet of the Queen Street Bridge was altered and both end stanchions were replaced. About 120' off the north end of the *makai* parapet was removed, and the end stanchion was rebuilt in its present position, about 22' north of the original (3' long) stanchion. On the south end of the *makai* parapet, a 43' section of the parapet was added and the end stanchion rebuilt. The alteration of the south end occurred in 1952 when Queen Street was widened to provide additional lanes, and a new bridge *makai* of the 1932 Queen Street Bridge was erected. Alterations at the north end likely occurred ca. 1954 as well when the adjacent Awa Street Wastewater pumping substation was built.

Site Information:

The Queen Street Bridge is located in the Chinatown Historic District (National Register Item Number 73000658, National Register record number 364413). The bridge lies on the north-bound lanes of heavily traveled Nimitz Highway. The densely developed area of Chinatown is located southeast of the bridge. To the west is the slip of Honolulu Harbor between Piers 15 and 17/18, and to the north is the commercial and industrial area of Iwilei.

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Integrity Assessment

The Queen Street Bridge is in its original location and retains integrity of location.

Although the setting of the property and its associated roadways has changed, aspects of the setting of the surrounding built environment are retained. When the bridge was built, there was only one two-lane road (Queen Street) in this location along the harbor front, and Nimitz Highway eastbound did not separate the bridge from the harbor as it does today. Pier 15 extended almost to River Street and Pier 16 was located in an adjacent slip and extended south from the north bank to almost Maunakea Street. However, the neighboring areas of Iwilei and Chinatown, with the exception of some high-rise buildings, are of the same density and scale as when the bridge was built.

The design, materials, and workmanship of the structure are retained in some measure. The alterations of the *makai* parapet and the reconstruction of the end stanchions have reduced the integrity of design, materials, and workmanship. However, the parapet retains full integrity of design, materials, and workmanship.

The feeling and association of the property are retained. Although *makai* parapet alterations and changes to the setting have somewhat impaired the bridge's historic character, the bridge still expresses the historic sense of the time of its construction. The bridge is sufficiently intact to convey its association with the important highway improvements of that period.

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8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- ☒ A. Property is associated with events that have made a significant contribution to the broad patterns of our history.
- ☐ B. Property is associated with the lives of persons significant in our past.
- ☒ C. Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- ☐ D. Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations

(Mark "x" in all the boxes that apply.)

- ☐ A. Owned by a religious institution or used for religious purposes
- ☐ B. Removed from its original location
- ☐ C. A birthplace or grave
- ☐ D. A cemetery
- ☐ E. A reconstructed building, object, or structure
- ☐ F. A commemorative property
- ☐ G. Less than 50 years old or achieving significance within the past 50 years

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Areas of Significance

(Enter categories from instructions.)

Transportation

Engineering

Period of Significance

1932 - 1967

Significant Dates

1932

Significant Person

(Complete only if Criterion B is marked above.)

Cultural Affiliation

Architect/Builder

George K. Dawson, City and County of Honolulu, Engineer

Robert S. Mowry, City and County of Honolulu Chief Engineer of Plans, Specifications

Herbert A. R. Austin, Chief Engineer of the City and County of Honolulu, Public Works

Hawaiian Contracting Co., Builder.

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Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance, applicable criteria, justification for the period of significance, and any applicable criteria considerations.)

The Queen Street Bridge is significant at the local level under Criterion A for its association with the history of Oahu's road transportation network, particularly for its contribution to the development of Queen Street, an important transportation arterial from Honolulu's downtown and harbor areas into the commercial and industrial area of Iwilei, and points further west. The bridge is also significant under Criterion C as an example of a concrete bridge on Oahu that features a solid parapet design with rounded parapet top rail and contoured end stanchions. The bridge's period of significance, 1932 – 1967, spans from the initial date of construction to the year when the H-1 Freeway segment inland was completed. (In 1967, the H-1 Freeway replaced Nimitz Highway as the primary corridor to points west.) During that period the bridge facilitated transit from Waikiki and downtown Honolulu to points west, as an element of Queen Street, and later, the Makai Arterial/Nimitz Highway.

Narrative Statement of Significance (Provide at least **one** paragraph for each area of significance.)

Criterion A

Early Passage over Nuuanu Stream

The Queen Street Bridge was built to carry Queen Street over Nuuanu Stream. The passage over Nuuanu Stream from Honolulu had long been an important route, and an early (1840) bridge across the stream at the Beretania Street right of way was probably "the first major span in the islands."³ This passage was important enough that successive bridges at Beretania and King Streets were quickly rebuilt when carried away by floods that washed down Nuuanu Stream.⁴

Queen Street was established in the early 1840s after the *Kahina Nui* (a Hawaiian political office similar to a Prime Minister) Kinau "ordained the construction of 'five streets on the length of the land and six streets on the breadth of the land,'" which included Queen Street along with Merchant Street, King Street, Hotel Street, Beretania Street, Punchbowl Street, Richards Street, Alakea Street, and Nuuanu Avenue.⁵ Originally, Queen Street began at the Honolulu Fort and extended eastward. In the opposite direction, from the fort to Nuuanu Stream, the alignment of future Queen Street was along the beachfront. By about 1880 this beachfront had been converted to wharfs and Queen Street extended to Kekaulike Street. By 1897 Queen Street had been extended to River Street.

The earliest bridge to have been built across Nuuanu Stream at Queen Street appears to have been sometime between 1897 and 1905, when Queen Street was extended into Iwilei from downtown Honolulu. This extension of Queen Street across Nuuanu Stream provided direct traffic between the Honolulu waterfront and the industrial area of Iwilei. Formerly, this traffic had

³Robert C. Schmitt, "Early Hawaiian Bridges," *The Hawaiian Journal of History*, Vol. 20, 1986. p. 152.

⁴ *Ibid.*, pp. 152 & 153.

⁵ Charles E. Hogue, "Street That Oxen Laid Out," *Honolulu Advertiser*, January 26, 1950. p. 8.

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to cross the stream at King Street.⁶ The earliest bridge was likely wood, and carried two lanes of traffic. The wood construction material is evidenced by a 1924 photo that appears to show a wood guardrail,⁷ as well as the 1932 plans for the Queen Street Bridge, which show timber piles as the support for the previous bridge.⁸ A 1930 aerial photo appears to show Queen Street as two lanes over the bridge. This earlier bridge was reconstructed as early as 1906.⁹

Construction of the 1932 Queen Street Bridge

By the 1930s, Queen Street included two separate segments whose juncture was interrupted by the Oahu Railway & Land Co. (OR&L) Depot in Iwilei. The west segment was originally a seven block section in Kalihi, between Puuhale and Waiakamilo Roads; however, in the early 1930s it was in the process of being extended eastward to meet King Street, just north of the OR&L Depot. This section of Queen Street was approximately 1½ miles in length and would later be named Dillingham Boulevard. The east segment of Queen Street started at Iwilei Road at the OR&L Depot, and continued into Kakaako, terminating in the vicinity of Kamakee Street. This segment was less than 2 miles in length, and was predominantly an inland corridor except for a short section in the downtown Honolulu Harbor area, which crossed Nuuanu Stream, and passed by Piers 11 through 15.

When built, the route west from downtown Honolulu was one of the most important corridors on Oahu. The Queen Street Bridge was one of six bridges that carried foot and vehicular traffic in to and out of downtown over Nuuanu Stream (including Queen Street, King Street, Beretania Street, Kukui Street, Vineyard Street, and School Street.). Foot traffic would have been especially heavy across these bridges on the weekends as it was customary for plantation workers from outlying areas of Oahu to ride the OR&L lines into Honolulu to do their shopping on Saturdays. Disembarking from the railcars at the OR&L Depot in Iwilei, it was a short distance across Nuuanu Stream to Chinatown where produce, meat, poultry, clothing and household goods were sold.

The Hawaiian Contracting Co., under the Office of the City and County Engineer, Honolulu, Hawaii built the Queen Street Bridge in 1932, to replace the earlier wood bridge. Walter F. Dillingham and associates organized the Hawaiian Contracting Co. in 1918. The company was responsible for the construction of many bridges throughout the Hawaiian Islands in the 1930s including the 1933 Kipapa Bridge (over the Kipapa Gulch), Wahiawa, Oahu,¹⁰ the 1936 Lihue Mill Bridge, Lihue, Kauai (no longer extant), the 1933 Alae (Naalae Gulch) Bridge, Kula, Maui,¹¹ and the 1936 Waialae Drive Bridge, in Wailuku, Maui.¹² The 2013 *Hawaii State Historic Bridge Inventory and Evaluation* lists the Hawaiian Contracting Co. (along with the Honolulu Iron Works and John L. Young), as one of the "important local builders of steel truss and stringer bridges."¹³

⁶ M. D. Monsarrat, map "Honolulu, Hawaiian Islands," 1897, and Charles V.E. Dove, "Map of Honolulu, Hawaiian Islands," 1912.

⁷ Photo "King St. Bridge No. 2" April 1924, in Hawaii State Archives folder PP-6-1.

⁸ Aerial photo; 11th Photo Section Air Corps US Army "Mosaic of the City of Honolulu" 1930, In Hawaii State Archives folder PPO-42 and drawing 4-285, "Queen Street Bridge (Nuuanu Stream) Location Plan." August 1, 1932. In City & County of Honolulu Municipal Reference and Records Center, City & County Archives.

⁹ William Savidge, *Journal of the Senate, Prepared for the Fourth Legislature of the Territory of Hawaii, Regular Session 1907* (Honolulu: Hawaiian Star Print) 1907. p. 133.

¹⁰ MKE Associates, LLC and Fung Associates, Inc. *Hawaii State Historic Bridge Inventory and Evaluation*. (Honolulu: State of Hawaii, Department of Transportation, Highways Division). 2013. p. 4-109.

¹¹ MKE, *Historic Bridge Inventory* p. 5-25.

¹² MKE, *Historic Bridge Inventory* p. 5-181.

¹³ MKE, *Historic Bridge Inventory* p. 1-26.

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The City and County drawings for the bridge, which were produced in 1932, indicate the engineer was "G.K. Dawson." George K. Dawson was the engineer for the extant 1932 steel through-deck Warren truss Karsten Thot Bridge over the Wahiawa Reservoir,¹⁴ as well as for the 1930 Kapalama Canal Bridge, both on Oahu.

City and County Engineer Robert S. Mowry signed and approved the Queen Street Bridge construction drawings. Mowry was a graduate of the Van Der Naillen School of Engineering in California. The City and County named him project engineer for the Honolulu Engineering Department in 1925, and five years later he was promoted to Chief Engineer of Plans and Specifications, replacing D. F. Balch. He retired from his position with the City in 1945, and later took a job with Austin and Towill, a local engineering firm. He was later named as consulting civil engineer for R. M. Towill Corporation, one of Austin and Towill's successor firms.¹⁵

Herbert A. R. Austin, Chief Engineer, Department of Public Works also signed and approved the drawings. Austin was born in Hilo, Hawaii, received a degree in civil engineering at Cornell University in 1913, and was appointed the first Chief Engineer of the City and County Public Works Department in 1927. Austin then spent two years in private practice, followed by a second appointment in 1931 as the Chief Engineer. In 1934, he founded H. A. R. Austin, Consulting Engineer. From 1942 to 1959, Austin partnered with Roswell M. Towill in a joint venture under the name of Austin and Towill. After Towill left the firm in 1959, Austin and Towill was reorganized by Donald S. Austin and Russell L. Smith, Jr., and later incorporated as Austin, Smith and Assoc., Inc. In 1975, Caesar Tsutsumi joined the firm, and since that time the firm has been known as Austin, Tsutsumi & Associates, Inc. Herbert A. R. Austin was remembered at the time of his death as a "prominent *kamaaina*" (Hawaiian term meaning long-term resident of the Hawaiian Islands) and an "outstanding engineer."¹⁶

Makai Arterial

In the mid-1940s, automobiles traveling the *makai* route between Pearl Harbor and Waikiki experienced a bottleneck on Queen Street between the downtown area and Iwilei. The *Makai* Arterial, a limited access highway, was developed to resolve the traffic problem, specifically to "ease travel between Pearl Harbor and Honolulu and between the airport and harbor and the Waikiki hotel district."¹⁷ Initially conceived as the eight-lane Honolulu to Pearl Harbor Road and later named Nimitz Highway, the Annual Report of the [Territorial] Department of Public Works later stated that the "Makai Arterial got its start in 1942, when an improvement of the road from Pearl Harbor Gate to Pearl Harbor Junction went under construction. Since then, successive contracts have been let on construction of a new, wide, limited access highway from the gates of Pearl Harbor to Kalakaua Avenue."¹⁸

The Department of Public Works executed contracts with various construction companies for different portions of the arterial. They included Hawaiian Dredging Co., Ltd., which was

¹⁴ MKE, *Historic Bridge Inventory* p. 4-88.

¹⁵ Newspaper articles on Mowry at the University of Hawaii, Hamilton Library, Honolulu Newspaper Clippings Morgue, on microfiche in Biographical section under: Mowry. Various Dates.

¹⁶ Newspaper articles on Austin at the University of Hawaii, Hamilton Library, Honolulu Newspaper Clippings Morgue, on microfiche in Biographical section under: Austin. Various Dates.

¹⁷ Superintendent of Public Works, *Report to the Governor, Territory of Hawaii, for the Year Ending June 30, 1952*. (Honolulu: Territory of Hawaii Department of Public Works) p. 3.

¹⁸ *Ibid.* p. 12.

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responsible for the segments at the Queen Street Bridge. Formed by Walter F. Dillingham in 1902, Hawaiian Dredging Co.'s initial project was to widen the main channel at Pearl Harbor. The company subsequently built Dry Dock #1 at Pearl Harbor in 1909. In the 1920s, Hawaiian Dredging Co. constructed the Ala Wai Canal in Honolulu, and started undertaking general contracting work. During the 1930s, Hawaiian Dredging Co. built many bridges, and reshaped the landscape and waterways throughout the Hawaiian Islands including projects in Honolulu Harbor on Oahu, and developing the ports of Kahului, Maui and Hilo, Hawaii. Hawaiian Dredging Co. built the Iwilei section of the arterial at a cost of \$1,484,305.70, and the Queen Street section at a cost of \$642,826.80.¹⁹ After Hawaiian statehood, the company built the Honolulu International Airport, the Ala Moana Shopping Center, and numerous residential and commercial high rises and hotels. The company is still active in construction today, as "Hawaii's oldest and largest full-service construction company."²⁰

In March 1947, the section of the Honolulu to Pearl Harbor Road that was newly built between Waiakamilo Road and the Pearl Harbor gate was given the name Nimitz Highway, in honor of Chester W. Nimitz, the Chief of Naval Operations in the Pacific during World War II. The name Nimitz Highway was later applied to the eastern sections of this as well, as they were built from Waiakamilo Road to Fort Street where it connected to Ala Moana Boulevard (originally called "the Ala Moana").

Plans for the *Makai* Arterial evolved over time. The Territorial Department of Public Works and the City and County of Honolulu disagreed on the exact configuration of the arterial, as well as if any portion of the new road should be elevated. The two agencies reached a partial agreement in March, 1948, that settled on the current (at grade) street layout in the section between River Street and Prison Road in Iwilei, and includes the Queen Street Bridge over Nuuanu Stream. In this agreement, Prison Road became the westbound lanes of Nimitz Highway through Iwilei, while the eastbound traffic was carried on newly constructed lanes *makai* of Prison Road. The Queen Street Bridge carried the westbound traffic to its junction with Prison Road.

Construction of the westbound sections of Nimitz Highway east and west of the bridge were completed in 1952, including the six- and eight-lane portion between Fort Street and Ala Moana Boulevard, and the Awa Street section in the Iwilei district.²¹

Subsequent plans for additions to the *Makai* Arterial in the mid-1950s included possible elevated portions both along Ala Moana Boulevard (including within Ala Moana Park), as well as an elevated segment that headed inland to link into the Mauka Arterial (later expanded, and known in 2019 as the H-1 Freeway). The plans for an elevated segment of the Makai Arterial did not come to fruition however.

Criterion C

Tee-Beam Bridges on Oahu

¹⁹ Superintendent of Public Works, *Report to the Governor, Territory of Hawaii, for the Year Ending June 30, 1951*. (Honolulu: Territory of Hawaii Department of Public Works) p. 40.

²⁰ History of Hawaiian Dredging Construction Company, Inc. from company website, <http://www.hdcc.com/company/company.html>
Accessed on April 1, 2013.

²¹ "Makai Arterial Construction in Final Stage," *Honolulu Advertiser*, March 2, 1952. p. 9.

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Concrete tee-beam bridges are the most common type of extant pre-World War II bridges in the State of Hawaii.²² They are a part of the evolution of reinforced-concrete deck bridge technology in Hawaii that began with the first slab bridges around 1908. Often county-designed, these early slab bridges frequently consisted of concrete decks, which replaced older type superstructures on their original abutments, which were often lava rock and mortar. Design of reinforced-concrete deck bridges progressed rapidly during the first decades of the 20th century.²³ The strength of concrete girder and tee-beam types, and their lower cost, led to their use in locations with short spans, rather than the concrete-arched types.

Although the earliest tee-beam bridges in Hawaii date from about 1912, after about 1925 this bridge type became the preferred choice for bridge construction by the Territorial Highway Department. The modified pattern of reinforcing steel used within the girders was the feature that most distinguished the tee-beam type from other concrete girder bridges. Changing the arrangement of the reinforcing steel in the girders and deck, from the configuration used in earlier concrete girder bridges, served to structurally join the two²⁴ and allowed the two components to work together; thus, tee-beam bridges could efficiently carry a greater load. This relatively small change over standard girder construction provided an increased carrying capacity, and the tee-beam type quickly came into widespread use with examples constructed well into the 1950s.

Tee-beam bridges in Hawaii generally had parapets with voids beneath a reinforced concrete rail cap. "Several standard rail patterns [were] used by the Territorial Highway Department, either 'Greek-cross', arched, or simple rectangular voids."²⁵ Earlier masonry (lava rock or concrete) bridges typically had solid railings.

The overall length of Queen Street Bridge (Nuuanu Stream), approximately 154', makes it one of the longest tee-beam bridges on Oahu. However, the approximate 30' distance across each of its five spans is only of moderate length for tee-beam bridges on Oahu, as there are several with longer span lengths.²⁶

Solid Parapet Bridges on Oahu

The Queen Street Bridge has an atypical solid parapet design with distinctive molded detailing and rounded top rail. At the time of its construction, the most common parapet design featured narrow, arched-top voids. These first came into use ca. 1930 when they began to replace the typical solid, concrete parapets with rectangular top rails that had been in use since 1918. The solid parapet design of the Queen Street Bridge has a rounded top rail and contoured end stanchions, quite unlike the earlier typical solid parapet design. It is one of only two known examples of its type on Oahu, the other being the 1929 Kalakaua Avenue bridge over the Ala Wai Canal.

²² MKE, *Historic Bridge Inventory* p. 1-33.

²³ Parsons Brinckerhoff and Engineering and Industrial Heritage, A Context for Historic Bridge Types, NCHRP Project 25-25, Task 5. (Prepared for the National Cooperative Highway Research Project) October 2005. pp. 2-26.

²⁴ Ibid., p. 3-88.

²⁵ MKE, *Historic Bridge Inventory* p. 1-33.

²⁶ Thompson, Bethany, *Historic Bridge Inventory, Island Of Oahu* (Prepared for the State of Hawaii Department of Transportation, Highways Division) 1983. Sec VII, various pages.

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Most solid parapet concrete bridges were constructed on Oahu between 1918 and 1938. This is one of the most common types of parapet designs. These bridges usually have a balustrade of inset panels that are typically between about 6' and 9' long. These common parapets also feature a rectangular-profile, canted or sloped top rail and end stanchions. Of the approximately 42 solid parapet bridges built on Oahu between 1918 and 1938, 38 of them are of similar construction.

Five solid parapet bridges with atypical parapets were built on Oahu between 1918 and 1938; the Queen Street Bridge, the N. King Street Bridge (1922), Kalakaua Bridge (1929), the N. Hotel Street Bridge (1936), and the Date Street Bridge (1937). Among these, the Queen Street Bridge is one of the more detailed. It has a rounded top rail with rectilinear moldings joining the top and bottom rails to the un-paneled, smooth finish balustrade. Also atypical and distinctive features of the bridge are the contoured end stanchions, which are formed from a continuation of the rounded top rail, moldings, and smooth balustrade surface.

The variation of the solid parapet design employed on the Queen Street Bridge is an important phase of the development of solid parapet bridges on Oahu, coming near the end of the period of their widespread use. It illustrates a design transition from the common paneled, solid parapet design to some later solid parapet bridges that featured metal railings such as the N. Hotel Street Bridge (1936), and Moderne styling such as the Date Street Bridge (1937).

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9. Major Bibliographical References

Bibliography (Cite the books, articles, and other sources used in preparing this form.)

Primary Sources Architectural Drawings and Early Views

Original and historic drawings of the Queen Street Bridge are electronic files located in the City & County of Honolulu Municipal Reference and Records Center, City & County Archives.

A series of seven drawings (dwg # 4-285 through 4-291) are dated August 1, 1932. These show the bridge engineer as G.K. Dawson. They drawings are signed by the City & County (Honolulu) Engineer, R. S. Mowry and approved by Chief Engineer, Department of Public Works, H.A.R Austin. Note that these drawings are titled "Queen Street Bridge (Nuuanu Stream)."

A second set of six drawings (dwg # 4-292 through 4-297) are undated. These show the engineer as G.K. D.[Dawson].

An additional drawing (stamped # 17-54, and in the title block numbered either "N-5-2" or "N-S-2") prepared by Hawaiian Contracting Co. is titled "Detail Showing Location of Splices in Sheet Piling – Ewa Wall Queen Street Bridge." The personnel names and dates on the title block are illegible.

Additional drawings are located in the Hawaii Department of Transportation (DOT), Design Section database of drawings. These drawings show several repair projects in proximity to the bridge, and 1990 plans of a roadway resurfacing project (Proj. No. 92A-01-90M) that shows a plan view of the roadway at the bridge.

Historic maps and aerial photos are located in the collection of the Hawaii State Archives. Aerial photos in the collection of the Hawaii State Archives were created under contract for the Hawaii Territorial/ State Land Use Bureau and are in the public domain.

Secondary Sources

Dove, Charles V.E. "Map of Honolulu, Hawaiian Islands," 1912. In map collection of Hawaii State Library, Main Library.

Hawaii Department of Transportation Highway Design Section, Various drawings from database of Highway Design Section. Various Dates.

Honolulu Advertiser

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"Battle Over New Arterial In New Phase." April 18, 1947. p. 11.

"Survey Shows Need For Two Arterial Roads." November 22, 1947. p. 9.

"Belt Disagrees With City On Arterial Plan." December 19, 1947. p. 8.

"Waterfront Arterial Plan Revised Here." January 13, 1948. p. 1.

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"Makai Route Arterial Gets Partial O.K." March 2, 1948. p. 1.
"Makai Arterial Bids Opened Today." October 25, 1949. p. 9.
Hogue, Charles E. "Street That Oxen Laid Out," January 26, 1950. p. 8.
"Waterfront Damage Seen In Arterial." January 26, 1950. Sec. 2, p. 1.
"Prison Road Part Of Nimitz Highway." October 11, 1950. p. 1.
"\$612,216 Low Bid For Queen St. Highway." March 1, 1951. p. 1.
"Makai Arterial Construction In Final Stage." March 2, 1951. p. 9.
"Competition of Final Contract For Makai Arterial Is Due by October." June 15, 1952. p. 8.
"Makai Arterial Traffic Pattern Set for Monday." August 1, 1952. p. 11.
"New Leg Of Nimitz Highway." December 14, 1952. p. 5.

Honolulu Star Bulletin

"Traffic Survey Set Here To Map Projected Arterial Highways." August 22, 1946. p. 15.
"Thousands Use Nimitz Highway Every Day (But May Not Know It)." August 1, 1947. p. 7.
"Figures Offered to Prove Worth Of Both Mauka, Makai Arterials." January 30, 1948. p. 3.
"Route Plans For The Mauka And Makai Arterial Highways." March 3, 1949. p. 1.
Makai Arterial To Be Completed Or In Process By End Of 1950." May 19, 1949. p. 4.
"Newest Link in Makai Arterial Open to Traffic. December 8, 1949. p. 4.
"Difficulty Cited In Determination Of Piling Lengths." September 5, 1951. p. 5.
"Historical Memories Stirred By Makai Arterial Builders." July 16, 1952. p. C3.

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Schmitt, Robert C. "Early Hawaiian Bridges," *The Hawaiian Journal of History*, Vol. 20, 1986.

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Thompson, Bethany. *Historic Bridge Inventory, Island Of Oahu.* Prepared for the State of Hawaii, Department of Transportation, Highways Division. June 1983.

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Wright Harvey & Wright. Honolulu, Territory of Hawaii. Corrected 1932. In map collection of Hawaii State Library, Main Library.

Newspaper articles on R.S. Mowry and H.A. R. Austin are available at the University of Hawaii at Manoa, Hamilton Library, Honolulu Newspaper Clippings Morgue, on microfiche in Biography section under: Mowry and Austin. Various Dates.

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 # HI-126
- ☐ recorded by Historic American Landscape Survey # _____

Primary location of additional data:

- ☐ State Historic Preservation Office
- ☐ Other State agency
- ☐ Federal agency
- ☐ Local government
- ☐ University
- ☐ Other
- Name of repository: _____

Historic Resources Survey Number (if assigned): 50-80-14-08087

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10. Geographical Data

Acreage of Property less than one acre

Use either the UTM system or latitude/longitude coordinates

Latitude/Longitude Coordinates (decimal degrees)

Datum if other than WGS84: _____

(enter coordinates to 6 decimal places)

1. Latitude: 21.313400 Longitude: -157.86580

2. Latitude: Longitude:

Or

UTM References

Datum (indicated on USGS map):

☐ NAD 1927 or ☐ NAD 1983

1. Zone: Easting: Northing:

2. Zone: Easting: Northing:

Verbal Boundary Description (Describe the boundaries of the property.)

The boundary of the Queen Street Bridge is defined by the outer limits of the structure, enclosed by a trapezoid that includes the superstructure and abutments. See boundary map.

Boundary Justification (Explain why the boundaries were selected.)

The boundary of the property includes all historic features of the bridge.

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11. Form Prepared By

name/title: Dee Ruzicka
organization: Mason Architects, Inc.
street & number: 119 Merchant St. Suite 501
city or town: Honolulu state: HI zip code: 96813
e-mail: dr@masonarch.com
telephone: 808-536-0556
date: December 2019

Additional Documentation

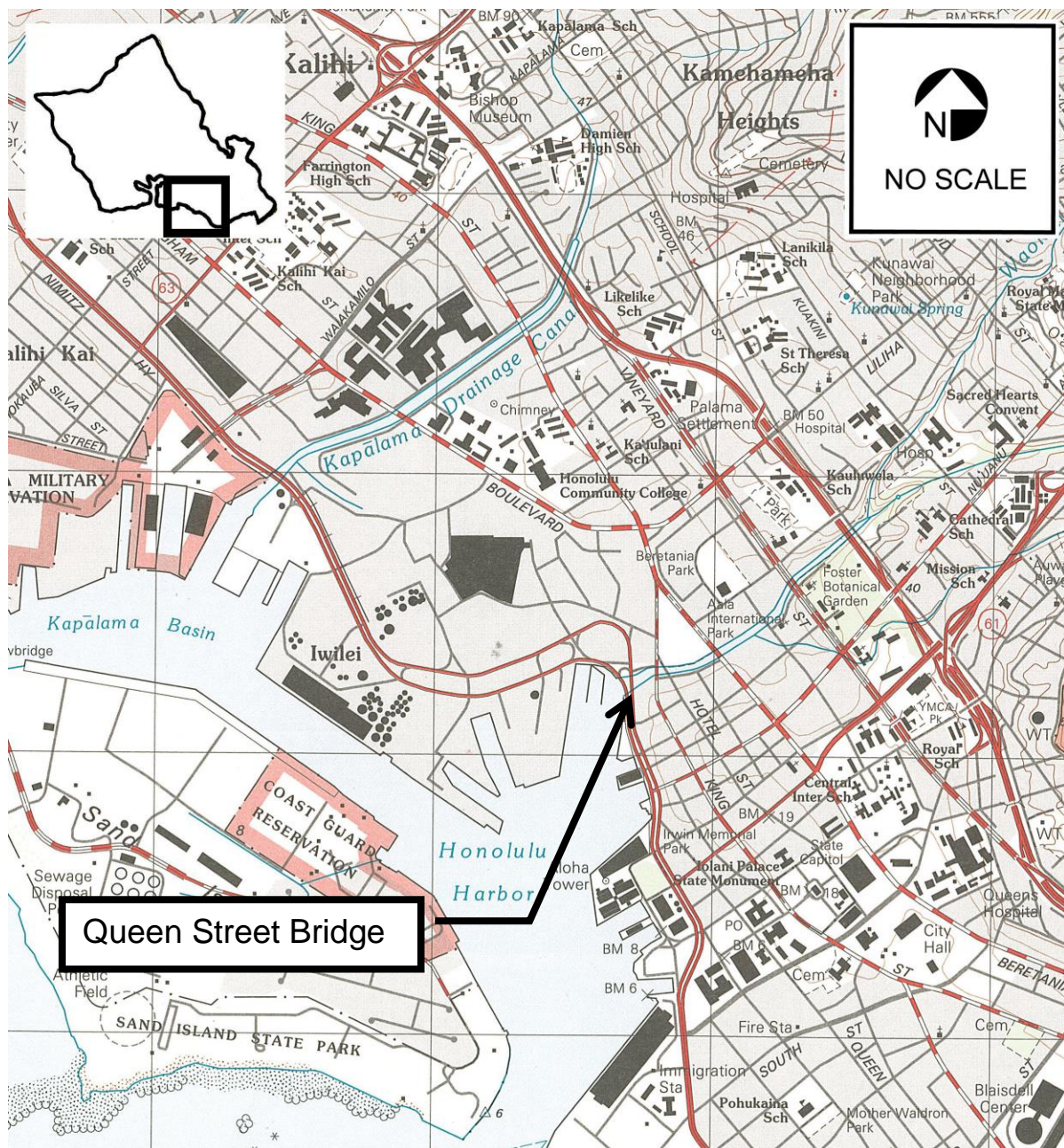
Submit the following items with the completed form:

- **Maps:** A **USGS map** or equivalent (7.5 or 15 minute series) indicating the property's location.
- **Sketch map** for historic districts and properties having large acreage or numerous resources. Key all photographs to this map.
- **Additional items:** (Check with the SHPO, TPO, or FPO for any additional items.)

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Location Map



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Boundary Map for Queen Street Bridge

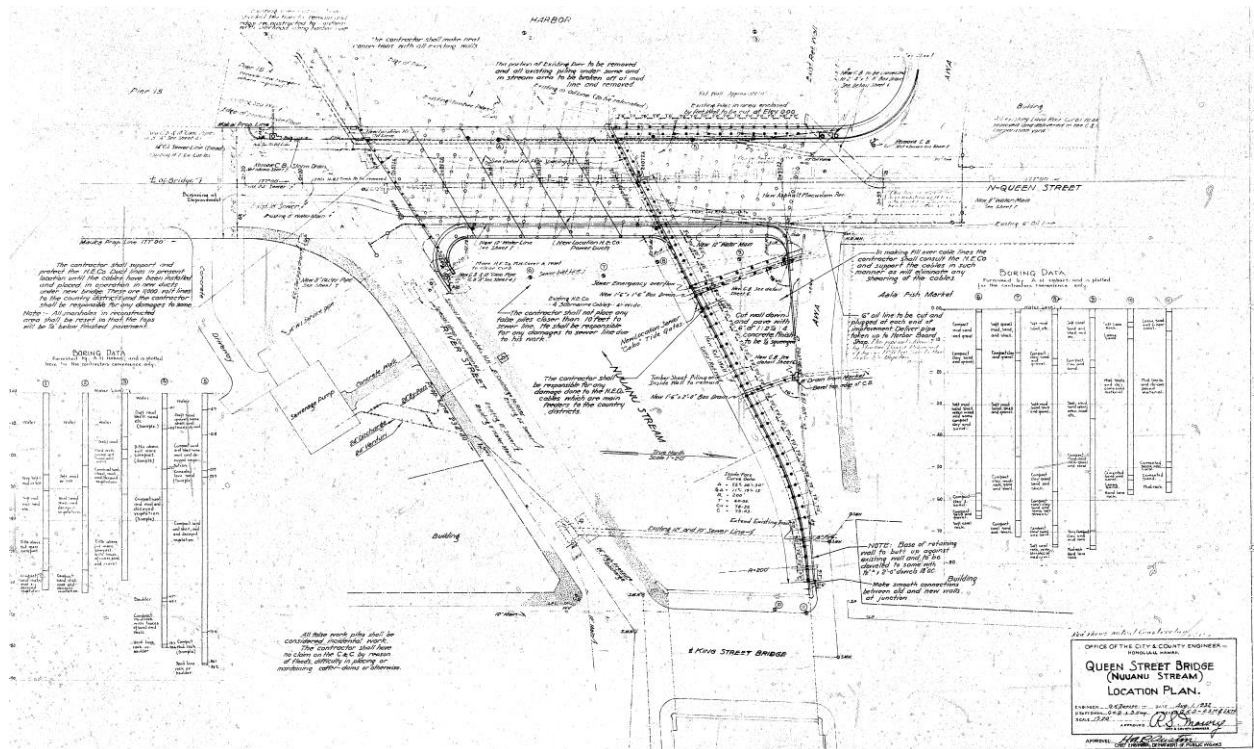


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Original Drawing

Original location plan drawing for the Queen Street Bridge, engineer George K. Dawson and dated August 1, 1932. This is drawing number 4-285: 2-1-1-11 in the City & County of Honolulu Municipal Reference and Records Center, City & County Archives.

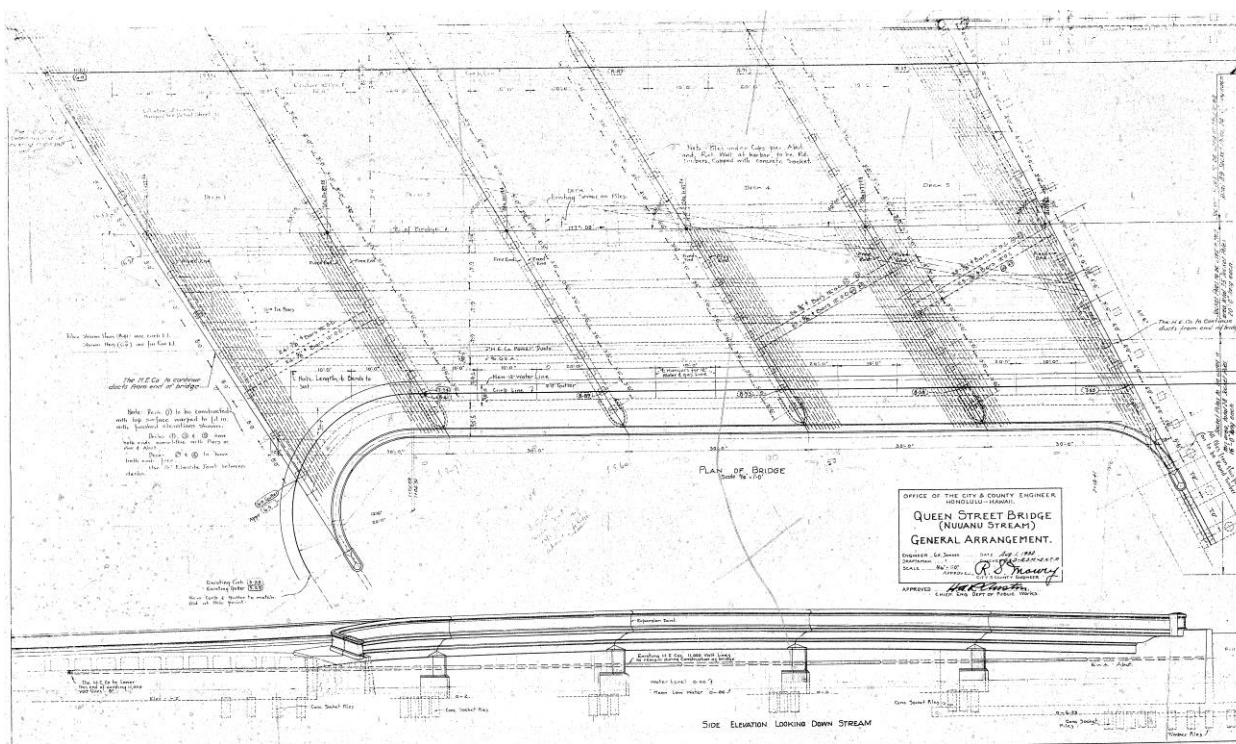


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Original Drawing

Original general arrangement drawing for the Queen Street Bridge, engineer George K. Dawson and dated August 1, 1932. This is drawing number 4-286: 2-1-1-12 in the City & County of Honolulu Municipal Reference and Records Center, City & County Archives.

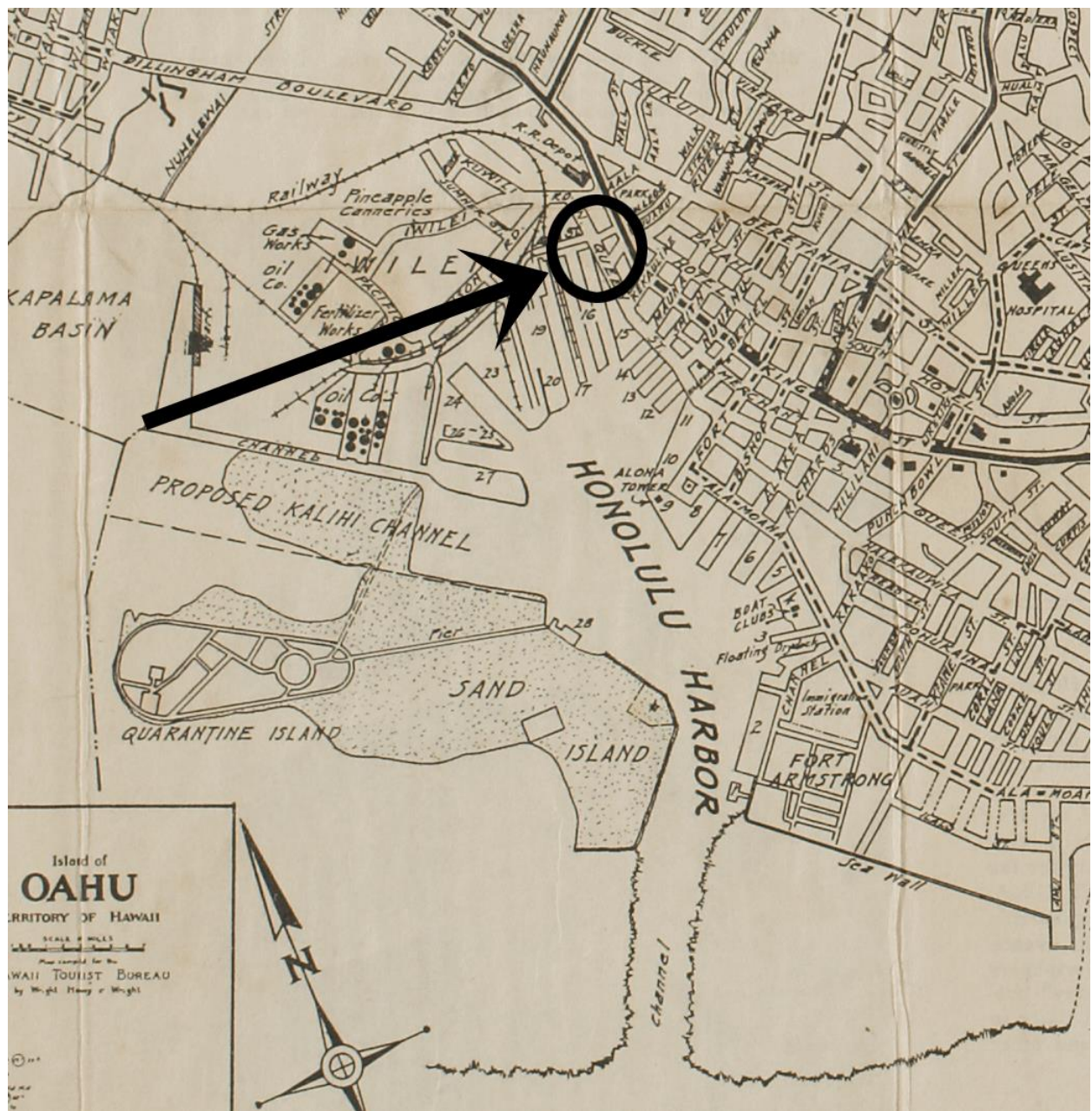


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1934 Map

Portion of 1934 map showing the area surrounding the Queen Street Bridge. Highlighting added. Map: Wright, Harvey & Wright, Honolulu.



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1940 Aerial Photo

Portion of aerial photo dated January 28, 1940 showing the area surrounding the Queen Street Bridge. Highlighting added. Photo: University of Hawaii at Manoa, MAGIS Collection: USGS Pacific Oahu, 1940, M-56-56.



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Photographs

Submit clear and descriptive photographs. The size of each image must be 1600x1200 pixels (minimum), 3000x2000 preferred, at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map. Each photograph must be numbered and that number must correspond to the photograph number on the photo log. For simplicity, the name of the photographer, photo date, etc. may be listed once on the photograph log and doesn't need to be labeled on every photograph.

Photo Sketch Map



Queen Street Bridge

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Photo Log

Name of Property: Queen Street Bridge

City or Vicinity: Honolulu

County: Honolulu 003

State: HI

Photographer: Dee Ruzicka

Date Photographed: August 2012 (Photos 1-13), April 19, 2017 (Photos 14-18)

Description of Photograph(s) and number, include description of view indicating direction of camera:

Photo #1 (HI_HonoluluCounty_QueenStreetBridge_0001)

Overview elevation of Nuuanu Stream 1932 Bridge, camera facing west.

Photo #2 (HI_HonoluluCounty_QueenStreetBridge_0002)

Overview of bridge approach, showing River St. intersection, camera facing north.

Photo #3 (HI_HonoluluCounty_QueenStreetBridge_0003)

Overview of mauka parapet, camera facing northeast.

Photo #4 (HI_HonoluluCounty_QueenStreetBridge_0004)

Overview of *makai* parapet, camera facing southeast.

Photo #5 (HI_HonoluluCounty_QueenStreetBridge_0005)

Overview of bridge approach, camera facing southwest.

Photo #6 (HI_HonoluluCounty_QueenStreetBridge_0006)

Elevation of mauka parapet with detail of outboard side of makai parapet, camera facing east.

Photo #7 (HI_HonoluluCounty_QueenStreetBridge_0007)

Detail of end stanchion showing bridge inscription, camera facing northwest.

Photo #8 (HI_HonoluluCounty_QueenStreetBridge_0008)

Detail of piers and outboard side of *mauka* parapet, camera facing northwest.

Photo #9 (HI_HonoluluCounty_QueenStreetBridge_0009)

Detail of end stanchion, camera facing northwest.

Photo #10 (HI_HonoluluCounty_QueenStreetBridge_0010)

Detail of the north abutment showing concrete construction, camera facing northwest.

Photo #11 (HI_HonoluluCounty_QueenStreetBridge_0011)

Detail of the south abutment, *mauka* side. Note the masonry construction near the water line, camera facing southeast.

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Photo #12 (HI_HonoluluCounty_QueenStreetBridge_0012)

Detail of the south abutment, *makai* side, camera facing southeast.

Photo #13 (HI_HonoluluCounty_QueenStreetBridge_0013)

Detail of a typical concrete pier showing the angled vertical end and rounded molding at waterline, camera facing southeast.

Photo #14 (HI_HonoluluCounty_QueenStreetBridge_0014)

Nimitz Highway context, camera facing south.

Photo #15 (HI_HonoluluCounty_QueenStreetBridge_0015)

Nimitz Highway context, camera facing northeast.

Photo #16 (HI_HonoluluCounty_QueenStreetBridge_0016)

Nimitz Highway context, camera facing north.

Photo #17 (HI_HonoluluCounty_QueenStreetBridge_0017)

Nuuanu Stream context taken from Hotel Street Bridge, camera facing west.

Photo #18 (HI_HonoluluCounty_QueenStreetBridge_0018)

Nuuanu Stream context taken from near Beretania Street Bridge, camera facing west.

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Photo #2 (HI_HonoluluCounty_QueenStreetBridge_0002)
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Photo #3 (HI_HonoluluCounty_QueenStreetBridge_0003)
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Photo #4 (HI_HonoluluCounty_QueenStreetBridge_0004)
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Photo #5 (HI_HonoluluCounty_QueenStreetBridge_0005)
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Queen Street Bridge
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Photo #6 (HI_HonoluluCounty_QueenStreetBridge_0006)
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Photo #7 (HI_HonoluluCounty_QueenStreetBridge_0007)
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Photo #9 (HI_HonoluluCounty_QueenStreetBridge_0009)
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Photo #15 (HI_HonoluluCounty_QueenStreetBridge_0015)
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Photo #16 (HI_HonoluluCounty_QueenStreetBridge_0016)
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Photo #17 (HI_HonoluluCounty_QueenStreetBridge_0017)
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Photo #18 (HI_HonoluluCounty_QueenStreetBridge_0018)

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Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 100 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Office of Planning and Performance Management, U.S. Dept. of the Interior, 1849 C. Street, NW, Washington, DC.